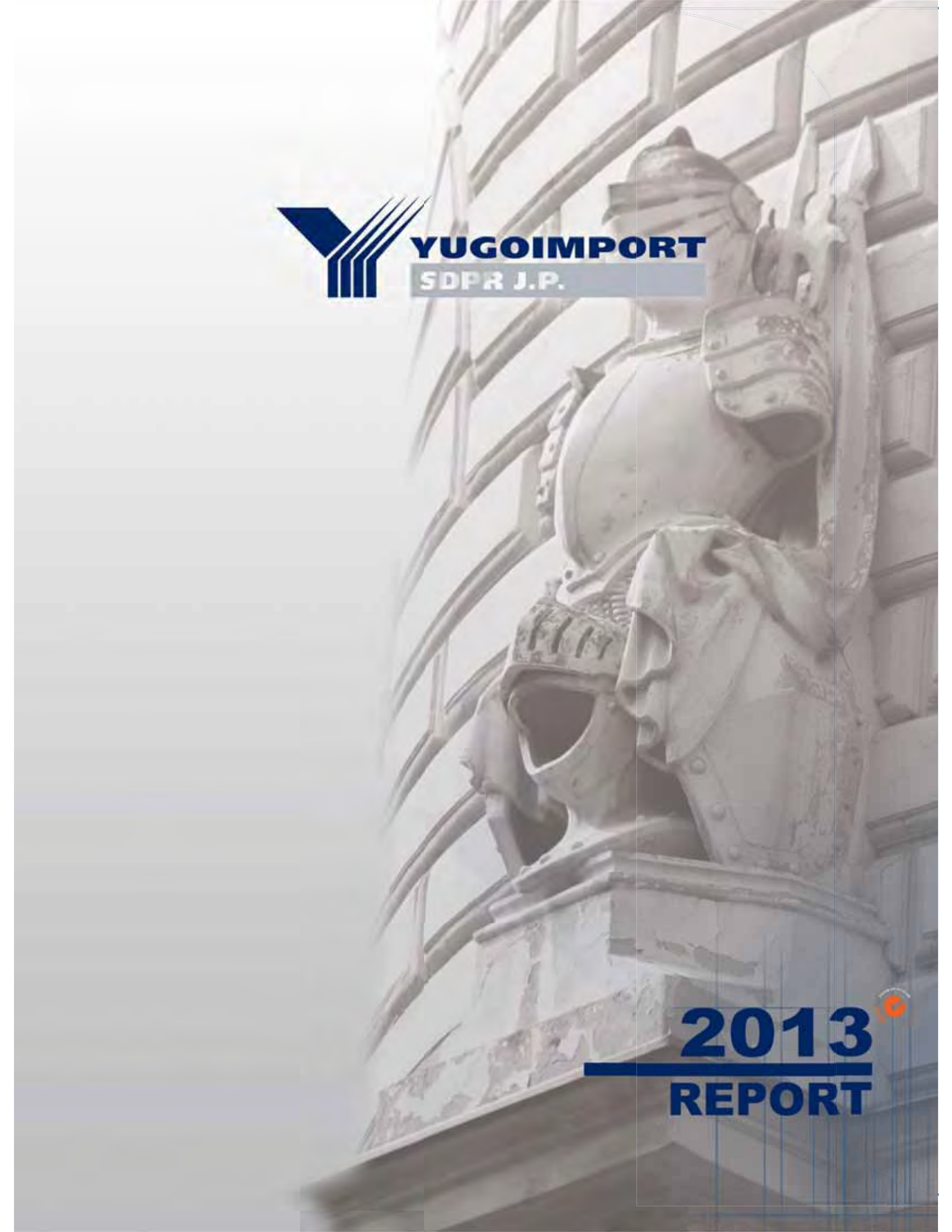
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REPORT

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# 2013 REPORT



## Impresum


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# REČ UREDNIKA EDITORIAL

Na kraju još jedne uspešne poslovne godine, Jugoimport-SDPR J.P. predstavljajući rezime svog poslovanja u novom broju kompanijskog časopisa Y Report, sa zadovoljstvom ističe da su ispunjeni svi planirani poslovni ciljevi i da smo otežavajuće okolnosti koje su pratile i domaće i svetsko tržište naoružanja i vojne opreme, uspeli da sagledamo ne kao pretnje, već kao izazove koji su nas ohrabrili da unapredimo svoje aktivnosti.

Poslovna politika Jugoimport-SDPR J.P. u prethodnom periodu bila je orjentisana ka već afirmisanim poslovnim misijama, pre svega sistemski integrisanom nastupu srpskog vojno-industrijskog kompleksa, na svetskom tržištu naoružanja i vojne opreme, gde ovom prilikom želimo da istaknemo izuzetnu saradnju sa Ministarstvom odbrane i njegovim institucijama, kao i relevantinim državnim instancama sa kojima smo uspešno organizovali brojne prezentacije i posete državnim zvaničnicima zemalja sa kojima ostvarujemo poslovnu saradnju.

Druga, ali ne manje važna misija ogleda se u sopstvenom razvoju i proizvodnji složenih borbenih sistema, koji su predstavljeni i u ovom broju časopisa. Da bi se na adekvatan način unapređivala ova poslovna funkcija, Jugoimport-SDPR J.P. uložio je značajna sredstva u unapređenje poslovnih

Completing another successful business year of Yugoimport-SDPR, we proudly present to you the summary of our successful dealings in this issue of company magazine called Y Report. We take pride in pointing out that we have fulfilled all business objectives we have planned succeeding to perceive the aggravating circumstances which influenced both domestic and world market of armaments and defense equipment not as potential threat but as the challenge which encouraged us to advance our activities.

Business policy of Yugoimport-SDPR in the past period was oriented towards already established business missions, the first and the most important of them being the system integrator of appearance of Serbian defense industry on the world market of armaments and defense equipment. Allow us to use this opportunity to point out the exceptional cooperation we have established and developed with the Ministry of Defense of the Republic of Serbia and its institutions, as well as with the relevant state institutions in successful organization of many presentations and visits of state officials to the countries with which we have business cooperation.

Another, not less important mission of Yugoimport-SDPR is our own development and production of complex combat systems which are presented in this issue of Y Report. In order to adequately improve this business function, Yugoimport-SDPR invested substantial means in improvement of business

procesa nekih preduzeća srpske odbrambene industrije, kako bi zajednički stvarali tržišno i tehnološki konkurentne proizvode i usluge. Pomenućemo ulaganja u novi pogon fabrike „Krušik“ Valjevo, kovačnicu vrednu 3,2 miliona evra i proizvodnju balističkih ploča za zaštitne prsluke takođe sa kompanijom Krušik, u domenu proizvodnje sferičnih baruta sa kompanijom Milan Blagojević Lučani, a od posebnog značaja za preduzeće je prodor u vazduhoplovnu industriju od pre nekoliko godina, razvojem, proizvodnjom i plasmanom aviona za osnovnu obuku pilota-LASTA sa kompanijom Utva Pančevo. Veoma značajno je investiranje i u proizvodnu jedinicu Morava u Velikoj Plani. Sve ove investicije premašuju vrednost od osam miliona dolara.

Jugoimport-SDPR J.P. uložiće sve svoje potencijale da i u budućnosti istrajava u ovim misijama, koje su nam bile vodilja u dosadašnjem poslovanju. Istraživanje tržišta, kao i praćenje trendova opremanja i potreba kupaca, potom aktivno učešće na međunarodnim izložbama NVO, su i biće osnovni marketinški alati u profilisanju petogodišnjeg plana, kako bismo uspeli da očuvamo svoju pozicioniranost na tržištima onih partnera sa kojima već dugi niz godina imamo uspešnu saradnju, ali i da upornošću i znanjem osvajamo nova tržišta i stvaramo nove strateške partnere.

Nakon desetogodišnjeg perioda, kopanija Jugoimport-SDPR J.P u novu poslovnu godinu ulazi predvođena novim rukovodstvom. Kolektiv Jugoimport-SDPR J.P. veruje da ćemo zajednički, uspešno nastaviti ovo putovanje, započeto davne 1949. godine.

processes of several companies of Serbian defense industry thus creating conditions for joint manufacture of products and services technologically competitive on the world market. Allow us to mention investment in a new plant of the factory „Krušik“ from Valjevo – blacksmith center worth 3.2 million Euro, as well as production of ballistic plates for bulletproof vests also mastered in cooperation with „Krušik“, andour cooperation with the company „Milan Blagojević“ from Lučani in production of ball powders. Particularly important for our company is the breakthrough the aircraft industry which started several years ago with the development, production and sale of LASTA aircraft for pilot basic tranining, carried out in cooperation with „Utva“ from Pančevo. Investment in production of „Morava“ plant from Velika Plana is also very important for our company. All above mentioned investments exceed the value of eight million US Dollars.

In future, Yugoimport-SDPR shall invest all its potentials to persevere in the above mentioned missions which have been the guidelines for our business activities so far. Market research, as well as obesrving the trends of equipping of complex systems, and the requirements of potential buyers, as well as active participation at international exhibitions of armaments and defense equipment have been and shall always be basic marketing tools for profiling of our five year business plan, thus enabling us to maintain our position on the markets of those partners with whom we have established successful long-term cooperation and to persist in conquering new markets with our knowledge and make new strategic partners.

After the period of ten years, Yugoimport-SDPR is entering new business year headed by new management. Yugoimport-SDPR managerial and expert staff believes that it will continue the journej towards success which commenced as early as 1949.

# ISTORIJAT HISTORY

Istorija kompanije počinje 18. juna 1949. godine Rešenjem predsednika Vlade FNRJ i Ministra narodne odbrane Maršala Josipa Broza Tita. Preduzeće za međunarodnu trgovinu "Jugoimport" je osnovano 27. juna 1949. godine sa primarnim ciljem da uvozi delove i repromaterijal za potrebe domaće vojne industrije. Vremenom, proizvodni kapaciteti jugoslovenske vojne industrije prerasli su domaće potrebe, pa je izlazak na svetsko tržište bila ekonomska neminovnost. Od 1953. godine "Jugoimport" počinje da se bavi i izvozom.

Državnom odlukom, 1974. godine poslovi uvoza i izvoza naoružanja i vojne opreme centralizovani su u okviru novoformirane Savezne direkcije za promet i rezerve proizvoda sa posebnom namenom (SDPR), u čiji je sastav ušlo i preduzeće "Jugoimport". Donošenjem Zakona o Saveznoj direkciji za promet proizvoda sa posebnom namenom 1991. godine, Savezna direkcija za promet proizvoda sa posebnom namenom obavlja poslove u oblasti spoljnotrgovinskog prometa naoružanja i vojne opreme (STP NVO).

Nakon nekoliko reorganizacija, kompanija je dobila svoj današnji naziv Jugoimport-SDPR J.P. 1996. godine kada je donet Zakon o Javnom preduzeću Jugoimport-SDPR J.P.. Ovim zakonom Savezna direkcija transformiše se u javno preduzeće koje nastavlja pravni kontinuitet Savezne direkcije za promet proizvoda sa posebnom namenom. Raspad Državne zajednice Srbije i Crne Gore uslovio je redefinisanje osnivačkih prava Jugoimport-SDPR J.P.. Republika Srbija preuzela je osnivačka prava koja je u Jugoimport-SDPR J.P. imala Savezna Republika Jugoslavija, čime je Jugoimport-SDPR J.P. postao javno preduzeće u Srbiji.

Jugoimport-SDPR J.P. u „zlatnom periodu" svoga postojanja osamdesetih godina dvadesetog veka, je sa svojim komitentima bio jedan od najvećih izvoznika Jugoslavije, koji je u spoljnotrgovinski bilans zemlje svake godine upisivao milijarde dolara prihoda od izvoza. Zvanična statistika svrstala je tada Jugoimport-SDPR J.P. na listu jednog od deset najznačajnijih izvoznika NVO u svetu.

Danas, Jugoimport – SDPR J.P. je državno preduzeće sa uspešnom višedecenijskom tradicijom u prometu naoružanja, vojne opreme i transfera tehnologije.

The history of the Company started on June 18, 1949, with the Decree of the Prime Minister of the Government of the FPRY and the Minister of National Defense Marshal Josip Broz Tito. The enterprise for international trade Yugoimport was founded on June 27, 1949, with primary goal to import parts and raw materials and intermediary goods for the requirements of the domestic defense industry. In time, the production capacities of the Yugoslav defense industry exceeded the domestic requirements and, therefore, emergence in the world market became an economic inevitability. As of 1953, Yugoimport started dealing with export as well.

In 1974, by the State decision, the operations of import and export of armaments and defense equipment (ADE) were centralized within the newly formed Federal Directorate of Supply and Procurement (FDSP), of which Yugoimport enterprise became a part. By adoption of the Law on the Federal Directorate of Supply and Procurement in 1991, and the Federal Directorate of Supply and Procurement was engaged in the businesses in the area of foreign trade in armaments and defense equipment.

After several reorganizations, the Company got its present-day name Yugoimport - SDPR in 1996, when the Law on the Public Company Yugoimport – SDPR was passed. By this Law the Federal Directorate was transformed into a public company that became the legal successor of the Federal Directorate of Supply and Procurement. The disintegration of the State Union of Serbia and Montenegro called for the redefinition of the founder's rights in Yugoimport - SDPR . The Republic of Serbia gained the founder's rights that the Federal Republic of Yugoslavia had had in Yugoimport- SDPR , whereby Yugoimport - SDPR became a public company in Serbia.

Yugoimport - SDPR in the „golden period" of its existence in the eighties of the twentieth century, with its business partners, was one of the biggest exporters of Yugoslavia, which, each year, registered billions of Dollars of revenues from export in the foreign trade balance of the country. At the time, the official statistics classified Yugoimport - SDPR on the list as one of ten most important exporters of ADE in the world.

Today Yugoimport – SDPR is a state-owned company that has a successful several decades long history of trading in armaments, defense equipment, and technology transfers.

# ORGANIZACIONA STRUKTURA

# ORGANIZATIONAL STRUCTURE

Osnovi poslovne politike Jugoimport-SDPR J.P. koji treba da održe uspešnost poslovanja i obezbede budućnost našoj kompaniji, su moderan menadžment preduzeća, sposobnost prilagođavanja zahtevima međunarodnog tržišta NVO i ulaganje u mlad i školovan kadar. Da bi ostvario značajne rezultate na međunarodnoj poslovnoj sceni, Jugoimport-SDPR J.P. je uspostavio visok stepen saglasnosti između primenjene strategije poslovanja i izabranog modela organizacione strukture.

Organi upravljanja Jugoimport-SDPR J.P. određeni su Zakonom o javnom preduzeću Jugoimport –SDPR J.P. i čine ih: Upravni odbor, direktor i Nadzorni odbor.Upravni odbor ima predsednika i osam članova. Pet članova, kao i predsednika Upravnog odbora imenuje Vlada Republike Srbije, kao osnivač preduzeća. Ostala tri člana biraju iz se redova zaposlenih. Direktora Jugoimport–SDPR J.P. imenuje i razrešava Vlada Republike Srbije. Nadzorni odbor ima tri člana. Predsednika i jednog člana imenuje Vlada Republike Srbije, dok se jedan član bira iz redova zaposlenih.

Pravilnikom o organizaciji i sistematizaciji radnih mesta u Jugoimport-SDPR J.P. formirane su osnovne organizacione jedinice:

- Profitni centar
- Sektor za ekonomsko –finansijske poslove
- Sektor za zajedničke poslove

Profitni centar predlaže poslovnu politiku, ciljeve, strategiju i planove, obavlja poslove spoljnotrgovinskog prometa roba, usluga i inženjeringa iz oblasti NVO. Takođe organizuje aktivnosti preduzeća u cilju dobijanja novih i realizacije postojećih poslova iz oblasti spoljnotrgovinskog prometa NVO, civilnih roba i odgovarajućih usluga. U poslednjih nekoliko godina jedna od najznačajnijih aktivnosti Profitnog centra je iniciranje, koordiniranje i organizacija projektovanja i razvoja sredstava NVO. Obavlja i mnoge druge poslove iz delokruga rada Jugoimport-SDPR J.P..

The bases of the business policy of Yugoimport-SDPR, which should enable successful business operation and the future to our Enterprise are Company modern management, skill and capacity to adapt itself to the demands of the international ADE market and investment in young and educated staff. In order to realize major results in the international business arena, Yugoimport-SDPR has established a high degree of agreement between the applied business strategy and the selected model of its organizational structure.

The management bodies of the Public Company Yugoimport-SDPR are stipulated by the Law on the Public Company Yugoimport-SDPR and they are: the Managing Board, the Director, and the Supervisory Board. The Managing Board has a chairperson and eight members. Five members, as well as the chairperson of the Managing Board are appointed by the Government of the Republic of Serbia, as the founer of the Company. The other three members are appointed from the ranks of the employees. The Director of the Yugoimport-SDPR is appointed and relieved of duty by the Government of the Republic of Serbia. The Supervisory Board has three members. The chairperson and one member are appointed by the Government of the Republic of Serbia, while one member is elected from the ranks of the employees.

Further to the Bylaw on Organization and Job Systematization in Yugoimport-SDPR, the main organizational units have been formed:

- The Profit Center
- The Division of Economic and Financial Affairs
- The Division of Joint Services

The Profit Center proposes the business policy, objectives, strategy, and plans; it is engaged in foreign trade operations, in goods, services, and engineering in the area of ADE. Additionally, it organizes activities of Yugoimport-SDPR for the purpose of winning new and realization of current businesses in the areas of foreign trade in ADE and civilian goods and corresponding services. In the past few years, one of the most important activities of the Profit Center has been initiation, coordination, and organization of design and development of ADE items. It is also engaged in numerous other affairs within the terms of reference of Yugoimport-SDPR.

U sastavu Profitnog centra su tri sektora čije su aktivnosti usmerene na određena tržišta- Sektor Amerike i Evrope, Sektor Afrike i Bliskog istoka, Sektor Azije i Australije, Sektor za razvoj, inženjering i tehničku podršku i Samostalno odeljenje za robne i investicione poslove. Detaljna struktura ovih sektora data je u prikazanoj šemi organizacione strukture.

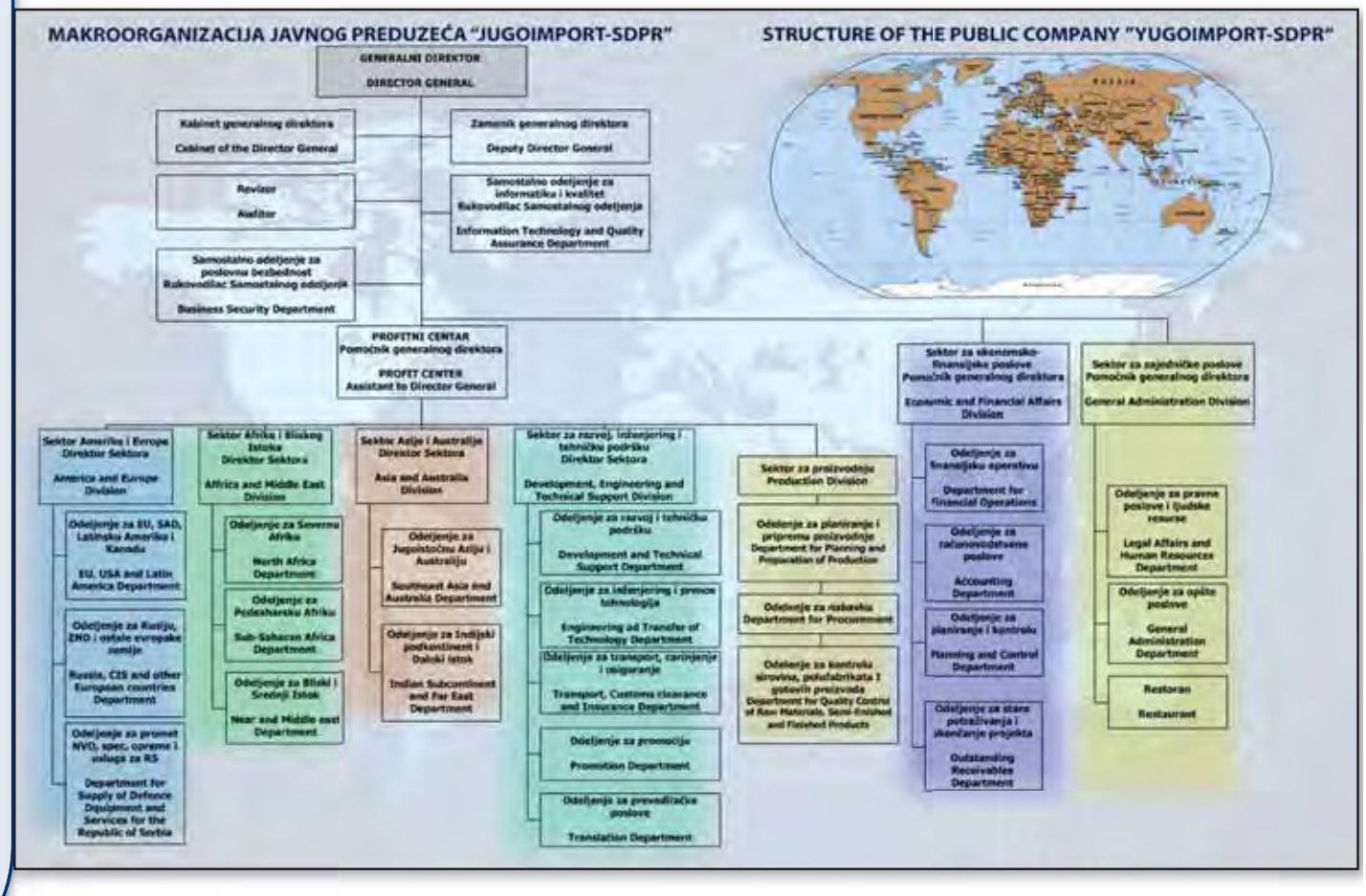
Sektor za ekonomsko-finansijske poslove obavlja finansijske i računovodstvene poslove kao i poslove planiranja, analize i finansijske kontrole poslovanja Jugoimport-SDPR J.P. i inostranih jedinica. Ovaj sektor vrši i realizaciju okončanja projekta i starih ugovora i poslove vezane za regulisanje starih potraživanja.

Sektor za zajedničke poslove čine odeljenja za pravne poslove i ljudske resurse,odeljenje za opšte poslove (delovodstvo,vozni park i služba za održavanje) i restoran .

There are three divisions within the Profit Center the activities of which are focused on specific markets - the Division of the Americas and Europe, the Division of Africa and the Middle East, the Division of Asia and Australia, as well as the Division for Development, Engineering, and Technical Support, and the Independent Department of Commodity and Investment Operations. The detailed structure of the above divisions is given in the diagram of the organizational structure.

The Division of Economic and Financial Affairs is engaged in financial and accounting affairs as well as in planning, analyses, and financial control of business operation of Yugoimport-SDPR and units dealing with foreign countries. It also finalizes projects and old contracts and deals with the tasks related to the settling of old claims.

The Division of Joint Services consists of the departments of legal affairs and of human resources, the department of general affairs (the registration office, motor fleet, and the maintenance service), and the restaurant.



# DOSEGNUTI SVET

# REACHING THE WORLD

Osnovna delatnost Jugoimport-SDPR J.P. od osnivanja do danas je spoljnotrgovinski promet sredstava naoružanja i vojne opreme, koji obuhvata izvoz i uvoz sredstava NVO, usluge u oblasti remonta i modernizacije sredstava NVO, obuku i školovanje kadrova, kao i kompleksne oblasti saradnje – pre svega transfer odbrambenih tehnologija, kapitalne investicije u oblasti odbrambene infrastrukture, zajednički razvoj, proizvodnu kooperaciju i dr.

Tokom navedenog perioda spoljnotrgovinski promet koji je Jugoimport-SDPR J.P. ostvarivao menjao se po strukturi i obimu. Preduzeće je započelo svoje poslove odmah po osnivanju uvozom repromaterijala i tehnološke opreme za preduzeća odbrambene industrije.

Prvi značajniji izvozni poslovi realizovani su tokom pedesetih godina i obuhvatili su izvoz artiljerijskih oruđa u zemlje Azije, izvoz municije proizvedene po američkoj dokumentaciji za potrebe oružanih snaga Grčke i Turske, kao i američkih snaga u Evropi.

Period od kraja pedesetih do kraja osamdesetih godina karakterističan je po značajnom povećanju asortimana, ubrzanom razvoju i većem obimu proizvodnje sredstava NVO razvijenim i proizvedenim u preduzećima odbrambene industrije u saglasnosti sa ruskim i NATO standardima.

Sedamdesetih godina započeti su značajni kompleksni projekti u domenu inženjering-poslova, koji su obuhvatali transfer odbrambenih tehnologija i izgradnju i opremanje objekata odbrambene infrastrukture. Tokom osamdesetih godina poslovi ove kategorije premašili su polovinu ukupnog ostvarenog izvoza.

Osamdesete godine su bile karakteristične i po nekoliko kapitalnih projekata razvoja i proizvodnje složenih borbenih sistema svih vidova oružanih snaga, od kojih su mnogi postali predmet značajnih izvoznih poslova.

U posmatranom periodu izvezeno je roba i usluga u kumulativnoj vrednosti od preko 20 milijardi USD (računato po vrednosti američkog dolara iz vremena ugovaranja, tako da je teško revalorizovati tu vrednost na danas merljivu).

Tokom 90-ih, obim izvoza je značajno smanjen, ali uz očuvanje veza sa tradicionalnim partnerima, pre svega zahvaljujući uspostavljenom poverenju. Tokom protekle dekade, dolazi do značajnih koraka konsolidacije preduzeća i uspostavljanja nove poslovne stategije.

The basic activity of the Public Company Yugoimport-SDPR from the very date of the establishment of the same onward has been and still is trade in armaments and defense equipment (ADE) including both export and import of ADE, services of overhaul and modernization of ADE, training and education of personnel, as well as complex fields of cooperation – first of all transfer of defense technologies, capital investments in defense infratructure, joint development, cooperation in production, etc.

Within the said period the foreign turnover Yugoimport-SDPR realized has changed both in structure and in scope. Immediately after the establishment the company started its business in import of raw material and technological equipment for the needs of the enterprises of Yugoslav defense industry.

The first major export deals were completed in 1950 and they included export of artillery weapons to several countries in Asia, as well as export of the ammunition manufactured accoding American technical documentation for the requirements of Greek and Turkish military forces, and US forces stationed in Europe.

The period encomassing the end of the nineteen-fifties until the end of the nineteen- eighties characterises major increase of the asortment, accelerated development and enlarged scope of production of armaments and defense equipment (ADE) developed and manufactured in the companies of the defense industry following both Russian and NATO standards.

The development of vital complex projects in the domain of engineering have started in the nineteen-seventies. They included transfer of defense technologies, construction and outfitting of the sites of the defense infrastructures. Business deals of this kind exceeded half of the total exports effected in nineteen-eighties.

The nineteen-eighties were marked by several capital projects of development and manufacture of complex combat systems for all services of the armed forces, many of which have become the subject of major export deals completed by our company.

Within the above mentioned period, the company exported goods and services in the value which cumulatively amounted to more than 20 billion US Dollars (calculated as per the value of US Dollar at the time of contracting, thus making it difficult to revalorize the said values to be measurable according to the perimeters of nowadays).

Jugoimport-SDPR J.P. danas, na svetskom tržištu naoružanja i vojne opreme nastupa kao marketinški i komercijalni ujedinitelj ponude srpske odbrambene industrije, u okviru koje ujedno integriše i ponudu složenih borbenih sistema iz sopstvenog razvoja i proizvodnje.

Dvadeset prvi vek karakterišu značajne promene u načinu i dinamici razvoja borbenih sistema, intenzivan razvoj borbenih sistema novih koncepata, neprekidno usložnjavanje arhitekture i primenjenih tehničkih rešenja.

Prateći globalne trendove u razvoju borbenih sistema, uz stalnu analizu tržišta i neposrednih potreba partnera, te prateći tehnološke potencijale srpske odbrambene industrije i industrije u širem smislu, Jugoimport-SDPR J.P. je u proteklih desetak godina, razvijajući nove i moderne tehnologije, uspeo da ostvari značajno unapređenje ukupne ponude, kao i značajno povećanje obima prodaje. Kapitalni projekti izvoza složenih borbenih sistema iz sopstvenih proizvodnih programa obuhvataju i izvoz proizvoda srpske odbrambene industrije, pre svega municije iz redovnih proizvodnih programa proizvođača.

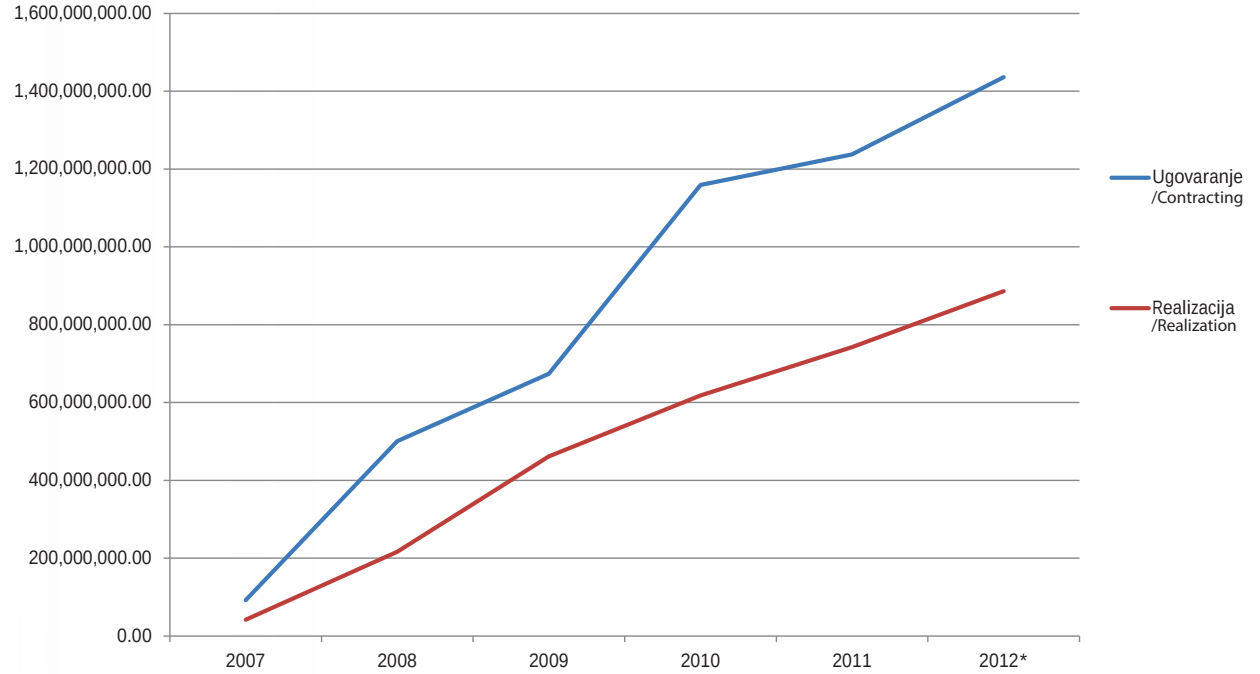
Prateći takav razvojni koncept, te zahvaljujući postignutim uspesima, Jugoimport-SDPR J.P. je već u svetskoj odbrambeno-tehnološkoj literaturi zauzeo mesto značajnog činioca u smislu razvoja sredstava NVO, čime na posredan način povećava poslovni imidž preduzeća srpske odbrambene industrije, te konkurentnost njihovih proizvoda.

Within the nineteen-nineties the scope of export was substantially decreased, but the relations with our traditional partners were maintained, first of all thanks to well estabilised confidence. The last decade was marked by major consolidation of our company and establishment of new business strategy.

Today Yugoimport-SDPR appears on the world market of armaments and defence equipmnet as marketing and commercal integrator of the offer of Serbian defese industry, including the offer of complex combat systems of its own development and production.

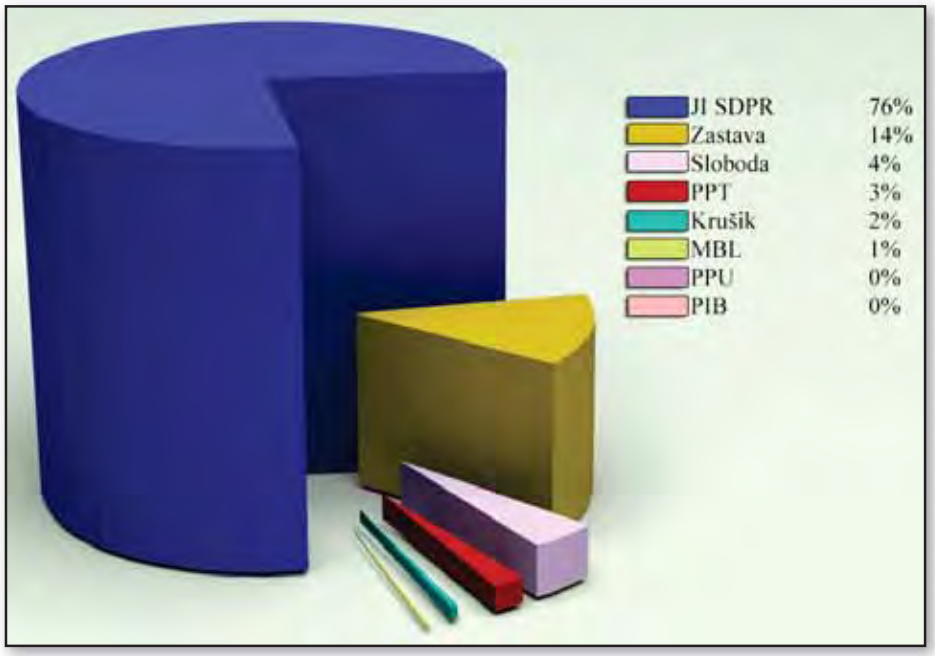
The twenty first century characterize substantial changes in the manner and dynamics of the development of combat systems, as well as intensive development of combat systems of new concepts, continuous making of more and more complex architecture of the same and applied technical solutions.

Following global trends in the development of contemprary combat systems, continiously performing analisys of the market and immediate necessities of our partners, as well as following the technological potentials of Serbian defense industry and the industry in general, Yugoimport-SDPR succeeded to carry out substantial improvement of the total offer of Serbian industry in the past decade by developing of new and contemporary technologies, thus achieving major increase in the total scope of sale. Capital projects of export of complex combat systems of its own production programs also included the export of the products of Serbian defense industry, above all the export of ammunition from regular production programs of the same.




*Poslovanje Jugoimport-SDPR J.P. u poslednjih nekoliko godina beleži konstantni rast, a u periodu od 2007. do 2012. godine ugovoren je spoljnotrgovinski promet u vrednosti od preko milijardu i četiristo miliona američkih dolara (dijagram br.1).*

*Business operations of Yugoimport-SDPR in the past several years has noted constant growth. Only in the period of 2007 thru 2012 foreign turnover exceeding one billion four hundred million US Dollars was contracted (Diagram No.1).*




Udeo preduzeća srpske odbrambene industrije u tekućim ugovorenim projektima Jugoimport-SDPR J.P.

Contribution of the Companies of Serbian Defense Industry to Current Export Projects of Yugoimport-SDPR

Jugoimport-SDPR J.P. dugoročno angažuje proizvodne kapacitete fabrika namenske industrije i kroz svoj dugogodišnji rad i stvaranje značajnih deviznih prihoda doprinosi očuvanju kapaciteta, unapređenju tehnologija i osvajanju proizvodnje novih proizvoda u kapacitetima odbrambene industrije.

Ugovaranjem i realizacijom izvoznih kapitalnih projekata u proteklom petogodišnjem periodu, od 2007. do 2012. godine Jugoimport-SDPR J.P., kao Javno preduzeće u vlasništvu države, značajno je doprineo održivom ekonomskom rastu domaće privrede.

Treba posebno naglasiti da se ta konstatacija odnosi i na period otežanih uslova poslovanja na globalnom nivou, koji je započeo krajem 2008. godine, kao i na period vojno-političkih potresa u regionu Severne Afrike.

Jugoimport-SDPR J.P. od prvih izvoznih poslova uspešno gradi poverenje kod svojih partnera, prateći i odgovarajući na njihove potrebe i specifične zahteve, gradeći odnose na bazi dugoročne saradnje, uz obaveznu ogranizaciju obuke, organizacije održavanja, remonta i isporuke rezervnih delova. Profesionalan i prijateljski pristup omogućio je očuvanje jako dobrih odnosa sa nizom već tradicionalnih partnera, pre svega iz zemalja Dalekog i Bliskog istoka.

Poslovanje preduzeća je organizovano po sektorima koji su odgovorni za svoje regione u cilju osvajanja novih tržišta i nastavka poslovanja na tradicionalnim tržištima. Tako organizovani poslovni modeli omogućavaju ostvarivanje vizije održavanja rasta prometa.

Following the above described development concept, and thanks to the achieved success, Yugoimport-SDPR has become major factor in the world defense technology literature as an important factor as far as the development of armaments and defence equipment is concerned, consequently increasing business image of the companies of Serbian defence industry, and competitiveness of their respective products.

Yugoimport-SDPR engages production capacities of the factories of the defense industry on long-term basis and, with its long duration activities and creation of substantial foreign currency earnings, contributes to preservation of those capacities, improvement of technologies and mastering of manufacture of new products within the existing capacities of Serbian defense industry.

Yugoimport-SDPR, as public company fully owned by our state, substantially contributed to sustainable economical growth of Serbian economy by contracting and realization of the export of capital projects in the past five-year period (2007 – 2012).

One should particularly point out that the above ascertainment also referres to the period of difficult conditions for business transactions on global level which comenced by the end of 2008, as well as to the period of military and political stir-ups in the region of North Africa.

From its first export deals Yugoimport-SDPR has succesfully built trust and confidence with its partners, following and responding to their necessities and specific requirements, thus establishing business relations on long-term basis, compulsory organizing training, maintenance and overhaul, as well as the delivery of spare parts.

Our professional and partnership approach enabled maintaining of very good relations with a number of already `traditional` partners, above all with the countries from the regions of Far and Middle East.

The operation of the company is organized in departments responsible for their respective regions as far as conquering of new markets and preserving of business relations with our traditional partners are concerned. Business models organized in such manner provide for fulfillment of the vision of maintaining of constant growth of the turnover of the company.

## Sektor Amerike i Evrope

*Tržište Sjedinjenih Američkih Država*

Orijentacija na tržište Sjedinjenih Američkih Država (SAD) predstavlja veliki izazov i priliku za uspon u svetskim okvirima u oblasti prometa naoružanja i vojne opreme. Poslovna aktivnost se do 2011. godine temeljila na izvozu minobacačke, artiljerijske, srednje kalibarske i specijalne municije za potrebe Vlade SAD. Visoke izlazne karakteristike, uniformnost svih relevantnih izlaznih parametara i posebno visoka pouzdanost primenjenih tehničkih rešenja, odnosno municije u celini, kao i profesionalni pristup složenim projektima saradnje sa Vladom SAD u ovoj oblasti predstvljaju čvrstu osnovu za saradnju. Višedecenijska tradicija u razvoju i proizvodnji municije po ruskim i NATO standardima, kao i visok stepen zaokruženosti tehnologija, (proizvodnja svih komponenata i sirovina za proizvodnju municije), u preduzećima srpske odbrambene industrije predstavljaju pouzdane osnove za proširenje ove saradnje u budućnosti. Jugoimport-SDPR J.P. je tokom 2011. i 2012. godine ugovorio značajne poslove sa partnerima iz SAD u oblasti sportskog i lovačkog oružja, tj. za civilno tržište. Ulazak na civilno tržište oružja SAD vrlo je značajan kada se ima u vidu njegov izuzetan tržišni potencijal, a istovremeno predstvalja priznanje za ostvareni kvalitet, uzimajući u obzir visoki standardi, zahtevi i osetljivost ovog tržišta. Za uspešno ugovaranje i realizaciju ovih projekta značajna je već osvedočena sposobnost Jugoimport-SDPR J.P. i osnovnog tehnološkog partnera – preduzeća Zastava Oružje, za brzo prilagođavanje tehničkih rešenja specifičnim standardima tržišta oružja za civilnu upotrebu.

*Tržište Latinske Amerike*

Dok je finansijska kriza ugrožavala svetska tržišta, ekonomske i političke reforme koje su se sprovodile u Latinskoj Americi omogućile su zemljama regiona da se izbore sa kreditnom krizom i dale mogućnost za ekonomski rast. Strategija Jugoimport-SDPR J.P. je usmerena ravnomerno na tržište Srednje i Južne Amerike. Do sada ostvarena saradnja daje jake osnove za optimizam.

*Tržište Evrope*

Donošenje odluke o pokretanju i nastavku saradnje sa velikim svetskim kompanijama predstavlja odgovor na strukturalne promene u poslovnom okruženju, a proizašla je iz:

1. Potrebe da se oformi integrisani pristup sa novim strateškim partnerima na globalnom nivou
2. Potrebe proširenja i stabilizovanja saradnje sa tradicionalnim ključnim partnerima

Dosadašnje poslovanje je dalo poseban pozitivan impuls kojim se utvrđuju temelji za nastavak saradnje i uspostavljanje jačih veza koje će doprineti širenju saradnje na nova tržišta. Uspešnom realizacijom projekata saradnje sa partnerima iz najrazvijenijih zemalja Zapada, čija vrednost

## America and Europe Department

*The Market of the United States of America*

Orientation towards the market of the United States of America (USA) represents major challenge and the opportunity for uprisal within the world framework in the filed of trade in armaments and defence equipment. Untill 2011 business activities in the above field were based on the export of mortar, artillery, medium calliber and special ammunition for the requirements of the Government of USA. High output characteristics, uniformity of all relevant output parameters and especially high reliability of the applied technical solutions, namely of the ammunition as whole, as well as professional approach to complex projects of cooperation with the Government of USA in the said field represent sound basis for cooperation. The tradition of many decades in the development and production of the ammunition as per Russian and NATO standards, same as high degree of completeness of the applied technologies (such as production of all componets and raw materials required for ammunition production) in the companies of Serbian defense industry represent reliable basis for the extension of the said cooperation in future. During 2011 and 2012, Yugoimport-SDPR has contracted substantial businesses with the partners from USA as far as sporting and hunting armaments are concerned, the so called civil market. Entering US civil market of armaments is very important if you have in mind is exceptional market potential and, at the same time, it represents confirmation of the achieved quality bearing in mind high standards, requrements and the sensitivity of the market in question. The confirmed capability of Yugoimport-SDPR and its basic technological partner – Zastava Arms company to quickly adjust the technical solutions to the specific standards of the market of the civil armament is of vital importance for succesful contracting and realization of the above mentionel projects.

*The Market of Latin America*

While financial crisis endangers the world market, economical and political reforms implemented in Latin America have enabled the countries of that region to fight the credit crisis successfully, thus creating the possibility for their economical growth. The strategy of Yugoimport-SDPR has been evenly directed towards the markets of Mid and South America. The cooperation established so far has given strong basis for our sound optimism.

*The Market of Europe*

The decision to start up and continue cooperation with leading world companies represents the response to the structural changes in the market environment. The same emerged from the following:

1. The necessity to form an intergated approach towards new strategic partners on the global level, and

u poslednjih nekoliko godina dostiže više desetina miliona USD, Jugoimport-SDPR J.P. dokazuje postignuti kvalitet procesa poslovanja.

Ova kooperacija doprinosi razvijanju poslovne reputacije našeg preduzeća i pokazuje spremnost i sposobnost da stane rame uz rame sa velikim svetskim firmama.

## Sektor za Bliski istok i Afriku

Bliski istok i Afrika predstavljaju značajno, a u pogledu ukupno ostvarenog obima izvoza najznačajnije tržište. Prošlih godina Jugoimport-SDPR J.P. je napravio prodor na nekoliko novih tržišta iz ovog regiona, dok je saradnja sa tradicionalnim partnerima zabeležila tendenciju rasta.

Vojno-politički potresi u Severnoj Africi doveli su do ozbiljnog poremećaja i potpunog prekida kontinurane saradnje sa nekim tradicionalnim partnerima.

Jugoimport-SDPR J.P. je na ovako izazvano odstupanje od planiranog razvoja poslovanja odgovorio preusmeravanjem težišta marketinških napora prema drugim tržištima. Ovakav potez je doneo je konkretne rezultate u smislu ugovaranja i realizacije, a samim tim ublažio posledice gubitka tržišta potresima pogođenih zemalja.

Među državama sa Bliskog istoka najznačajniji partner Jugoimport-SDPR J.P. je Republika Irak, sa kojim su počev od 2007. godine potpisani ugovori u vrednosti od približno 400 miliona USD, i uključuju isporuku školskih aviona LASTA 95, modernizaciju helikoptera, minobacača i pripadajuće municije, lične balističke zaštitne opreme, uniformi, ličnog naoružanja, itd.

Nakon značajnih marketinških napora, zaključen je ugovor iz oblasti transfera odbrambenih tehnologija sa partnerom iz regiona Severne Afrike, koji je od izuzetne važnosti za srpsku odbrambenu industriju (ugovor o integraciji proizvodnje municije srednjeg i velikog kalibra). Ovaj projekat je značajan i zbog toga što omogućava ponovno uspostavljanje mogućnosti za realizaciju kapitalnih projekta iz oblasti inženjering poslova.

Odnosi sa podsaharskim zemljama se takođe intenziviraju, naročito nakon kvalitativnog proširenja ponude Jugoimport-SDPR J.P. uvođenjem u serijsku proizvodnju više složenih borbenih sistema, pre svega artiljerijskog sistema familije NORA-B/52, čiji je izvoz predmet više značajnih aktuelnih ugovora. Kompleksni poslovi izvoza ovog borbenog sistema, obuhvataju ne samo izvoz artiljerijskih oruđa i municije, već i pratećih podsistema, pre svega artiljerijskog sistema za upravljanje vatrom i komandno-informacionog sistema integrisanog na familiji komandno-izviđačkih vozila, zatim logističkih vozila i dr. Realizacija ovih ugovora predstavlja dugoročan projekat, omogućavajući čvršće povezivanje sa partnerom, doprinoseći uspostavljanju uzajamnog poverenja, te otvarajući vrata za nove poslove.

2. The necessity to enlarge and stabilize cooperation with our traditional key partners.

So far, our business dealing has given particular positive impulse to improve the foundations for continuation of this cooperation and establishment of stronger relations which should imrpove the extension of cooperation with new markets. Sucessfull realization of the projects of cooperation with the partners from the most developped countries of Western Europe, the value of which reached several tens of millions of US Dollars in past several years, has proven the achieved quality of the processes of business dealings of Yugoimport-SDPR.

The above mentioned cooperation contributes to the development of business reputation of our company, and shows our readiness and ability to stand to the world leading companies.

## Middle East and Africa Department

Middle East and Africa represent an important if not the most important market for our company if we look at total achieved scope of export. In the past several years, Yugoimport-SDPR has entered several new mrkets in this region, while the cooperation with our traditional partners has shown the tendency of growing.

Military-political turmoils in the region of North Africa have caused serious disturbance and complete break down of continuous cooperation with several traditional partners.

Yugoimport-SDPR responded to the deflection from the planned development of its business operations caused by the said disturbances by redirecting the center of its marketing efforts towards other markets. This move brought palpable results as far as contracting and realization of the same were concerned, thus softening the consequences of the loss of certain markets caused by the disturbances in the affected countries.

The most important partner of Yugoimport-SDPR among the countries of the Middle East region is the Republic of Iraq. As of 2007 Yugoimport-SDPR signed the contracts for cooperation with Iraq amounting to approximately 400 million US Dollars. These contracts included the delivery of LASTA 95 training aircraft, modernization of helicopters, mortars and associated ammunition, personal ballistic protective equipment, uniforms, personal armament, etc.

Substantial marketing efforts were made to conclude a contract for the transfer of defense technologies with a partner from the region of North Africa. This deal is of excetional importance for Serbian defence industry (the contarct on integration of production of intermediate and big calliber ammunition). This project is also important because it enables re-establishing of the possiblity for realization of capital projects in the filed of engineering.

The relations with the coutries of Sub-Sahara region have also intensified, particularly after qualitative extension of the offer of Yugoimport-SDPR by introducing a number of complex combat systems into serial production, such as the artillery systems pertaining to NORA-B/52 family, the export of

## Sektor Azije i Australije

Mnoge azijske zemlje uspešno razvijaju svoju privredu, pokazuju čvrstinu svojih vizija razvoja i veličinu svojih vojno-političkih ambicija, koje najčešće podrazumevaju borbu za zauzimanje mesta regionalnih lidera. Jasno je da opremanje oružanih snaga savremenim borbenim sistemima, kao i razvoj sopstvene odbrambene industrije zauzima značajno mesto u takvim tendencijama rasta i razvoja.

Azija predstavlja najstarije i tradicionalno jedno od značajnijih tržišta Jugoimport-SDPR J.P.. Prvi izvozni projekat preduzeća ostvaren je 1953. godine sa Burmom (Unija Mijanmar) i obuhvatao je isporuku brdskih topova kal.76 mm, kao i isporuku pešadijskog naoružanja. Ovaj posao je imao i simboličan značaj za osnovne smernice poslovanja Jugoimprt-SDPR. J. P..Top M48 B1 kal. 76 mm je bio prvi projekat samostalnog razvoja artiljerijskih sistema u našoj zemlji. Njegovom isporukom je započela saradnja sa Burmom (Unijom Mjanmar) koja i danas traje. Saradnja je dobila poseban kvalitet sredinom prethodne dekade, kada je za potrebe OS ove zemlje ostvaren izvoz samohodnih top-haubica NORA 155/52 mm, koji predstavlja prvi uspešni primer razvoja i proizvodnje složenih borbenih sistema relizovanim u Jugoimport-SDPR J.P.. U kontekstu odnosa Jugoimport-SDPR J.P., kao državnog preduzeća – eksponenta države na polju prometa sredstava namenjenih odbrani prema svojim partnerima, na primeru ove zemlje se mogu pomenuti reči Ministra odbrane Mijanmara izgovorene prilikom njegove posete sajamskom štandu Jugoimport-SDPR J.P. na izložbi DSA 2008 održanoj u Maleziji – da njegova zemlja nikada neće zaboraviti pomoć koju je u vreme kada joj je ta pomoć bila najpotrebnija dobila od SFRJ.

Poslednjih godina beležimo rast obima poslovanja u Aziji, o čemu svedoči i podatak da vrednost ugovenih poslova u ovom regionu dostiže nekoliko stotina miliona USD. Tokom protekle godine potpisan je novi značajni ugovor sa još jednim tradicionalnim partnerom iz regiona jugoistočne Azije - Bangladešom, u vrednosti od skoro sto miliona USD, čiji je predmet isporuka artiljeriskog sistema Nora .

which was the subject of a number of important undergoing contracts. Complete export of the said combat system include not only export of the artillery weaponts and the ammunition but also export of pertaining subsystems such as the artillery system for fire control and command-information system integrated into the family of command-reconnaissance vehicles, support vehicles, etc. The realization of these contarcts represent a long-term project, enabling firmer alliance with the partner, thus adding up to the establishment of mutual confidence, and opening the possiblities for furter new business deals.

## Asia and Australia Department

Many Asian countries are successful in the development of their own economies, showing their firm visions of the development and the size of their military-political ambitions which most frequently means fighting for the position of regional leadership. It is clear that equipping of the armed forces with contemporary combat systems, same as the development of own defense industries plays an important role in such tendencies of growth and development.

Asia represents the oldest and traditionally one of more important markets for Yugoimport-SDPR. The first export project our company carried out in 1953 with Burma (The Union of Myanmar) included the delivery of mountain gun cal. 76 mm, as well as the delivery of infantry armament. This business deal also had symbolical importance for basic guidelines for Yugoimport-SDPR`s business. The M48 B1 gun, cal. 76 mm was the first project of our own development of artillery systems in our country. The delivery of the said gun marked starting of our cooperation with Burma (The Union of Myanmar) which has lasted until nowadays. The cooperation gained in quality in the middle of the previous decade with export of selfpropelled gun howitzer NORA 155/52 mm for the requirements of the armed forces of the said country. This business deal represents the first successful example of the development and production of complex combat systems realized in Yugoimport-SDPR. In the context of relation of Yugoimport-SDPR as state-owned company, and thus the exponent of the country as far as the sale of the equipment intended for the defense of its respective partner is concerned, allow us to paraphrase the words of the Minister of Defense of Myanmar spoken during his visit to Yugoimport-SDPR`s stand at DSA 2008 exhibition held in Malesia – stating that his country would never forget the aid granted by the Socialist Federal Republic of Yugoslavia (SFRY) at the time of dire need for his country.

We have noted growth of the scope of our business deals in Asia in past several years. This is confirmed by the data that the value of our business deals contracted in this region amounts to several hundred of millions of US Dollars. Only last year we signed an important contract with another traditional partner from the region of South-East Asia – Bagladesh amounting to almosts one hundred million US Dollars. The subject of the said contract was the delivery of Nora artillery system.

# POSLOVNE MISIJE

# BUSINESS MISSIONS

Zahvaljujući šezdesetogodišnjem iskustvu stečenom kroz neprekidno prisustvo na međunarodnom tržištu odbrane i odbrambenih tehnologija, Javno preduzeće Jugoimport-SDPR J.P. je danas dokazan i pouzdan partner. Prepoznavanje trenutnih i dugoročnih zahteva tržišta naoružanja i vojne opreme, kao i integracija tehnoloških i kadrovskih mogućnosti srpske vojne industrije u skladu sa ovim zahtevima, predstavlja deo poslovne strategije Jugoimport-SDPR J.P.. U skladu sa ovom strategijom, slogan Jugoimport-SDPR J.P .glasi:

**Naša vizija…**

**Vaša odbrana…**

**Obostrani izbor…**

Poslovna politika Jugoimport-SDPR J.P. je orijentisana na tri misije:

- Misija integratora nastupa srpskog vojno-industrijskog kompleksa na svetskom tržištu naoružanja i vojne opreme
- Misija vođenja razvoja i organizovanja proizvodnje složenih borbenih sistema u svojstvu Sistem integratora
- Misija opremanja Ministarstva odbrane Republike Srbije složenim borbenim sistemima iz uvoza

Owing to its sixty year long experience gained through its continuous presence on the international defense market, Yugoimport-SDPR represents today a proven and reliable partner.

Recognizing current and long-term requirements of armament and defense equipment market, as well as integration of technological and manpower possibilities of the Serbian defense industry in accordance with these requirements, represents a part of business strategy of Yugoimport-SDPR. In accpordance with this strategy, our slogan is:

**Our Vision…**

**Your Defence…**

**Mutual Choice…**

Yugoimport-SDPR's business policy is oriented towards three missions:

- Integration of the access of the serbian defense-Industrial Complex on the world market of armaments and defense equipment
- Development and production of complex combat systems in the role of the system integrator
- Import of complex combat systems for the needs of Ministry of Defence of Serbia

# UJEDINJENI KROZ IZAZOVE

Glavna poslovna misija Jugoimport-SDPR J.P. je integrisanje preduzeća odbrambene industrije, kao i istraživačko-razvojnih, opitnih i remontnih institucija ministarstva odbrane Republike Srbije u sferi izvoza naoružanja i vojne opreme.Ona obuhvata kompleksne modalitete saradnje kao što su: isporuke vojnih proizvoda, organizacija održavanja, remonta, modernizacije, modifikacije i konverzije raznih kopnenih, vazduhoplovnih i mornaričkih sistema i platformi, zajedničke razvojne i proizvodne programe, transfer tehnologija, projektovanje, izgradnju i opremanje vojne infrastrukture, obuku i edukaciju osoblja itd.

Osnovni marketinški alati za realizaciju ove misije su:

- Nastup na međunarodnim izložbama NVO
- Prezentacije i funkcionalne demonstacije u inostranstvu
- Prezentacije i funkcionalne demonstacije u zemlji
- Propagandni materijal i oglašavanje u inostranim medijima

# UNITED RESPONSE TO CHALLENGES

The main business mission of Yugoimport-SDPR is integration of defence industry companies and research and development, testing and overhauling facilities of the Ministry of Defense of the Republic of Serbia in the sphere of export of armaments and defense equipment. The mission encompasses complex modalities of cooperation between the above mentioned entities incuding deliveries of defense products, organization of maintenance, overhaul, modernization, modification and conversion of different army, airforce and navy systems and platforms, joint development and production programs, transfer of technologies, design, construction and equipping of militay infrastructures, staff training and education, etc.

The basic marketing tools for completion of such complex mission are the following:

- Participation in international exhibitions of armaments and defense equipment (ADE),
- Organization of presentations and functional demonstations of ADE abroad,
- Organization of presentations and functional demonstations of ADE in our country, and
- Preparation of promotonal material and advertising in international media.

# NA MEĐUNARODNIM IZLOŽBAMA

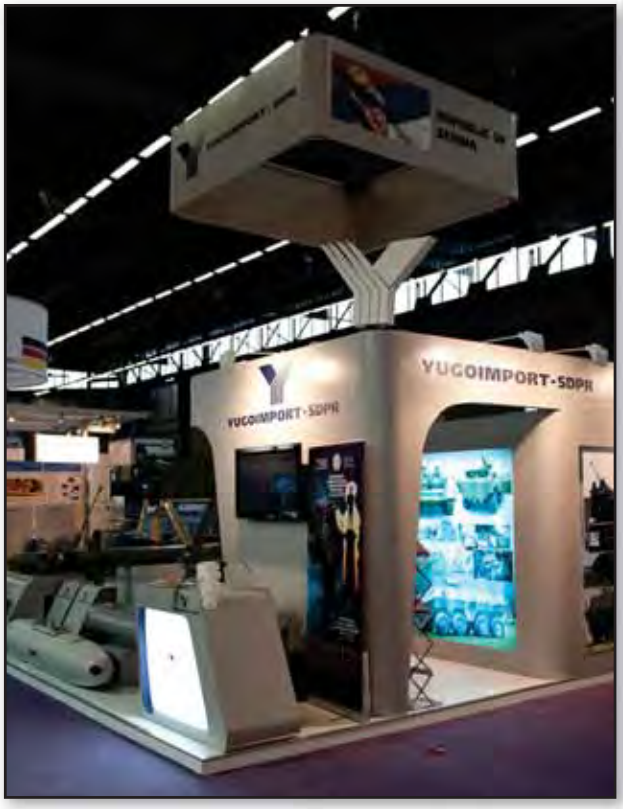
# AT INTERNATIONAL EXHIBITIONS

Najuočljiviji, a samim tim i najotvoreniji vid nastupa na svetskom tržištu jeste učešće na međunarodnim izložbama naoružanja i vojne opreme, odnosno izložbama odbrane, kako se te izložbe danas najčešće u svetu nazivaju. Organizuju se bijenalno u mnogim zemljama, pokrivajući svetsko tržište i okupljajući vrlo širok dijapazon učesnika i posetilaca, uključujući zvanične delegacije oružanih snaga i ministarstava odbrane, komercijalne i strukovne posetioce, kao i predstavnike specijalizovanih medija u oblasti odbrane.

Marketinškom strategijom, kao integralnim delom poslovne strategije Jugoimport-SDPR J.P. obuhvaćena je organizacija učešća na nekoliko izložbi godišnje, sa povremenim varjacijama, uz ravnomerno pokrivanje ciljnih tržišta – kako regiona, tako i konkretnih zemalja.

The most noticeable and thus the most open mode of appearing on the world market is participation in the international exhibitions of armaments and defense equipment, namely in defense exhibitions as these exhibitions are called today throughout the world. They are organized biannually in many countries, covering complete world market, gather wide range of participants and visitors, including official delegations of the armed forces and ministries of defense of different countries, commercial visitors, expert visitors, as well as the representatives of both the media specialized in the field of the defense .

Marketing strategy, as an integral part of business strategy of Yugoimport-SDPR, includes organization and participation at several exhibitions per year. This practice varies from time to time. We pay attention to evenly cover our target markets – of both the regions and particular countries.

Izložba SOFEX je otvorena impozantnom protivterorističkom vežbom na kojoj su pemijerno učestvovali pre nekoliko meseci nabavljeni avioni F-16, uz i ranijih godina ustaljeni asortiman sredstva i taktičkih postupaka jordanskih specijalnih jedinica – helikopteri Blackhawk i Little Bird, avioni C-130, vozila i sl.

The SOFEX exhibition was opened by impressive anti-terrorist excersise in which F-16 aircraft purchased several months earlier took part for the first time, together with the usual assortment of armaments and tactical procedures of Jordanese Special Forces already shown at the exhibition in previous years, such as helicopters Blackhawk and Little Bird, C-130 aircraft, vehicles, etc.




U periodu između juna 2011. i juna 2012 godine Jugoimport-SDPR J.P. je učestvovao na sledećim međunarodnim izložbama odbrane:

- DSEi ( London, Velika Britanija, septembar 2011.god.)
- Defense and Secuirity Asia (Bangkok, Tajland, mart 2012.god.)
- DSA (Kuala Lumpur, Malezija, april 2012.god.)
- SOFEX (Aman, Jordan, maj 2012.god.)
- EUROSATORY (Pariz, Francuska, jun 2012.god.)
- ILA (Berlin, Nemačka, septembar 2012.god.)

Osim globalnog i regionalnog ove izložbe imaju i veoma izražen nacionalni karakter. Način organizacije ukazuje i na veliki značaj koji ove izložbe imaju za vojno-ekonomski i vojno-politički prestiž zemlje organizatora. Broj zvaničnih delegacija MO zemalja iz regiona i broj komercijalnih posetilaca iz regiona nedvosmisleno ukazuje na taj značaj.

Efektnost nastupa se postiže, osim usmerenim prikazom ponude, ulaganjem u dizajn sajamskog prostora, arhitektonska rešenja i multimedijalne sadržaje.

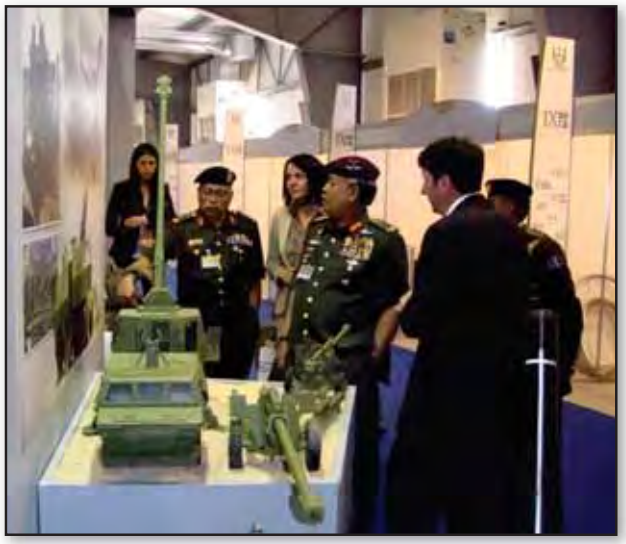
Nastup Jugoimport-SDPR J.P. baziran je na prikazu sistema klasične artiljerije i višecevnim lanserima raketa, avionima Kobac i Lasta 95, naoružanju srednjih helikoptera, sistemima vođenih raketa, minobacačima, borbenim vozilima, pešadijskom naoružanju i opremi i odgovarajućoj

In the period June 2011 – June 2012, Yugoimport-SDPR participated at the following international defence exhibitions, namely:

- DSEi (London, United Kingdom, September 2011),
- Defense and Secuirity Asia (Bangkok, Thailand, March 2012),
- DSA (Kual Lumpur, Malesi, April 2012),
- SOFEX (Aman, Jordan, Maj 2012), and
- EUROSATORY (Paris, France, June 2012).
- ILA (Berlin, Germany, September 2012).

All above mentioned exhibitions, besides global and regional character, also have very prominent national character. The organization of the exhibitions themselves points to substantial importance that the exhibitions have for military-economic and military-political prestige of the countries organizing them. The number of official delegations of the ministers of defense, and the number of commercial visitors from the regions in question undoubtedly point out their respective importance.

The effective participation on the exhibition is achieved by thematical show of the offer, and by investment in renting the most attractive poition of thew stand, architectural solution and arrangement of the stand, and multimedial contents.



municiji - artiljerijskoj, minobacačkoj, srednjih kalibara i pešadijskoj.

Iz godine u godinu, sve je zapaženija integracija našeg preduzeća u globalno «društvo odbrane», odnosno u krug proizvođača i kupaca sredstava NVO i predstavnika odbrambeno industrijskih medija, sa kojima su tokom godina ostvareni brojni bliski poslovni i prijateljski kontakti. Naši vodeći proizvodi, razvojni projekti i tehnologije sve su poznatije i prisutnije u svetskim odbrambeno-industrijskim medijima.

## ILA 2012

Jugoimport-SDPR J.P. je ove godine po drugi put (prvo učešće - maj 2002. godine) učestvovao na međunarodnoj vazduhoplovnoj izložbi ILA 2012.

Ponuda Jugoimport-SDPR J.P. obuhvatila je prikaz vazduhoplova iz aktulenih razvojnih i proizvodnih programa, pre svega aviona LASTA 95 I KOBAC, zatim prikaz modernizovanih aviona G-4 i ORAO (varijanta G-4M i ORAO – dvosed, oba aviona opremljena su savremenim napadno-navigacijskim sistemom (NNS), novom avionikom i sistemima vođenog i nevođenog naoružanja) i bespilotnih letelica VRABAC i PEGAZ iz razvojnih programa VTI.

Prikazan je program modernizacije srednjih helikoptera, koji obuhvata integraciju savremenog NNS i sistema naoružanja, i program remonta vazduhoplova i vazduhoplovnog naoružanja.

Značajno mesto pripalo je sredstvima vođenog i nevođenog naoružanja- vođenih raketa ALAS I LORANA, modula za TV i lasersko vođenje avio bombi i raketa vazduh-zemlja i vazduhoplovnih podvesnih kontejnera sa naoružanjem. Prikazane su mogućnosti saradnje u oblasti usluga istraživačko-razvojnih kapaciteta VTI – eksperimentalnoj

The accent is particularly drawn to the classical artillery systems and multple rocket launchers, Kobac and Lasta aircraft, medium helicopter armament, systems of guded rockets, mortars, combat vehicles, infantry armament and equipment, and corresponding ammunition – artillery, mortar, medium calliber and infantry ammunition.

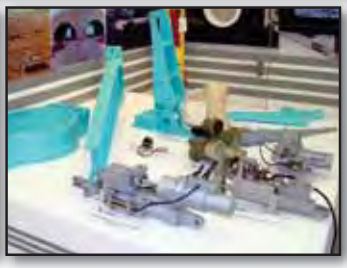
Each year the integration of our company into the global `defence society` is more visible, namely our integration into the circuit of manufacturers and buyers of armaments and defence equipment, as well as the representatives of defense industry media with whom we have established numerous close business and friendly contacts. Our leading products, development projects and technologies are more and more known and present in world defense-industrial media.

## ILA 2012

Yugoimport-SDPR took part at the international air show ILA 2012 this year for the second time (its first participation took place in May 2002).

The offer of Yugoimport-SDPR shown at the said exhibition included the display of airplanes from contemporary development and production programs, first of all LASTA 95 and KOBAC, then modernized G-4 and ORAO (variant G-4M and ORAO – two-seater, both airplanes equipped with contemporary attack-navigation system (ANS), new avionics, as well as guided and non-guided weapon systems), VRABAC and PEGAZ unmanned vehicles from the development program of the Military Technical Institute (MTI).

The program of modernization of medium helicopters encompassing integration of modern ANS and weapon systems, and the programs of aircraft and aircraft weaponry overhaul were also shown at the exhibition.

aerodinamici, kao i kooperaciji u proizvodnji komponenata i podsistema konstrukcije vazduhoplova, elektrohidrauličkih i hidrauličkih komponenti i sistema, stajnih trapova, komponenti i sklopova turbomlaznih motora, transmisije i dr.

Posebnu pažnju posetilaca privukli su model za aerodinamička ispitivanja supersoničnog višenamenskog borbenog aviona četvrte generacije, mini- turbomlazni motor kao i elektrohidraulički servo sistemi proizvedeni u preduzeću PPT – namenska.

Komponente konstrukcija, uključujući i komponente aviona BOEING 737, izraelskog poslovnog turbomlaznog aviona GALAXY , kao i komponente kosmičke rakete - nosača evropskog programa ARIANA, proizvedene u preduzeću UTVA u okviru programa proizvodne kooperacije predstavljaju veliko priznanje i siguran oslonac za budućnost ovog preduzeća i srpske vazduhoplovne industrije.

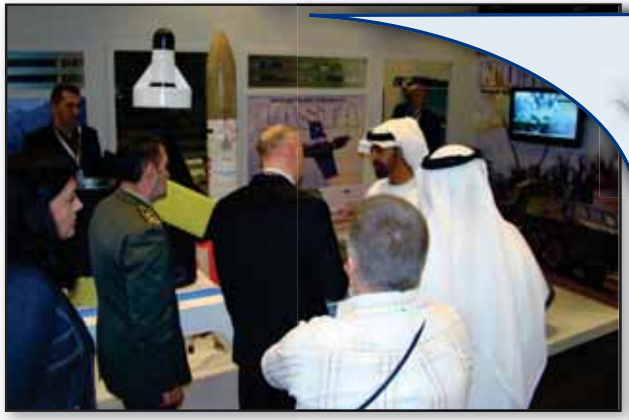
U letačkom programu, osim nacionalnog, revijalno-istorijskog i sportskog dela programa, najjači utisak ostavili su letovi aviona Eurofighter, F-18, MiG-29, vojnotransportnih aviona i helikoptera Tiger.

Important part of the exhibition was dedicated to guided and unguided weapons – ALAS and LORANA guided missiles, modules for TV and laser guidance of aircraft bombs and air-to-air missiles and aircraft pods with armament. The presentation included the possibilities of cooperation in the field of services of MTI research and development capacities in experimental aerodynamics, as well as cooperation in production of airframe component parts and subsystems, electro-hydraulic and hydraulic component parts and systems, landing gears, components and assemblies of turbojet engines, transmission, etc.

Visitors of the show paid special attention to the model for aerodynamic testing of supersonic multipurpose fighter aircraft of the fourth generation, mini turbojet engine, and electro-hydraulic servo systems produced by PPT – Defense factory in Trstenik.

Component parts of the airframe including the components for BOEING 737 aircraft, Israeli GALAXY business turbojet aircraft, as well as the component parts for space rocket – carrier of European ARIANA program which is produced by UTVA as a part of production cooperation, represent an important recognition and sound support for the future of this company and Serbian aircraft industry.

Besides national parade, historical and sport show, the strongest impression was made by the flights of Eurofighter, F-18 and MiG-29 airplanes, military cargo aircraft and Tiger helicopters in the program of aircraft flying parade.




AURORA MOBILECOMFORT

## BATAJNICA 2012

Na aerodromu Batajnica je 2. septembra ove godine održan međunarodni aeromiting u čast obeležavanja stogodišnjice srpskog vojnog vazduhoplovstva. Organizatori su bili Ministarstvo odbrane i Beogradski sajam.

Događaj je propratila izložba vazduhoplovnih tehnologija održana 1. i 2. septembra .

Na izložbi, organizovanoj u okviru novouređenog hangara, nastupio je, osim institucija i ustanova MO (VTI, VTRZ Moma Stanojlovic, Vojna akademija i dr), inostranih partnera (Eurofighter, MBDA, Airbus), kao i izlagača iz zemlje, i Jugoimport-SDPR J.P.

Jugoimport-SDPR J.P. integrisao je nastup preduzeća UTVA iz Pančeva, PPT-namenska iz Trstenika, Teleoptik-Žiroskopa iz Zemuna, Pupin Telekom, Tigar-Pirot, Trajal- Kruševac, SZR Vlajković-Guncati i dr. Preduzeća partneri prikazala su svoje tehnološke mogućnosti i reference, pre svega u proizvodnji komponenata, podsklopova i sklopova.

Jugoimport-SDPR J.P. prikazao je sredstva iz svojih razvojnih i proizvodnih programa, pre svega razvojni model-demonstrator aviona za naprednu obuku i protivpobunjenička dejstva KOBAC, napadno-navigacijske sisteme

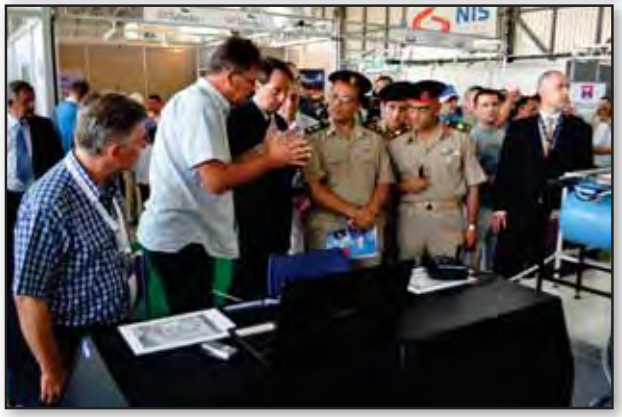
## BATAJNICA 2012

International air show marking one hundred years of Serbian air force was held at Batajnica airport on September 2, 20012. The organizers of the show were the Ministry of Defense of the Republic of Serbia and Belgrade Fair.

The show included an exhibition of aircraft technologies held on September 1 and 2, 2012. Eight institutions and institutes of the Ministry of Defense (Military Technical Institute - MTI, Moma Stanojlovic Military Technical Overhaul Depot, Military Academy, etc.), as well as a number of international companies (Eurofighter, MBDA, Airbus, to name but few), and many exhibitors from our country including Yugoimport-SDPR participated on the exhibition organized in the newly built hangar at Batajnica airport.

Yugoimport-SDPR integrated participation of the following companies: UTVA from Pancevo, PPT – Defense from Trstenik, Teleoptik Gyroscope from Zemun, Pupin Telecom, Tigar from Pirot, Trayal from Krusevac, SZR Vlajkovic from Guncati, and a number of other smaller companies. The above mentioned companies, partners of Yugoimport-SDPR, showed their technological possibilities and references in production of component parts, subassemblies and assemblies for airspace industry.

Yugoimport-SDPR itself presented its own development and production programs, first of all the development model-demonstrator of KOBAC aircraft intended for



u varijantama za integraciju u srednje helikoptere i lake borbene avione, kao i sisteme vazduhoplovnog naoružanja.

Prikazani su kontejneri sa mitraljeskim i topovskim naoružanjem, višecevni lanseri raketa i vođene rakete ALAS i LORANA.

Sredstva koja je Jugoimport-SDPR J.P. prikazao pobudila su veliko interesovanje posetilaca, struktura VS, predstavnika medija kao i brojnih delegacija ministarstava odbrane inostranih partnera - posetilaca izložbe.

Značajan odziv i interesovanje građanstva, posebno dece i mladih ohrabruje i ukazuje da Srbija ima perspektive u razvoju vazduhoplovne tehnike u godinama koje su pred nama.

the advanced training of the pilots and anti-riot combat, advanced navigation systems and its varieties for integration in medium helicopters and light airplanes, as well as the systems of aircraft armaments. The pods armed with machineguns and guns, then multiple rocket launchers and guided missiles ALAS and LORANA were also shown.

The armaments shown by Yugoimport-SDPR arouse great interest of exhibition visitors, members of the Military of Serbia, representatives of media, as well as numerous delegations of foreign ministries of defense who visited the show.

Great response and the interest of ordinary citizens, especially the young and children, encourages our efforts and shows that Serbia has future in the development of aircraft technique in the years to come.

## U SUSRET PARTNERU 2013

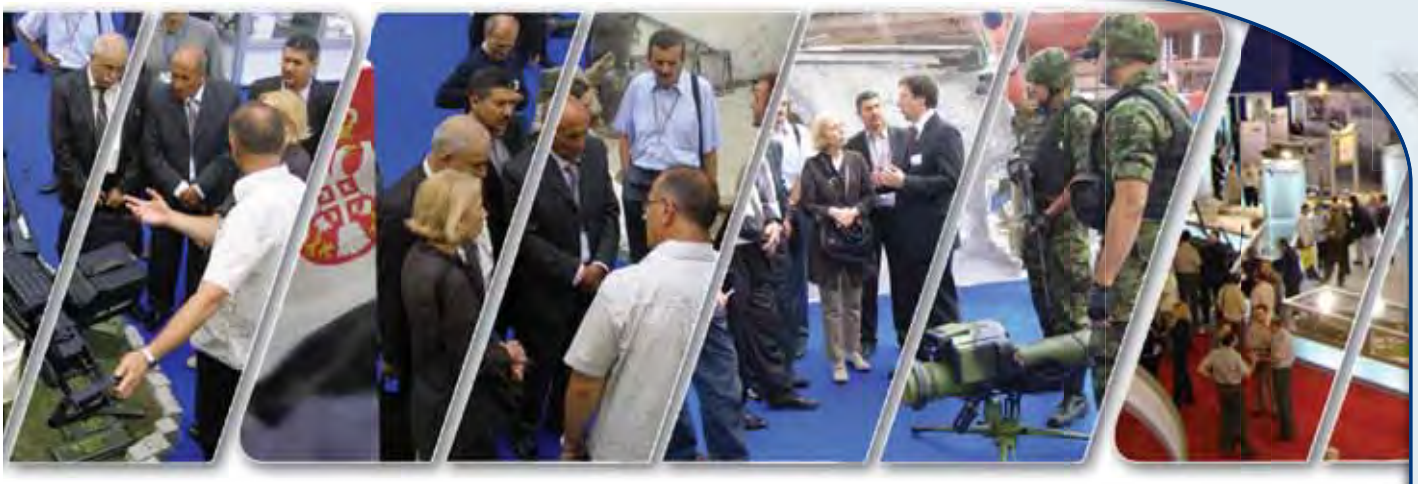
PARTNER 2013
Sajam naoružanja

Tokom 2011. godine započete su pripreme za održavanje šeste po redu međunarodne izložbe naoružanja i vojne opreme PARTNER 2013, čiji smo suorganizatori u saradnji sa Ministarstvom odbrane kao pokroviteljem i Beogradskim sajmom. Jugoimport-SDPR J.P. je počev od 2004. godine, odnosno od samog začetka ideje o uspostavljanju redovne međunarodne izložbe NVO u okviru Beogradskog sajma, dao punu podršku njenoj realizaciji. Cilj je bio da se, korišćenjem značajnih iskustava Jugoimport-SDPR J.P., stečenih tokom nastupa na vodećim izložbama odbrane u inostranstvu, srpska odbrambena industrija prikaže u sklopu savremenog integrisanog nastupa. Kako bi se postigli postavljeni ciljevi, Jugoimport-SDPR J.P. u realizaciju nastupa investira značajna sredstva, uz aktivno uključivanje marketinških resursa. Nastup je koncipiran u vidu prostorne integracije suizlagača na sajamskom prostoru velike površine, primenom savremenih arhitektonskih rešenja i multimedijalnih sadržaja.

## TOWARDS PARTNER 2013

PARTNER 2013
Defence Exhibition

Organizational preparations for hoding of the sixth international exhibition of armaments and defense equipment - PARTNER 2013 have started earlier this year. Yugoimport-SDPR is the co-organizer of this exhibition in cooperation with Belgarade Fair and the Ministry of Defense of the Republic of Serbia who is the patron of the said exhibition. As of 2004 and the very idea of holding of regular international exhibition of armaments and defense equipment (ADE) at Belgrade Fair, Yugoimport-SDPR has given its full support to the realization of such show. The aim was to present Serbian defense industry at such an exhibition in Serbia in modern integrated manner, using valuable experience Yugoimport-SDPR gained in its numerous participations at leading international defense fairs and exhibitions worldwide. In order to fulfil the set aim, Yugoimport-SDPR invested substantial means in the realization of its participation at this exhibition, and used all marketing resources it had at its disposal.



Na izložbi PARTNER 2013, na prostoru arene u hali 1 Beogradskog sajma, analogno konceptu nastupa usvojenom na izložbi PARTNER 2011, biće koncentrisana ponuda svih najznačajnijih proizvodnih i razvojnih programa, ponuda u obasti remonta i modernizacije složenih borbenih sistema i usluga u oblasti istraživanja, razvoja i ispitivanja sredstava naoružanja i vojne opreme. Planirano je i predstavljanje mogućnosti za školovanje odbrambenog kadra i kadra odbrambene industrije, ponuda u oblasti projektovanja, izgradnje, opremanja objekata odbrambene infrastrukture i kompleksna ponuda u oblasti sistema vojno-medicinske zaštite.

Na jedinstvenom sajamskom prostoru, Ministarstvo odbrane integrisaće nastup svojih ustanova, a Jugoimport-SDPR J.P. preduzeća srpske odbrambene industrije i ujedno prikazati svoje razvojne i proizvodne programe složenih borbenih sistema.

PARTNER 2011 posetio je veliki broj zvaničnih delegacija institucija MO i OS iz niza zemalja partnera Jugoimport-SDPR J.P.. Očekuje se da će na PARTNERU 2013 učestvovati veći broj preduzeća iz inostranstva, posebno iz oblasti razvoja i proizvodnje visoko-sofisticirane opreme, sa kojima Jugoimport-SDPR J.P. uspešno sarađuje u opremanju oružanih snaga Republike Srbije i MUP, kao i u oblasti integracije te opreme u složene borbene sisteme iz sopstvenog razvoja i proizvodnje.

The concept of Yugoimport-SDPR`s participation at this exhibition encompasses integration of many co-exibitors at large and spatious fair stand, as well as applying modern architectural solutions for stand arrangements including multimedia contents.

Following the concept applied at PARTNER 2011 held last year, the offer of all major manufacturing and development programs, as well as the offer of overhaul and modernization of complex combat systems and services in research, development and testing of armaments and defense equipment will be displayed in the arena of Hall 1 of Belgrade Fair. The offer of other possibilities of cooperation with the companies and institutes of complete Serbian defense system will also be shown, including the possibility of education of defense personnel and defense industry specialtsts, as well as the possibilities of designing, construing and equipping of defense infrastructural sites, and complex offer in the field of military-medical protection.

The Ministry of Defense (MoD) of the Republic of Serbia will organize joint appearance of its institutes, while Yugoimport-SDPR will organize joint participation of the companies of Serbian defense industry. Yugoimport-SDPR will aslo show its developmenta nd productional possibilities concerning the programs of complex combat systems.

PARTNER 2011 was visited by many official delegati ons of the institutes and istitutions of both the Ministries of Defense and the Armed Forces of numerous countries that are the partners of Yugoimport-SDPR. We expect that many foreign companies will take part in PARTNER 2013, especially those dealing in the development and producti on of highly sophisticated equipment with whom Yugoi mport-SDPR has established cooperation in equipping of both the Military and the forces of the Ministry of Interior Affarirs of the Republic of Serbia.

# PREZENTACIJE I FUNKCIONALNE DEMONSTRACIJE U INOSTRANSTVU

# PRESENTATIONS AND FUNCTIONAL DEMONSTRATIONS CARRIED OUT IN FOREIGN COUNTRIES

Uspešna realizacija integrisanog nastupa Jugoimport-SDPR J.P. i odbrambene industrije Republike Srbije, podrazumeva stalni kontakt sa tradicionalnim, aktuelnim i potencijalnim ino partnerima uključujući direktne kontakte sa predstavnicima krajnjih korisnika iz ministarstava odbrana i oružanih snaga ino-partnera, kao i kontakt ostvaren preko posredničkih firmi.

Jedan od osnovnih vidova ostvarivanja kontakata je realizacija prezentacija predstavnicima korisnika u njihovim zemljama, koje podrazumevaju upućivanje stručnih timova koji obavljaju multimedijalne prikaze ponude.

Realizacija složenih oblika saradnje, kao što su projekti modernizacije ili isporuke složenih sredstva naoružanja i vojne opreme, transferi tehnologija i dr. podrazumevaju i organizaciju funkcionalnih demonstracija (dinamičkih prikaza) složenih sredstava NVO na poligonima zemlje korisnika. To je jedna od najsloženijih marketinških aktivnosti. Takve demonstracije podrazumevaju ispitivanje sredstava iz naše ponude u složenim klimatskim uslovima(pre svega pustinjskim i tropskim).

Jasno je da su prednosti ovakvih specijalizovanih- namenskih prezentacija i funkcionalnih demonstracija u odnosu na druge vidove prezentacija (učešće na međunarodnim izložbama i prezentacije-funkcionalne demonstracije u Srbiji), u tome što se naše mogućnosti mogu prikazati najširem krugu zainteresovanih korisnika, sa kojima se u samom toku aktivnosti mogu rešavati mnoga značajna tehnička pitanja, dobiti informacije o specifičnim potrebama, prilagoditi konkretnim zahtevima i dr. Organizaciju i relizaciju ovakvih poseta Jugoimport-SDPR J.P. obavlja samostalno ili u saradnji sa Ministarstvom odbrane Republike Srbije.

Successful realization of integrated presentation of Yugoimport-SDPR and the defense industry of the Republic of Serbia at foreign markets includes constant contact with traditional, current and potential foreign business partners, including direct contacts with the representatives of the end users from the ministries of defese and the armed forces of our foreign partners, as well as the contacts made through mediation of intermediary agencies.

One of the basic forms of making contact with foreign partners is carrying out of presentations for the potential users in their own countries. This means sending of teams of our experts to carry out multimedia presentations of the goods included in our current offer.

The realization of complex forms of cooperation such as the projects of modernization or the deliveries of complex armaments and defense equipment (ADE), technology transfers etc., includes organization of functional demonstrations (dynamical shows) of complex ADE at the test ranges in the contries of potential users. This is one of the most complex marketing activities. Such demonstrations include testing of of ADE includede in our offer under various and extreme climatic conditions (such as desert or tropical climates, to name but few).

It is obvious that the advantages of such specialized – special-purpose presentations and functional demonstrations compared to other types of presentations (such as participation at international trade fairs, as well as presentations and functional demonstrations carried out in Serbia) lie in showing of our possibilities to the widest possible circle of interested potential users with whom numerous vital technical questions may be disussed and solved during the presentation itself, thus enabling acquiring of valuable information on their specific requirements, and adjusting of our offer to their specific requests. Yugoimport-SDPR carries out the organization and realization of such visits to potential users and buyers either by itself or in cooperation with the Ministry of Defense of the Republic of Serbia.

# PREZENTACIJE I FUNKCIONALNE DEMONSTRACIJE U SRBIJI

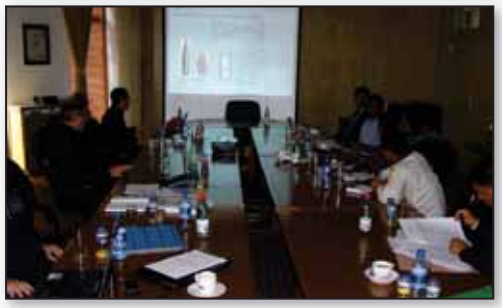
# PRESENTATIONS AND FUNCTIONAL DEMONSTRATIONS IN SERBIA

Osim prezentacija i funkcionalnih demonstracija u zemljama ino-partnera, izuzetno značajan marketinški alat je organizacija prezenacija ino-partnerima u Srbiji.

Prezentacije se obavljaju najčešće u prostorijama Jugoimport-SDPR J.P., stalnoj izložbi NVO u Nikincima, kao i prilikom poseta preduzećima odbrambene industrije, ustanovama MO i jedinicama VS. Osim prezentacija, značajno mesto pripada i organizaciji statičkih i dinamičkih prikaza i funkcionalnih demonstracija sredstava NVO na fabričkim poligonima i poligonima Vojske Srbije.

U organizaciji prikaza i funkcionalnih demonstracija uspostavljen je visok nivo koordinacije i saradnje između Jugoimport-SDPR J.P. i institucija MO - Tehnički opitni centar (TOC), Vojnotehnički institut (VTI), tehnički remontni zavodi, kao i preduzeća srpske odbrambene industrije i jedinice Vojske Srbije.

Prilikom ovih aktivnosti ostvaruje se intenzivan kontakt sa predstavnicima kupaca koji su u mogućnosti da se upoznaju sa konkretnim sredstvom, zahtevaju korekciju nekih primenjenih tehničkih rešenja i karakteristika sredstva u zavisnosti od svojih specifičnih potreba.



Besides presentations and functional demonstrations carried out in the countries of our foreign partners, exceptionally important mareking tool proves to be organization of tailor-made presentations for particular fireign partners in Serbia.

Most frequently those presentatons are carried out in the premises of Yugoimport-SDPR and at the Permanent Exhibition of Armaments and Defense Equipment in Nikinci, as well as in the course of the visits of foreign delegations to the companies of Serbian defense industry, institutes and institutions of Serbian Ministry of Defense and the untis of Serbian Military. Besides presentations, important part in our marketing activites belongs to organization of static and dynamic shows and functional demonstrations of armaments and defense equipment (ADE) both at factory shooting ranges and at the shooting ranges of Serbian Military.

High level of coordination and cooperation has been achieved in organization of the above mentioned shows and functional demonstrations between Yugoimport-SDPR and the institutes and institutions of the Ministry of Defense such as the Army Test Center (ATC), Military Technical Institute (MTI), technical overhaul depots and the companies of Serbian defense industry and the units of Serbian Military.

Those activities create oportunity for intensive contacts with the representatives of potential buyers providing them with the possibility to get acquainted with particular weapons, request correction of certain t applied echnical solutions and characteristics of the weapons in correlation with their particular needs.

# RAME UZ RAME
## Saradnja sa Ruskom Federacijom

Dana 28. novembra 2012. godine, u okviru kompleksa Doma Garde Vojske Srbije na Topčideru u Beogradu, održana je prezentacija složenih borbenih sistema, kao i razvojnih i tehnoloških mogućnosti srpske odbrambene industrije visokoj delegaciji Ruske Federacije, predvođene podpredsednikom Vlade, gospodinom Dmitrij Rogozinom. Poseta je rezultat intenziviranja saradnje Ministarstva odbrane Republike Srbije i Ruske Federacije, započeta posetom naše državne delegacije predvođene potpredsednikom Vlade Republike Srbije i ministrom odbrane Aleksandrom Vučićem, Moskvi 22. avgusta ove godine. Tom prilikom je pokrenuta inicijativa da se razmotre mogućnosti za proširenje rusko-srpske saradnje u oblasti odbrane, sa posebnim akcentom na uspostavlajnju dugoročne saradnje između odbrambenih industrija dve zemlje. U periodu od navedene posete do termina pomenute prezentacije već su identifikovani potencijalni projekti saradnje u oblasti kooperacije u proizvodnji municije, minobacača i oružnih stanica, dok sledi razmatranje mogućnosti za saradnju u oblasti vazduhoplovne industrije i oklopnih borbenih vozila.

Cilj ove posete delegacije Ruske Federacije, prilikom koje su se njeni članovi susreli sa najvišim predstavnicima državnih organa Republike Srbije, na čelu sa predsednikom Republike, gospodinom Tomislavom Nikolićem, bio je da se članovi ruske delegacije, u kojoj su bili i direktori značajnih preduzeća – giganata odbrambene industrije Ruske Federacije upoznaju sa sredstvima i tehnologijama koja, po predlogu srpske strane, predstavljaju osnovu za uspostavljanje dugoročne saradnje dveju odbrambenih industrija.

Program prezentacije podeljen je u tri dela. U prvom, dinamičkom delu prikaza složenih borbenih sistema, gostima

# SHOULDER TO SHOULDER
## Cooperation with the Russian Federation

Presentation of complex combat systems, and development and technological possibilities of Serbian defense industry was carried out for the high delegation of the Russian Federation headed by Mr Dmitri Rogozin, Deputy Prime Minister of Russia in the premises of the Guard Club at Topcider in Belgrade on November 28, 2012. The visit of the Russian delegation resulted from intensified colaboration between the Ministry of Defense of the Republic of Serbia and the Russian Federation which was initiated during the visit of our state delegation headed by Mr Aleksandar Vucic, First Deputy Prime Minister and Minister of Defense of the Republic of Serbia to Moscow on August 22, 2012. The initiative to examine the possibilities for extension of cooperation between Russia and Serbia in the field of defense with particular accent to establishment of long-term cooperation between the defense industries of the two countries was given on that occasion. In the period between the above mentioned visit and the said presentation, the projects for potential colaboration were identified in production of ammunition, mortars and weapon stations, to be followed by considering of the possibilites for cooperation in the field of aircraft industry and production of armoured combat vehicles.

The purpose of the above mentioned visit of the delegation of the Russian Federation on the occasion of which its members met with the highest representatives of state organizations of the Republic of Serbia headed by Mr Tomislav Nikolic, President of the Republic of Serbia, was that the members of Russian delegation consisting of directors of important Russian enterprises – giants of

je izvršena prezentacija sa funkcionalnom (dinamičkom) demonstracijom najznačajnijih složenih borbenih sistema iz razvojnih i proizvodnih programa srpske odbrambene industrije, integrisane i predvođene VTI VS i Jugoimport-SDPR J.P.. U okviru ovog prikaza zvaničnicima Ruske Federacije predstavljeni su projekti iz razvoja VTI VS: multisenzorska inteligentna platforma MIP-11, haubica 122 mm samohodna automatizovana – SORA, lanser raketa samohodni višecevni modularni – MORAVA, kao i iz razvojnih i proizvodnih programa Jugoimport-SDPR J.P.: BOV M11 4x4 familija višenamenskih oklopnih vozila, Lazar 8x8 višenamensko oklopno vozilo otporno na dejstvo mina i zasedna dejstva, samohodna top-haubica "SOKO" 122 mm i familija samohodne top-haubice "NORA-B/52" 155 mm / 52 kal. U drugom, statičkom delu prikaza složenih borbenih sistema, posetioci su se bliže upoznali sa prethodno funkcionalno prikazanim složenim borbenim sistemima, kao i sa nizom sistema iz razvojnih i proizvodnih programa VTI VS i Jugoimport-SDPR J.P. - tenk M-84AB1/program modernizacije, taktička bespilotna letelica, mini bespilotna letelica, avion za obuku LASTA, avion za borbenu obuku i protivpobunjenička dejstva KOBAC, komandno mesto PVO, mobilni komunikacioni centri, besposadne platforme i dr. Treći deo prikaza organizovan je u okviru prostorija Doma garde i bio je posvećen prikazu mogućnosti saradnje u oblasti razvoja i proizvodnje komponenata složenih borbenih sistema i podeljen je na šest celina - vazduholovna industrija; vođene rakete; municija i komponente, uključujući i nevođene rakete; borbena i neborbena vozila; artiljerija, sistemi za upravljanje vatrom artiljerije, oruđa kupolne ugradnje i borbene stanice; oprema vojnika budućnosti.

Sredstva i tehnologije prikazane u sva tri dela programa prezentacije izazvala su značajno interesovanje ruske strane, otvarajući vrata za uspostavljnje dugoročne razvojno-proizvodne kooperacije između dve zemlje.

Russian defense industry get acqainted with the weapons and technologies which, according to the suggestion of the Serbian side, may represent the basis for establishment of long-term cooperation between the defense industries of the two countries.

The program of the presentation was divided in three parts. The first part consisting of dynamic show of complex combat systems served to carry out, for the esteemed guests, presentation with functional (dynamic) demonstration of the most important complex combat system encompassed by the development and production programs of Serbian defense industry, integrated and headed by the Military Technical Institute of Serbian Military and Yugoimport-SDPR. On that occasion the officials of the Russian Federation were introduced with the development programs of the Military Technical Institute of Serbian Military including MIP-11 multisensor intelligent platform, SORA - 122 mm self propelled automated howitzer and MORAVA self propelled multiple rocket launcher, as well as the development and production programs of Yugoimport-SDPR including BOV M11 4x4 family of armored vehicles, LAZAR 8x8 multi-role armored combat vehicle resistant to mines and ambushes, SOKO - 122mm self propelled gun howitzer, and the family of self propelled gun howitzer "NORA-B/52" 155 mm / 52 cal. During the second part of the program – statical presentation of complex combat systems the visitors were acquainted in detail with functionally demonstrated complex combat systems, and with a range of the systems contained in the development and production programs of the Military Technical Institute of Serbian Military and Yugoimport-SDPR including M-84AB1 tank – modernization program, tactical unmanned vehicle, mini unmanned vehicle, LASTA traning aircraft, KOBAC aircraft for combat training and anti-riot missions, AD command post, mobile communication centers, unmanned platforms, etc. The third part of the program was organized in the Guard Club. It was dedicated to the presentation of the possibilities of cooperation in the field of the development and production of the components of complex combat systems. The presentation encompassed six themes, namely: aircraft industry, guided missiles, ammunition and component parts including non-guided rockets, combat and non-combat vehicles, artillery, fire control systems, weapons installed on the turrets and combat stations, and the equipment for the soldier of the future.

Both the weapons and the technologies shown in the three parts of the above mentioned presentation raised substantial interest with the Russian delegation, thus opening the possibilities for establishment of a long-term development and production cooperation between the two countries.

# DRUGI O NAMA

Ponuda Jugoimport-SDPR J.P. kao i realizovani projekti sve više privlače pažnju globalnih medija koji se bave problematikom odbrane - razvojem , proizvodnjom i prometom NVO.

# OTHER MEDIA WROTE ABOUT US

The offer of Yugoimport-SDPR, same as the projects the company has completed recently, draw growing attention of global media dealing in the subject of defense, namely the development, production and sale of armaments and defense products.

# RAZVOJ I ORGANIZACIJA PROIZVODNJE SLOŽENIH BORBENIH SISTEMA

Uvođenjem poslovne misije ''sistem integratora'' – razvoja i proizvodnje složenih borbenih sistema, u poslovnu strategiju Jugoimport-SDPR J.P., obogaćena je ponuda našeg preduzeća i proširena njegova delatnost. Ova misija je usvojena sa namerom da se supstituiše proizvodnja kapitalnih borbenih sistema, za koju su namenski kapaciteti izgubljeni u procesu raspada SFRJ, za potrebe sistema odbrane RS i izvoz.

*Misija je koncipirana po ugledu na vodeće svetske proizvođače složenih sistema NVO, koji funkcionišu po principu ''Sistem integratora''. Verifikovana je:*

• Usvajanjem planova i programa poslovanja u poslednjih 5 godina od strane organa upravljanja preduzeća (u kojima učestvuju predstavnici MO i drugih organa vlade RS)

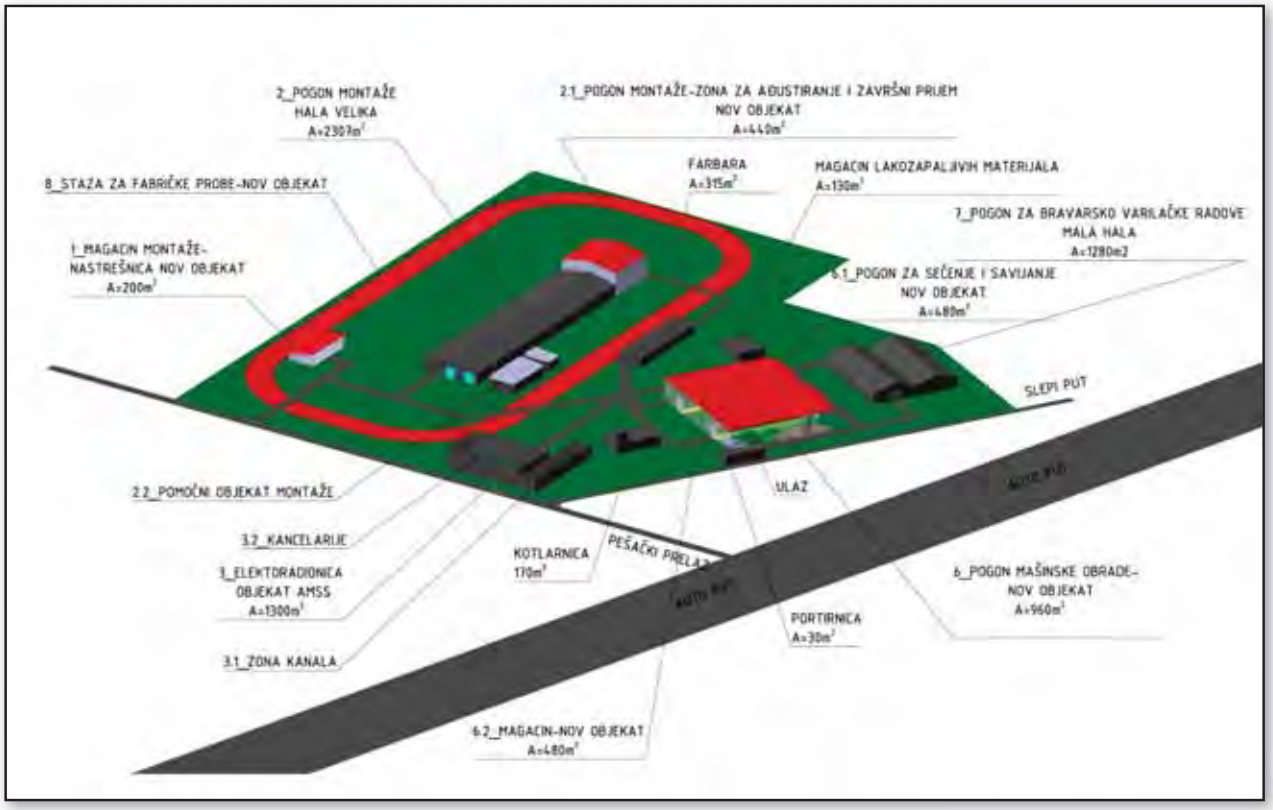
• Usvajanjem startegije ulaganja Jugoimport-SDPR J.P. u razvoj proizvodnih kapaciteta iz oblasti tehnologija koje zahtevaju sistemi NVO, a za koji su potpisani ugovori sa stranim i domaćim kupcima i/ili iz usvojenog programa razvoja

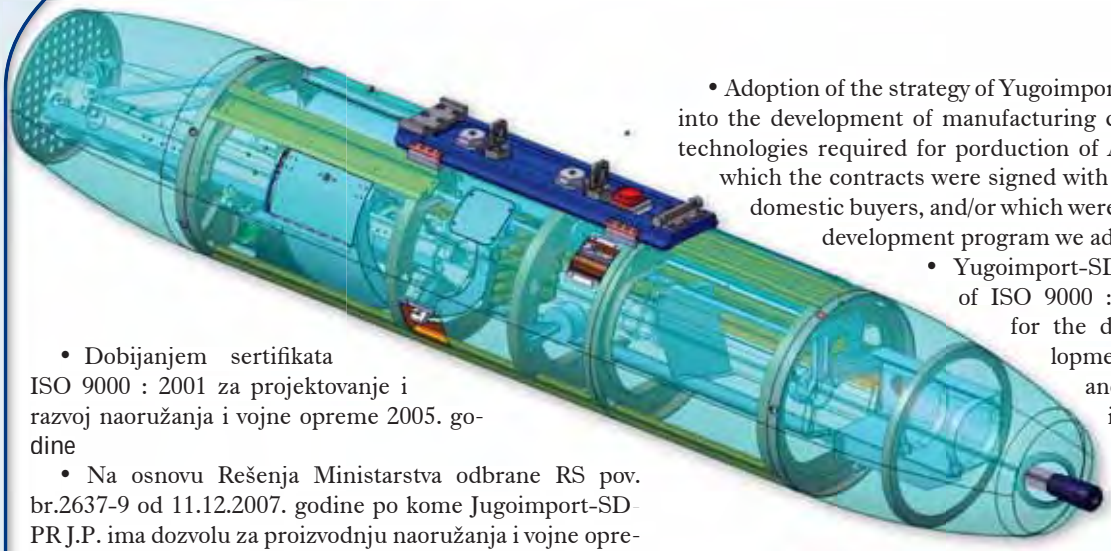
# DEVELOPMENT AND ORGANIZATION OF PRODUCTION OF COMPLEX COMBAT SYSTEMS

Introduction of the mission of the `system integrator` (development and production of complex combat systems) into the business strategy of Yugoimport-SDPR has enriched the offer of our company and enalrged the scope of our activities. The mission was adopted with the intention to substitute the production of capital combat systems the capacities for which were lost in the process of desintegration of the Socialist Federal Republic of Yugoslavia (SFRY), as well as to meet the requirements of both the system of defense of the Republic of Serbia and the export as well.

*The mission was outlined following the model of ledaing world manufacturers of complex systems of armaments and defense equipment which adhere to the principle of `System Integrator`. The mission has been verified by the following:*

• Adoption of plans and business programs by the company`s managing authorities (including the representatives of the Ministry of Defense and other autrories of the government of the Republic of Serbia) in past five years





• Dobijanjem sertifikata ISO 9000 : 2001 za projektovanje i razvoj naoružanja i vojne opreme 2005. godine

• Na osnovu Rešenja Ministarstva odbrane RS pov. br.2637-9 od 11.12.2007. godine po kome Jugoimport-SDPR J.P. ima dozvolu za proizvodnju naoružanja i vojne opreme

*Činioci koji su diktirali globalnu transformaciju vojnoindustrijskih kompleksa i pristupa organizaciji razvoja, proizvodnje i prodaje NVO na svetskom tržištu su:*

• Promena u globalnom vojno-političkom okruženju, promena tipične pretnje i način izvođenja ratnih dejstava i generalno smanjenje vojnih budžeta

• Orijentacija na izvoz kao neminovnost uz sagledavanje zahteva tržišta koji podrazumevaju ekonomičnost, brzinu reakcije i fleksibilnost

• Spajanja kompanija i stvaranje mega kompanija - "sistem integratora" proizvođača NVO za sve vidove oružanih snaga

• Gašenje redudantnih funkcija i dupliranih pogona.

*Postupci pri izboru i realizaciji razvojnih projekata:*

• Istraživanje tržišta, praćenje svetskih trendova razvoja, proizvodnje i proliferacije složenih borbenih sistema na osnovu praćenja stručnih publikacija, međunarodnih izložbi NVO.

• Praćenje trendova opremanja i potreba kupaca na osnovu dostupnih publikacija i drugih izvora, posredstvom direktne komunikacije sa predstavnicima kupaca, na čijem tržištu je Jugoimport-SDPR J.P. prisutan, čime se u počet-

• Adoption of the strategy of Yugoimport-SDPR to invest into the development of manufacturing capacities for the technologies required for porduction of ADE systems for which the contracts were signed with both foreign and domestic buyers, and/or which were contained in the development program we adopted ourselves;

• Yugoimport-SDPR`s obtaining of ISO 9000 : 2001 certificate for the design and development of armaments and defense equipment in 2005; and

• The decision of the Ministry of Defense of the Republic of Serbia Confidential No. 2637-9 of December 11, 2007, granting permision to Yugoimport-SDPR to produce armaments and defense equipment.

*The factors which dictated global transformation of defense industry complexes and the approach towards organizing of the development, production and sale of ADE on the world market are the following:*

• Change of global military and political environment, as well as change of typical threats and the mode of carrying out of war actions, and general decrease of defense budgets;

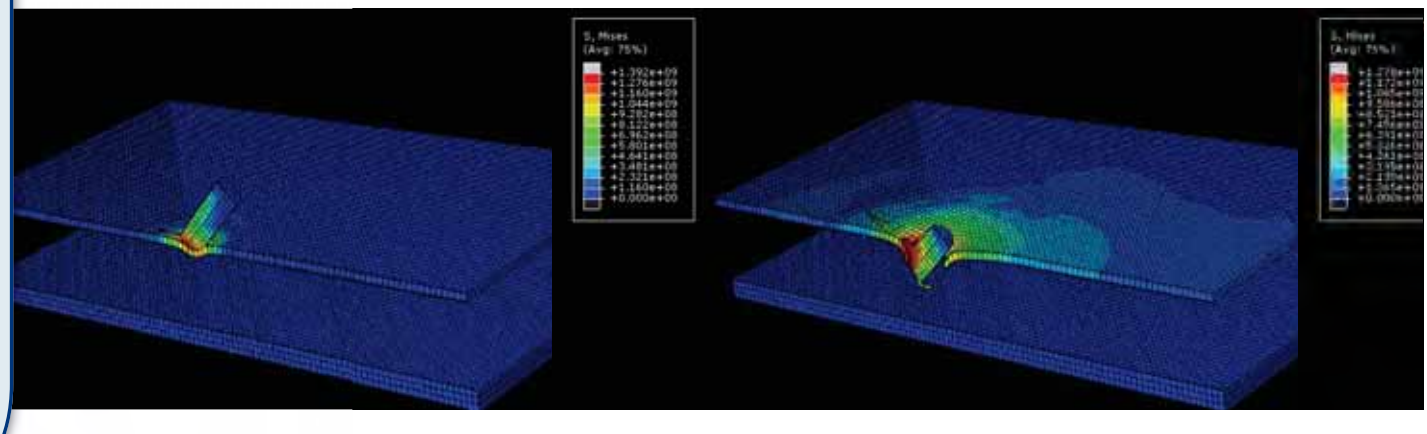
• Orientation towards export as unavoidable action recognizing the requests of contemporary market which include economy, speed of reaction and flexibility

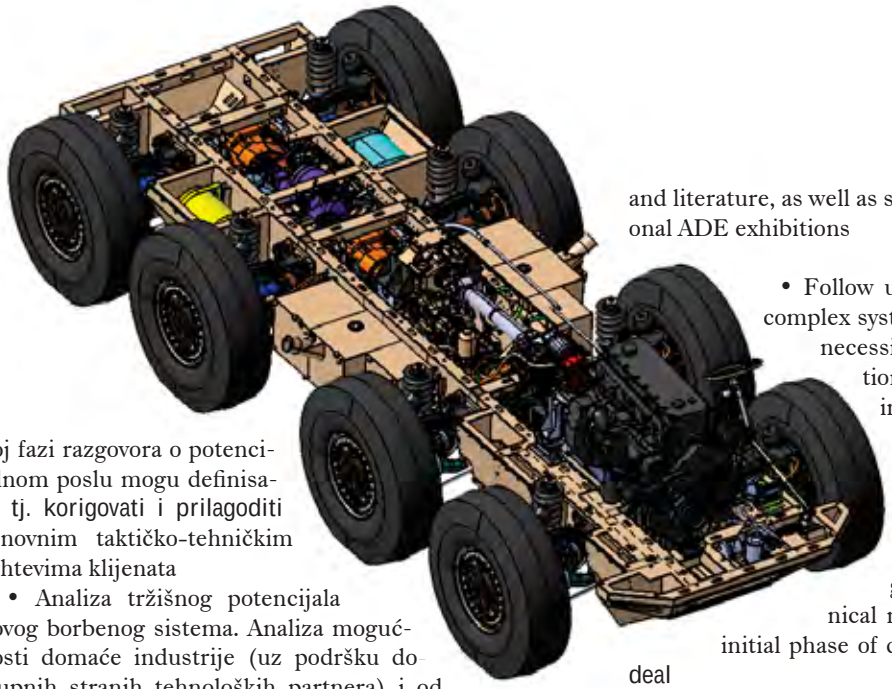
• Merging of the companies and creating of mega companies – the so called `system integrators` of ADE manufacturers for all services of the armed forces

• Closing down of redundant functions and duplicated plants

*The procedures in selection and realization of development projects encompass the following:*

• Market research and follow up of world trends of development, production and proliferation of complex combat systems on the basis of constant reading of trade journals





noj fazi razgovora o potencijalnom poslu mogu definisati, tj. korigovati i prilagoditi osnovnim taktičko-tehničkim zahtevima klijenata

• Analiza tržišnog potencijala novog borbenog sistema. Analiza mogućnosti domaće industrije (uz podršku dostupnih stranih tehnoloških partnera) i odgovarajućih resursa - ljudskih, materijalnih, vremenskih i tehnoloških, za realizaciju projekta. Atraktivnost proizvoda za potrebe Vojske Srbije

• Finansiranje iz sopstvenih izvora početne faze razvoja, do nivoa tehnološkog demonstratora ili prototipa, posle čega sledi, u zavisnosti od reakcije tržišta, odnosno konkretnog kupca, finansiranje nastavka razvoja do ulaženja u proizvodnju (ili zaključno sa ulaskom u serijsku proizvodnju) iz sopstvenih sredstava, ili iz sredstava kupca obezbeđenih ugovorom potpisanim po prezentovanju prototipa

## Ostvareni rezultati i aktuelni plan razvoja složenih borbenih sistema u Jugoimport-SDPR J.P.

U periodu od 2002 godine do danas otvoreno više od sto razvojnih zadataka, od čega je u serijsku proizvodnju uvedena približno polovina sredstava,dok je ostatak u različitim fazama razvoja .

Godišnjim planom razvoja za 2012. godinu planirana je realizacija ukupno 43 razvojna zadataka.

and literature, as well as studying of the trends at international ADE exhibitions

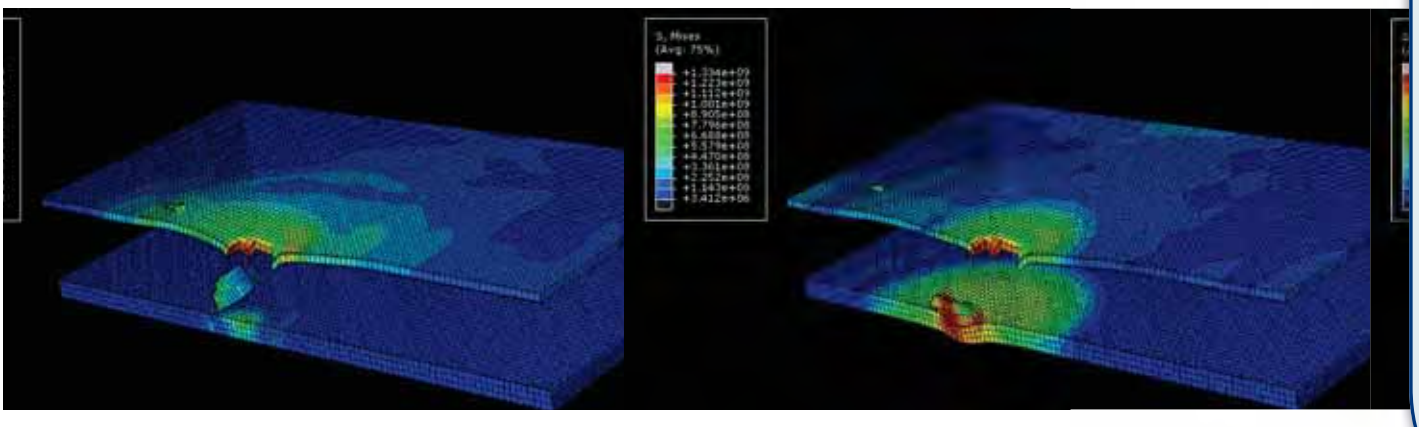
• Follow up of the trends of equipping of complex systems, and meeting of the buyers` necessities based on available publications and other sources gathered in direct communication with the representatives of the buyers on whose market Yugoimport-SDPR is present, thus enabling the defining, namely correction and adjustment of the offer in the light of the basic tactical and technical requirements of the client in the initial phase of discussions on potential business deal

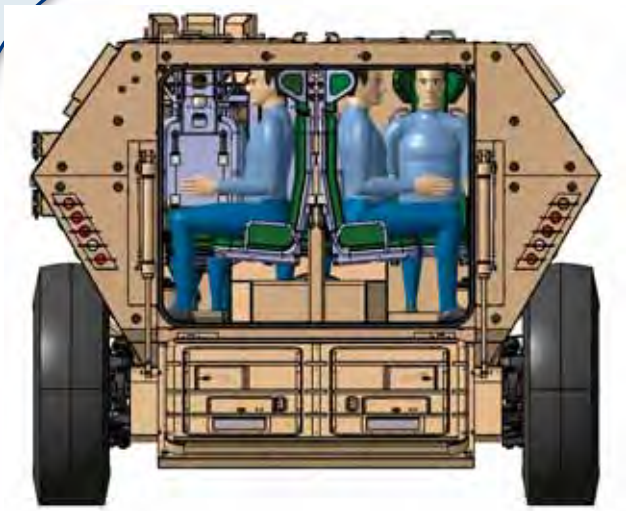
• Analysis of market potential of new combat system, as well as analysis of the possibilities of our industry (having in mind the support of available foreign technological partners) and the appropriate resources – both human, material, time and technological resources required for realization of the project. Analysis of the attraction of the product in question for the requirements of the Military of Serbia

• Using our own sources to finance of the initial phase of development of complex systems up to the level of technological demonstrator or producing a prototype, which is then followed by financing of continuation of further development up to the level of entering into the production (namely commencement of serial production) either out of our own sources or with the buyer`s funds provided by a contract signed after the presentation of a prototype system to the buyer

## Achieved Results and Current Plan for Development of Complex Combat Systems in Yugoimport-SDPR

In the last ten years more than hundred development projects has been opened. Aproximately fifty percent entered in the full rate serial production and the remain projects are in the different development phases.





## Resursi za realizaciju prozvodne strategije Jugoimport-SDPR J.P.

*Interni proizvodni resursi Jugoimport-SDPR J.P.*

• Sektor za proizvodnju sa značajnim iskustvom i referencama u rukovođenju velikim preduzećima i poslovnim sistemima

• Sopstveni proizvodni pogoni

• Finansijski i menadžerski potencijal za realizaciju projekata proizvodnje

*Eksterni proizvodni resursi – resursi naših tehnoloških partnera*

• Preduzeća odbrambene industrije i druge proizvodne organizacije iz RS

• Strani tehnološki partneri angažovani u projektima zajedničke proizvodnje ili kao isporučioci visokosofisticiranih podsistema i komponenti

## Proizvodnja po modelu „Sistem Integratora“

• Osvajanje serijske prozvodnje (organizacija i finansiranje)

• Proizvodni menadžment (ugovaranje i organizacija proizvodnje komponenata)

• Finalna montaža

• Ispitivanje

• Predaja proizvoda korisniku

• Podrška tokom uvođenja u upotrebu i ekspolataciji

## Osnovni principi organizovanja proizvodnje

• Kroz konkretne projekte i ugovore, razne oblike zajedničkog finansiranja i ulaganja u nove tehnološke linije, maksimalno ojačati i tehnološki unaprediti perspektivni deo nacionalne industrijske baze koji ima potencijal da se uključi u proizvodnju složenih borbenih sistema, posebno u obla-

The 2012 annual development plan has provided for the realization of the total of 43 development tasks.

## Resources for Realization of Production Strategy of Yugoimport-SDPR

Internal production resources of Yugoimport-SDPR include the following:

• Department for production staffed with manpower with substantial experience and references in managing major companies and business systems

• Own production plants

• Financial and managerial potential necessary for realization of production projects.

*External production resources, namely the resources of the technological partners of Yugoimport-SDPR include the following:*

• Defense industry and other production companies of the Republic of Serbia

• International technological partners engaged either on the projects of joint production or as the suppliers of highly sophisticated subsystems and components

## Production Following the `System Integrator` Model

Organizing of production following the model of `System Integrator` icludes the following:

• Mastering of serial production (organization and financing of the same)

• Management of production (contracting and organization of component part production)

• Final assembly

• Testing

• Delivery of the product to the end user, and

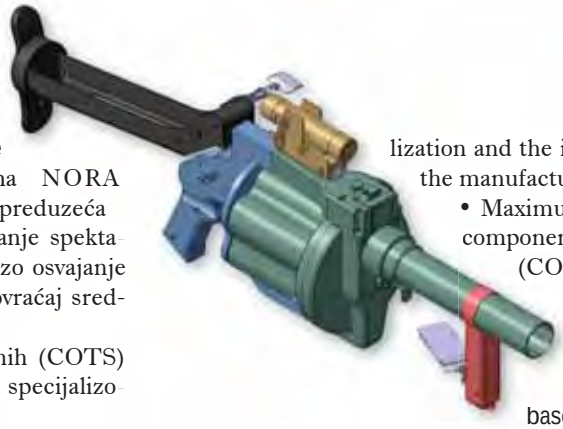
• Support in the course of product start-up period and during exploitation of the same

## Basic Principles of Organizing of Production

Basic principles of organizing of production complex combat systems include the following:

• Maximum strengthening and technological improving of prospective part of our national industrial basis which has the potential to be included into the production of complex combat systems, especially as far as mechanical and electrical engineering, electronics and optoelectronics are concerned, by realization of particular projects and contracts, different types of joint finance and investment in new technological lines. For exhample, projects of production of NORA system engaged more than 30, and LASTA more than 15 different companies

• Productional orientation towards technologically less spectacular projects characterized by relatively fast mastering of production, and therefore quicker commercial rea-



stima mašinske,elektronske i optoelektronske industrije. Primeri: Projekti proizvodnje sistema NORA – angažovano preko 30, i Lasta 95 - više od 15 preduzeća

• Proizvodna orijentacija na tehnološki manje spektakularne projekte, koje karakteriše relativno brzo osvajanje proizvodnje, te i komercijalna realizacija i povraćaj sredstava za proizvođača

• Maksimalno moguće iskorišćavanje civilnih (COTS) komponenti i tehnologija, tj. preorijentacija sa specijalizovane na širu tehnološku bazu

• Upošljavanje većeg broja malih i srednjih preduzeća, koje karakteriše proizvodna efikasnost i fleksibilnost (brzo osvajanje proizvodnje određeneih komponenata na osnovu raspoloživih tehnologija) i njihova integracija u sistem kvaliteta

*Sistem standardizacije kvaliteta kooperanata u proizvodnji za potrebe JI-SDPR J.P.*

Preduzeća odbrambene industrije Srbije poseduju odgovarajuće sertifikate (Vojna kontrola kvaliteta)

U slučajevima kada isporučioci ne poseduju odgovarajuće sertifikate pre potpisivanja ugovora moraju ih pribaviti. Za proces sertifikacije Jugoimport-SDPR J.P. angažuje sopstveni kadar ili stručne specijalizovane institucije.

Proces sertifikacije obuhvata:

• Probnu izradu
• Predkvalifikacionu analizu
• Osvajanje proizvodnje
• Serijsku izradu

## Dosadašnji realizovani proizvodni projekti:

• NORA B-52 K0 i KE

• Baterijski setovi SUV (artiljerijski elektronski goniometar, balistički računar,displej komandira, sistem za rektifikaciju oruđa, komunikaciona oprema-u prenosnoj i konfiguraciji za vozilo )

• Artiljerijska logistička vozila sa sitemima za mehanizovano punjenje

• Modernizacija haubica M56 105 mm i isporuka modernizacionih setova i modernizacija haubica M101 105 mm

• Minobacači 120 mm M 74

• Proizvodnja lične zaštitne opreme -balističkih ploča i prsluka

• Proizvodnja aviona Lasta-95 - zajednički poduhvat UTVA i Jugoimport-SDPR J.P.

• Proizvodnja brodskog topa 20 mm sa integrisanim sistemom za upravljanje vatrom

• Organizacija proizvodnje modernizacionog seta za helikoptere (napadno-navigacijski sistem, bočni mitraljez sa SUV, vođeno i nevođeno naoružanje na bočnim nosačima-kontejneri sa mitraljezima i topovima, lanseri nevođenih raketa i sistem POVR srednjeg dometa)

• Oklopno izviđačka i komandna vozila BOV M10/11

lization and the increase of assets for the manufacturer

• Maximum utilization of civil components and technologies (COTS), i.e. reorganization of production from specialized towards more general technological base

• Engagement of a number of smaller and medium companies which are productionally more efficient and highly flexible (quicker mastering of production of certain component parts on the basis of available technologies), and integration of the same into the system of quality control.

*The System of Standardization of the Quality of Production of the Subcontractors for the Requirements of Yugoimport-SDPR*

The companies of the defense industry of Serbia posess appropriate certificates (Military quality control).

In case the suppliers do not posess appropriate quality control certificates, they must obtain the same before entering the contract with Yugoimport-SDPR. Yugoimport-SDPR engages either own experts or specialized institutions for the process of certification.

The process of certification includes the following:

• Trial manufacture
• Pre-qualification analysis
• Mastering of production
• Serial manufacture

## Completed Production Projects

• NORA B-52 K0 and KE

• FCS Battery Sets(artillery electronic goniometer, balistic computer, gun display unit,gun rectification system, communication equipment-in portable and vehicle mounted configuration)

• Logistic vehicles-artillery ammunition supply vehicles with ammunition module handling system

• Modernization of howitzers M56 105 mm and delivery of modernized sets, as well as modernization of howitzers M101 105 mm

• Mortars 120 mm M 74

• Production of personal balistic protection-balistic plates and vests

• Production of aircraft Lasta-95 – joint venture of UTVA and Yugoimport-SDPR

• Production of navy gun 20 mm with integrated fire control system

• Organization of the production of helicopter modernization set(attack-navigation system, side door mounted HMG with FCS and guided and non guided pilon mounted weapons-containers with guns, rockets and medium range ATGW)

• Armoured reconnaissance and command vehicles BOV M10/11

## Lazar 8x8 višenamensko oklopno vozilo otporno na dejstvo mina i zasedna dejstva

Vozilo je svojim tehničkim rešenjima posebno prilagođeno jednicama savremene pešadije i specijalnim jedinicama vojske i policije angažovanim u izvršavanju protivterorističkih i protivgerilskih operacija i operacija očuvanja mira, sa naročitim akcentom na dejstva u urbanim sredinama i ispresecanom zemljištu, u kojima protivnik primenjuje zasedna dejstva i improvizovane eksplozivne naprave, zbog čega je ostvaren vrlo visoko nivo zaštite. Balistička zaštita se sastoji od višeslojnog osnovnog čeličnog oklopa i dodatnog kompozitnog koji štiti sa prednje strane do nivoa V (top 30 mm), a sa ostalih strana do nivoa IV(Mitraljez 14,5mm) i protivminske zaštite (nivoa 3B) koja štiti posadu od dejstva eksplozivnih naprava koje sadrže do 8 kg eksploziva TNT. Naoružano je kupolom sa dnevno noćnim SUV-om , topom 20 mm i mitraljezom 7,62 mm ,a posada(koju čine 3+10 članova) ima mogućnost efikasnog dejstva svojim streljačkim naoružanjem iz vozila uz izuzetnu preglednost okoline kroz pancirna stakla.

## Lazar 8x8 Multi-role Armored Combat Vehicle Resistant to Mines and Ambushes

The applied technical solutions make this vehicle particularly adapted to the requirements of conteporary infantry and special units of both military and police engaged in carrying out of anti-terrorist and anti-guerilla operations and peace keeping operations, with special accent on the actions in urban battlefield or on intersected land when the enemy applies ambushes and improvised explosive devices, which require providing of high level of protection of the vehicle crew. Ballistic protection of the vehicle consists of mult-layer basic steel armor and additional composite armor up to level V (30 mm gun) from the front and level IV (machine gun 14.5 mm) from the sides and back, and anti-mine protection (level 3B) which provides for protection of the crew inside the vehicle against explosive devices containing 8 kg of TNT explosive.

The vehicle is armed with a turret with day and night fire control szstem (FCS), 20 mm gun, and 7.52 mm machine gun, and enables high efficiencz of the crew (composed of 3 + 10 members) in action using small arms from the vehicle

U vozilo je integrisan savremen komandno informacioni i komunikacioni sistem koji omogućava komunikaciju sa višim nivoima komandovanja ali i sa svakim iskrcanim vojnikom preko personalnog radija.

Lazara odlikuje modularni dizajn koji omogućava ugradnju različitih oružja, senzora i komunikacijskih sistema, što predstavlja osnovu za razvoj familije vozila– oklopni transporter, komandno vozilo, ambulantno vozilo, vozilo namenjeno logističkoj podršci (kargo vozilo), vozilo inženjerijsko/tegljač, protivminsko vozilo, vozilo nosač artiljerijskih oruđa 120 /122 /155 mm, hibridnog artiljerijsko-raketni sistem PVO, i drugo.

Obzirom da je koncept vozila baziran na upotrebi šasije i drugih komponenata standardnih terenskih kamiona odlikuju ga relativno jednostavna i brza proizvodnja kao i niska proizvodna cena što ga čini pristupačnim širokom krugu potencijalnih kupaca.

with exceptional surveyability of the environment through armored glass.

Modern command information system is integrated in the vehicle, as well as communication system enabling communication not only with higher levels of command but also with each disembarked soldier via personal radio unit.

Lazar has modular design which provides for installation of different weapons, sensors and communication systems, thus representing the basis for the development of a family of vehicles – armor carrier, command vehicle, ambulance, logistic support vehicle (cargo vehicle), engineery / tractor, anti-mine vehicle, carrier of artillery weapons cal. 120 /122 /155 mm, or hybrod artillery-AD missile system, etc.

As the concept of Lazar vehicle is based on the chassis and other componets of standard cross-country trucks, the production of the vehicle is relatiely simple and fast, and the production price is low which makes it popular with the wide range of potential buyers.

## Lazar 2 8x8 višenamensko oklopno vozilo

Višenamensko oklopno vozilo LAZAR 2 8x8 zasnva se na modifikacijama koncepta i tehničkih rešenja primenjenih na funkcionalnom modelu vozila LAZAR. Modifikacije su izvršene sa ciljem daljeg usklađivanja osnovnih karakteristika vozila sa aktuelnim svetskim trendovima u razvoju familija višenamenskih oklopnih vozila točkaša

Koncept vozila LAZAR 2 predstvalja kombinaciju koncepata klase MRAP (Mine Ressistant Ambush Protected vehicle) i vozila klase MRAV (Multi-Purpose Armored Vehicle), s tim što se više pomera ka konceptu MRAV, pre svega zbog uvođenja koncepta nezavisnog oslanjanja.

Koncept vozila omogućava ugradnju različitih vrsta turela, kupola i oružnih stanica, u zavisnosti od osnovne namene vozila.

## Lazar 2 8x8 Multi-role Armored Vehicle

Multi role armored vehicle LAZAR 2 8x8 is based on modifications of the above mentioned concept and the technical solutions implemented on the functional model of LAZAR vehicle. These modifications are carried out with the purpose to further harmonize the basic characteristics of the vehicle with contemporary world trends in development of families of multi-role armored wheel-type vehicles.

The concept of LAZAR 2 represents a combination of the concept of vehicles class MRAP (Mine Resistant Ambush Protected vehicle) and MRAV (Multi-Purpose Armored Vehicle), but it is closer to the MRAV concept first of all because of introduction of independent suspension.

This concept provides for installation of different types of gun mounts, turrets and weapon compartments depending on the basic purpose of the vehicle.

## BOV M11 4x4 familija višenamenskih oklopnih vozila

BOV M11 4x4 predstavlja višenamensko komandno/izviđačko/patrolno oklopno borbeno vozilo, čiji koncept omogućava ugradnju različite opreme. koja omogućava njegovu primenu u različitim vidovima oružanih snaga. Vozilo karakteriše visoka taktička i operativna pokretljivost, modularni koncept oklopne zaštite do nivoa III sa prednje i II sa svih strana po STANAG 4569, protivminska zaštita, snažan motor od 190 KS i daljinski upravljana borbena stanica naoružana teškim mitraljezom kalibra 12.7 mm. Vozilo svojom raznovršnošću pokriva brojne scenarije taktičkih sukoba niskog i visokog intenziteta, uključujući i primenu u mirovnim operacijama.

## Family of multi-role combat armored vehicles BOV M11 4x4

The concept of BOV M11 4x4 multi-role command / reconnaissance / patrol armored combat vehicle provides for installation of different types of equipment which enables the use of the vehicle in various services of armed forces. The main characteristics of this vehicle are its high tactical and operative mobility, modular concept of armor protection up to level II from the front and level I II from the sides and back of STANAG 4569 standard for anti-mine protection, powerful engine of 190 HP, and remotely controlled combat station armored with 12.7 mm heavy machine gun. The diversity of this vehicle covers numerous scenarios of low and high intensity tactical conflicts; therefore it is suitable for application in peace keeping operations.

## Panoramska optoelektronska multisenzorska stanica za osmatranje i izviđanje

Panoramska optoelektronska multisenzorska stanica za osmatranje i izviđanje (PSOMOS) je multisenzorski optoelektrosnki sistem projektovan za korišćenje na izviđačkom vozilu, ili komandnom oklopnom borbenom vozilu, ili komandnom tenku. Njena osnovna namena je izviđanje bojišta i osmatranje tokom dana, noći i u lošim vremenskim uslovima sa dometima do 20 km.

Kada Psomos nađe cilj na zemlji, operater brzo podesi objektiv na odgovarajući položaj radi prepoznavanja ili identifikacije cilja. U tom trenutku, operater meri razdaljinu od cilja koristeći laserski daljinomer. Takođe, koordinate napadnog ugla automatski obezbeđuju senzori instalirani na PSOMOS. Na osnovu tih informacija, u potpunosti se određuje pozicija cilja. Slika osmatranog prostora oko cilja i izmereni podaci se prikazuju na komandnom računaru.

## Panoramic surveillance and observation multisensor optoelectronics station

Panoramic Surveillance and Observation Multisensor Optoelectronics Station (PSOMOS) is multi-sensor optoelectronics system designed for use on the reconnaissance vehicle or on command armour combat vehicle or command tank. Its basic purpose is battlefield observation and surveillance during day, night and in adverse weather conditions with ranges up to 20 km .

When a ground target is detected by the PSOMOS, operator quickly turns preferable zoom in order to recognize or identify that target. At that moment, operator measures the range to the target using laser range finder. Also, the target angle coordinates are automatically provided by the sensors installed in the PSOMOS. Based on this information, the target position is completely determined. The image of the observed area around the target and the measured data are displayed on the control computer.

## Daljinski upravljana oružna stanica 12.7 mm

Omogućuje dnevno i noćno osmatranje terena; akviziciju ciljeva uz automatsko navođenje poslužioca; nišanjenje mitraljezom (po pravcu i visini), i gađanje iz stacionarnog položaja i u pokretu u „dvostrukom režimu rada“; nišanjenje daljinski upravljanim teškim mitraljezom kalibra 12,7 mm (po pravcu ivisini) i pucanje po ciljevima na zemlji i u vazduhu sa zatvorenim poklopcem komandira.

Daljinski upravljana oružna stanica dramatično povećava ukupnu vatrenu moć sredstva, situacionu svesnost i sposobnost preživljavanja posade.

Po ciljevima je moguće dejstvovati brzom i preciznom vatrom iz mitraljeza zahvaljujući naprednom integrisanom komandnom računaru komandira sa automatskom obradom slike i generisanjem krsta končanice nišana.

## Remote controlled weapon station 12.7 mm

Provides for day/night terrain observation; target acquisition (gunner directing); main gun and coaxial machine-gun laying (in traverse and elevation), loading (main gun) and firing from standstill and on the move in “Double mode”; remotely controlled 12.7 HMG laying (in traverse and elevation) and firing at ground and aerial targets with commander’s hatch closed

Integrated controlled weapon station (RCWS) dramatically increases total MBT firepower, situation awareness and crew survivability.

Targets can be engaged with fast and accurate machine gun fire due to advanced integrated commander`s control computer with automatic video processing and reticule generation.

## M10 daljinski upravljana oružna stanica 20 mm

Daljinski upravljana oružna stanica M10 naoružana topom 20 mm namenjena je za ugradnju u oklopne transportere / borbena vozila pešadije točkaše i guseničare, izviđačko-borbena vozila, kao i laka plovila.

Osnovno oružje sistema, zasniva se na proverenom topu 20mm, spregnutom mitraljezu 7,62 x 54 mm M86 GPMG i 2x2 bacača dimih kutija 82 mm . Oružna stanica poseduje modernu multi-senzorsku stanicu i balistički kompjuter sa displejem operatora.

## M12 daljinski upravljana oružna stanica 30 mm

Daljinski upravljana oružna stanica M12 naoružana topom 30 mm namenjena je za ugradnju u oklopne transportere / borbena vozila pešadije točkaše i guseničare, izviđačko-borbena vozila, kao i laka plovila.

Stanica je namenjena za ugradnju na postojeće platforme, u okviru programa modernizacije ili konverzije, odnosno za ugradnju u nova borbena vozila. Stanica je koncipirana tako da ugradnjom u borbena vozila ne narušava unutrašnji prostor, spremišta za municiju su takođe sa spoljne strane, što sve ukupno doprinosi povećanoj žilavosti i borbenoj fleksibilnosti i univerzalnosti upotrebe borbenih vozila.

Pokretanje oruđa po pravcu i elevaciji ostvaruje se električnim putem, a osnovno naoružanje čine automatski top M87/12 30x210mm / 30x173mm, koaksijalni puškomitraljez M86 7,62x54 mm, dvostruki lanser protivoklopnih vođenih raketa dometa 3000 m, kao i bacač dimnih kutija kalibra 82mm. Sistem za upravljanje vatrom sadrži multisenzorsku stanicu sa CCD kamerom, termičkom kamerom, laserskim daljinomerom, balistički kompjuter sa displejem operatora, kao i uređaj za vođenje PO raketa.

## Remotely controlled weapon station M10 20 mm

The M10 remotely controlled weapon station armored with 30 mm gun is intended for installation in armored personnel carriers / infantry carrier vehicles both wheel and track type, reconnaissance combat vehicles, and light navy vessels.

The basic armament of the station includes automatic gun 20mm, coaxial light machine gun M86 7.62x54 mm, and 2x2 82 mm smoke pot launchers. Fire control system includes multi-sensor station with CCD and thermal image cameras, laser range finder, ballistic computer with operator`s display.

## Remotely controlled weapon station M12 30 mm

The M12 remotely controlled weapon station armored with 30 mm gun is intended for installation in armored personnel carriers / infantry carrier vehicles both wheel and track type, reconnaissance combat vehicles, and light navy vessels.

The station is intended for integration with the existing platforms as part of modernization or conversion programs, namely for installation in new combat armored vehicles. The concept of the station provides for its installation in the combat vehicle which does not affect the inside space of the vehicle; ammunition compartments for the same are installed on the outside of the vehicle thus adding up to the increased resistance and combat flexibility and to more universal application of combat vehicles.

The weapons have electrical travel in traverse and elevation. The basic armament of the station includes automatic gun M87/12 30x210mm / 30x173mm, coaxial light machine gun M86 7.62x54 mm, double launcher of anti-armor guided missiles having the range of 3000 m, and 82 mm smoke pot launcher. Fire control system includes multi-sensor station with CCD and thermal image cameras, laser range finder, ballistic computer with operator`s display, and the unit for guidance of anti-armor missiles.

## Familija samohodne top-haubice "NORA-B/52" 155 mm / 52 kal.

Samohodni artiljerijski sistem familije NORA-B/52 kalibra 155 mm sa dužinom cevi od 52 kalibra je prvi složeni borbeni sistem razvijen u Jugoimport-SDPR J.P. koji je ušao u serijsku proizvodnju. Veliki broj oruđa ove familije isporučen je kupcima iz regiona Jugoistočne Azije i Podsaharske Afrike. Sistem je razvijen na principu otvorene arhitekture, što znači da se primenjena tehnička rešenja pojedinih podsistema mogu integrisati u sistem u celini u zavisnosti od specifičnosti zahteva, potreba i budžeta korisnika. Oruđe varijante oznake K-I karakteriše primena pune balističke zaštite modula kabine sa magacinom sa municijom i modula oruđa sa automatskim punjačem u kupolnoj ugradnji, kao i primenjena protivminska zaštita pojedinih vitalnih sklopova. Oruđe poseduje veliku vatrenu moć, zahvaljući velikom dometu (postignuto 42 km sa projektilom ERFB/BB, u razvoju projektil ERFB RA/BB, čiji će domet dostići 56 km) i brzini gađanja. Visoka taktička i operativna pokretljivost, kratko vreme prelaska iz marševskog u borbeni položaj i pripreme za dejstvo (do jednog minuta), postignuti su pre svega zahvaljujući primenjenom visokom stepenu automatizacije i savremenom visokosofisticiranom sistemu za upravljanje vatrom / komandno-informacionom sistemu.

## Family of self-propelled gun howitzers NORA-B/52 155 mm / 52 cal.

Self-propelled artillery system pertaining to NORA-B/52 family 155 mm, having the barrel 52 caliber long, is the first complex combat system developed by Yugoimport-SDPR which has entered serial production. Large number of weapons of this family was delivered to the buyers from the region of South-East Asia and Sub-Sahara Africa. The system was developed following the principle of open architecture which means that the technical solutions applied for certain subsystems may be integrated with the system as a whole depending on the specific requirement of the users, their necessities and available budget. The main characteristic of the weapon marked K-I is application of full ballistic protection of the cabin module and the ammunition compartment, as well as of the weapon module with automatic gun loader installed in the turret, and application of mine resistant protection of certain vital assemblies of the weapon. NORA gun howitzer has high fire power thanks to its long range (achieved range of 42 km with ERFB/BB projectile; estimated range with ERFB RA/BB projectile which is under development is expected be up to 56 km), and high rate of fire. High tactical and operational mobility, short time of transition from travelling into combat position and quick mission readiness (up to one minute) are achieved thanks to the applied high degree of automation and contemporary highly sophisticated fire control system / command-information system.

## Samohodna top-haubica "SOKO" 122 mm

Samohodno Oruđe Kratkog Odziva (SOKO) predstavlja top-haubicu kalibra 122 mm D-30J u vidu kupolne ugradnje na šasiju robusnog terenskog vozila pogonske formule 6 x 6.

SOKO 122 mm je moderan artiljerijski sistem, primarno namenjen snagama za brzu intervenciju, čija je namena brz odgovor na izazove savremenog ratovanja. Oruđe karakteriše velika vatrena moć zahvaljujući velikom dometu od 21 km sa HE/BB projektilom, mogućnost dejstva neposrednim gađanjem, velika brzina gađanja, velika borbena autonomija zahvaljujući velikom bojevom kompletu od 50 projektila i punjenja, visoka taktička i operativna pokretljivost, kratko vreme potrebno za prelazak iz marševskog u borbeni položaj i otvaranje vatre, oklopna zaštita modula kabine sa magacinom za municiju i oruđa kupolne ugradnje, visok nivo automatizacije i savremeni artiljerijski SUV.

## Self-propelled truck-mounted gun howitzer SOKO 122 mm

Self-propelled rapid response truck-mounted weapon (SOKO) is D-30J gun howitzer cal. 122 mm in the form of a turret mounted on the chassis of a robust 6 x 6 heavy duty vehicle.

SOKO 122 mm is modern artillery system primarily intended for fast interventions and quick response to the challenges of contemporary warfare. The main characteristics of the weapon are its high fire power thanks to long range of 21 km with HE/BB projectile, possibility of engagement in immediate firing, high rate of fire, as well as high combat autonomy achieved with large combat set of ammunition containing 50 projectiles and charges, high tactical and operational mobility, short time required for transition from travelling into combat position and firing, armor protection of the cabin module with ammunition compartment and of the weapon installed in the turret, high level of automation and introduction of contemporary FCS.

## Samohodna haubica SH4 105 mm

Artiljerijski sistem 105 mm SH-4 zasniva se na poluoklopljenoj / poluotvorenoj ugradnji modernizovanih haubica M-56 ex-Yu proizvodnje ili M101 američke proizvodnje na kamionske šasije 6x6 ili 4x4. Sistem karakteriše ručno upravljanje svim funkcijama, koje je taktički opravdano zahvaljujući maloj masi municije, te u skladu sa time i fizički lakšem opsluživanju svih funkcija oruđa. Ovo omogućava srazmerno nisku cenu uz visoko povećanje efikasnosti u odnosu na vučna oruđa. Oruđe karakteriše velika pokretljivost i domet od preko 18 km, kratko vreme posedanja vatrenog položaja i otvaranja vatre, primena savremenog SUV-a, veliki bojevi komplet i velika stabilnost platfrome.

## Konvertovani top M46/10 155 mm / 52 cal.

Program konverzije topa M46 130 mm u top M46/10 kalibra 155 mm sa cevi dužine 52 kalibra zasniva se na ugradnji novog sklopa cevi sa zadnjakom i zatvaračem i dvokomornom gasnom kočnicom, kao i nekim modifikacijama originalne hidraulične kočnice i povratnika.

Konvertovani top koristi standardnu NATO municiju sa barutnim punjenjima konfigurisanim u vrećama, monoblok i modularnim punjenjima, završno sa punjenjem M11 zona 10 i projektilom ERFB/BB dometa 42 km. Takođe, top može da koristi i postojeće i perspektivne modele projektila RA-BB. Rukovanje oruđem na vatrenom položaju – prelazak iz marševske u borbenu konfiguraciju identično je originalnom topu 130 mm, a sile na ručicama za pokretanje oruđa po pravcu i elevaciji ostale su nepromenjene. Radi olakšavanja rukovanjem težim projektilom moguća je opciona ugradnja poluautomatskog punjača sa pneumatskim potiskuvačem. Sistem je integrisan u savremeni artiljerijski sistem za upravljanje vatrom /komandno informacioni sistem, te je na oruđu u predelu desnog štita ugrađen pokazivač elemenata gađanja.

Ovo oruđe predstavlja moderno rešenje sredstava vatrene podrške sa izuzetno visokim odnosom parametara cena-efikasnost.

## Self-propelled Howitzer SH4 105 mm

Artillery system SH-4 cal. 105 mm is based on semi-armored / semi-open installation of modernized howitzers M-56 produced in former Yugoslavia or M101 produced in USA, mounted on 6x6 or 4x4 truck chassis. The main characteristics of this system are manual control of all functions which is tactically justified thanks to small weight of ammunition, and therefore physically easier servicing of all functions of the weapon. This provides for low price and high increase of efficiency of the weapon proportional to the towed weapons. The main characteristic of this weapon is its high mobility and the range exceeding 18 km, short time of taking of own fire position and firing, application of modern FCS, large combat set and high stability of the platform.

## Converted Gun M46 / 10 155 mm / 52 cal.

The program of conversion of M46 gun cal. 130 mm into M46/10 gun cal. 155 mm by introduction of a barrel 52 caliber long is based on installation of a new barrel assembly consisting of a breechblock and double chamber muzzle brake, as well as certain modifications of original hydraulic brake and recuperator.

The converted gun uses standard NATO ammunition with propellant charge configurated in bags, monoblock and modular charge, complete with 10 zones of M11 charge and ERFB/BB projectile achieving the range of 42 km. This gun may also use the existing and prospective models of RA-BB projectiles. Operation of the gun on fire position - transition from travelling into combat position is identical to original gun cal. 130 mm, and the force applied on the handles for traverse and elevation of the gun has also remained unchanged. Easier handling of heavier missiles is enabled by optional installation of semiautomatic charger with pneumatic plunger. The system is integrated into modern artillery fire control system / command information system and therefore, a fire data display is installed on the weapon itself in the region of right-hand protective armor.

This weapon represents modern fire support solution with exceptionally high proportion of the price relative to its efficiency.

## MX 155 mm HE ERFB RA/BB hibridni projektil velikog dometa

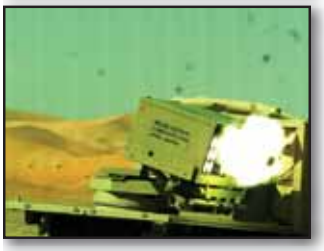
(Sa generatorom gasa i base bleed jedinicom na dnu projektila)

MX 155 mm HE ERFB RA/BB pripada novoj generaciji projektila dizajniranih sa ciljem da se značajno poveća domet savremenih topova/haubica, kako vučnih, tako i samohodnih sa cevima dužina 39, 45, i 52 kalibra. U projektilu su sadržani raketni motor i jedinica gas-generatora, koji u kombinaciji povećavaju operativni domet savremenih top-haubica od 10 do preko 14 km u poređenju sa standardnim ERFB/BB projektilima (u zavisnosti od dužine korišćene cevi).

## Hybrid long-range projectile MX 155 mm HE ERFB RA/BB

(Containing gas generator and base bleed units at the bottom of the projectile)

The MX 155 mm HE ERFB RA/BB belongs to a new generation of projectiles designed to substantially increase the range of modern guns / howitzers, both towed and self-propelled, having the barrels cal. 39, 45, and 52. The projectile contains rocket motor and a gas generator unit. Combination of those two elements increases operative range of modern gun howitzers up to 10 and even exceeding 14 km compared to standard ERFB/BB projectile (depending on the caliber of used barrel).



## Samohodni višecevni raketni lanser 107 mm

Artiljerijski raketni sistem sastoji se od dva lansera sa po 24 nevođene rakete, postavljna na vozilo visoke prohodnosti.

Sistem je potpuno automatizovan sa integrisanim sistemom za upravljanje vatrom.

Sa standardnim raketama postižu se daljine od 8,2 km, dok sa raketama produženog dometa daljine od 11,5 km.

## Self-propelled multiple rocket Launcher 107mm

Artillery rocket system is composed of two launchers each having 24 non-guided rockets. The system is mounted on high mobility vehicle.

The system is fully automated with integrated fire control system.

The range of 8.2 km is reached with standard rockets, while the range of 11.5 km may be reached with the rockets with extended range.

## Lasta-95

Lasta-95 je školski avion namenjen obuci pilota u osnovnom, akrobatskom, instrumentalnom i noćnom letenju, kao i osnovnim elementima gađanja, raketiranja i bombardovanja (GRB). Avion je namenjen za selekciju kandidata u vojnoj akademiji i za početnu i osnovnu obuku pilota. Ima male brzine sletanja i poletanja, i „dobroćudno" ponašanje – prašta greške neiskusnom pilotu. Projektovan je po svetskim standardima i opremljen vrhunskom elektronskom opremom koja zadovoljava postojeće standarde i omogućava GPS i radio-navigaciju.

## Školsko – borbeni dvosedi avion sa turboelisnim motorom KOBAC

Školsko – borbeni dvosedi avion sa turboelisnim motorom KOBAC razvijen je iz osnovne verzije aviona LASTA, uz značajna poboljšanja performansi aviona, nosivosti ubojnih sredstava kao i integracije novog napadno-navigacijskog sistema i sistema za bezbedno prinudno napuštanje aviona. Navedena poboljšanja omogućavaju značajno proširenje dijapazona upotrebe aviona, uključujući naprednu školsko-borbenu obuku i borbenu upotrebu u bliskoj vazdušnoj podršci protivpobunjeničkih i protivterorističkih dejstava (COunter INsurgency – COIN). Avion karakterišu i izuzetno dobre manevarske karakteristike. Koncept aviona uključuje i dodatne rezervoare za gorivo na krajevima krila, čime se postiže veliki dolet, te i dugotrajno „čekanje" u zoni cilja, što je posebno značajan zahtev u kategoriji COIN aviona. Može da koristi, pored aerodroma, baziranja sa betonskim PSS, i pripremljene travnate terene.

## Lasta-95

Lasta-95 is a training aircraft intended for training of pilots in basic, acrobatic, instrumental and night flying, as well as in the basic elements of firing, rocketing and bombarding. This aircraft is intended for selection of candidates in military academies, and for initial basic training of pilots. It has low landing and take-off speeds, and `good natured` behavior as it forgives the mistakes of inexperienced pilots. The aircraft is designed according to the world standards; it is equipped with prime electronic equipment which meets the existing standards and provides for GPS and radio navigation.

## KOBAC Two-seater training – fighter aircraft with torbo-propeller engine

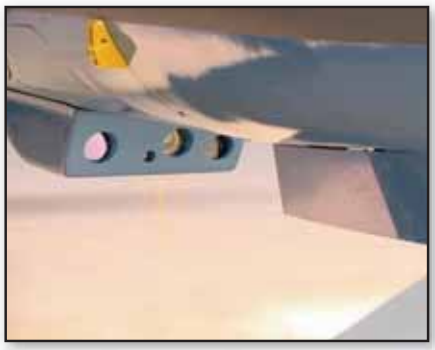
KOBAC traning – fighter aircraft with turbo-propeller engine is developed out of the basic version of LASTA aircraft with introduction of substantial improvements in aircraft performance, increase of live ordnance carrying capacity, integration of new attack navigational system and the system for safe compulsory abandoning of the aircraft. All these improvements provide for substantial extension of possibilities of use of the said aircraft including advanced fighter traning, and its application in close support from the air of antiriot and anti-terrorist combat (the so called COunter INsurgency – COIN). The characteristics of this aircraft include exceptionally good manouverability. The concept of KOBAC aircraft includes additional fuel tanks installed at the end of both wings which provide for extended aircraft range and long `waiting` time within the target zone which represents particularly important request as far as COIN aircraft cathegory is concerned. KOBAC aircraft may use both airports with concrete runways and prepared grass terrains.

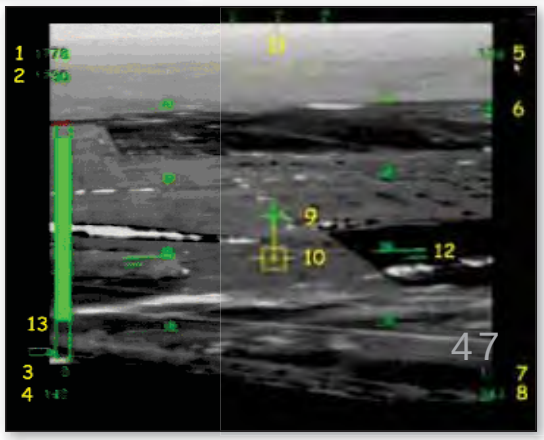
## Napadno-navigacijski sistem školsko – borbeni avion KOBAC

Omogućava osmatranje i precizno dejstvo raznovrsnim nevođenim i vođenim ubojnim sredstvima danju i noću, planiranje misije i analizu izvršenih zadataka .Napadno-navigacijski sistem (NNS), u čijem se sastavu nalaze, između ostalog, i optolektronski sistem sa dnevnom i termovizijskom kamerom i laserskim daljinomerom, monitor za vizuelizaciju podataka od optoelektronskog sistema, navigacije i letnih podataka, inercijalni sistem i GPS uređaj. Uz određena prilagođavanja i modifikacije primenjenih rešenja, namenjen integraciji u avione i helikoptere različitih kategorija.

## Attack navigation system for KOBAC training fighter aircraft

Attack navigation system (ANS) provides for surveillance and precise engagement of different kinds of non-guided and guided live ordnance both in daylight and night conditions, as well as mission planning and analysis of completed tasks. Among other things, attack navigation system comprises optoelectronic system with day and night thermal image camera and laser range finder, monitor for visualisation of optoelectronic system data, navigation and flight data, as well as ineretial navigation system and GPS unit. The unit is intended for integration with various types of airplanes and helicopters with certain adjustments and modifications of the applied solutions.





## Program modernizacije srednjih helikoptera

Program ima za cilj proširenje dijapazona taktičke upotrebe srednjih transportnih, odnosno helikoptera opšte namene, omogućavajući im učešće u zadacima izvođenja preciznog dejstva nevođenim i vođenim naoružanjem, odnosno bliske vatrene podrške trupama na zemlji, kao i vatrene podrške tokom izvođenja desantnih operacija neposredno pre, za vreme i po izvršenom helikopterskom desantu, danju, noću i u složenim meteo uslovima. Obuhvata integraciju savremenog napadno-navigacijskog sistema koji je integrisan sa sistemom optoelektronskih višenamenskih multisenzorskih platformi i integraciju sistema naoružanja. Sistem naoružanja obuhvata teški mitraljez sa optolektronskim SUVom koji se ugrađuje na bočna vrata, sistem nevođenog i vođenog naoružanja koji se sastoji od podvesnih kontejnera sa mitraljezom 12. 7 mm, topom 20 mm, lanserima nevođenih raketa kalibra 57 mm i 128 mm, vođenih raketa dometa 3000 m, nosača avio bombi i drugog perspektivnog naoružanja, pre svega raketnog sistema LORANA dometa 9 km.

## Program of modernization of medium helicopters

The purpose of the program of modernization of medium helicopters is widening of tactical appication of medium transporter and general purpose helicopters, as well as providing for their engagement in missions of precise firing of non-guded and guided missiles, and rendering of close fire support to the troops on the ground, and fire support during operations of landing assaults immediately before, during and after helicopter landing both in daylight, night and complex meteorological conditions. This program consists of integration of modern attack navigation system with the system of multi-purpose multi-sensor optoelectronic platforms, and intergation of armament system. The armament system includes the following: heavy machine gun with optoelectronic FCS installed on side doors, the system of non-guided and guided weapons comprising of the pods equipped with 12.7 mm machine gun, 20 mm gun, launchers for non-guided missiles cal. 57 mm and 128 mm, guided missiles with the range of 3000 m, pods for air bombs and other advanced armament such as LORANA sysyem having the range of 9 km.

## VB-10 Program vojnika budućnosti

Program vojnika budućnosti (VB-10) predstavlja složeni projekat razvoja „sistema od sistema“ na nivou vojnika pešadije, odnosno pripadnika specijalnih jedinica. Program obuhvata razvoj više sistema, kao što su:

• Sistem za upravljanje vatrom pešadijskim naoružanjem, koji obuhvata niz optolektronskih nišanskih sistema koji treba da povećaju efiaksnost upravljanja vatrom u svim uslovima savremenih dejstva, uključujući i dejstvo iza ugla ili iz zaklona, u urbanom ambijentu ili ispresecanom zemljištu

## Soldier of the future program VB-10

Soldier of the Future (VB-10) represents complex project of development of the “system of systems“ for infantry soldier, i.e. special unit soldier. The program encompasses development of several systems such as the following:

• Fire control system for infantry armament comprising numerous optoelectronic sighting devices which serve to increase the efficiency of fire control in all conditions of modern warefare, including actions around the corner and behind the shelter, in urban battlefield or on intersected land

• Komandno -informacioni sistem na nivou pešadijskih jedinica, integrisan u združene taktičke grupe, najčešće do nivoa bataljona, sastoji se od prenosnih računara umreženih preko personalnih radija i komunikacione opreme integrisane u borbena vozila

• Razvoj sistema balističke zaštite i nošenja borbenih resursa, koji treba da omoguće visok nivo preživljavanja u uslovima dejstva protivničke vatre

• Command information system for infantry units integrated with joint tatical groups most frequently up to the level of batallion, including networking of portable computers with personal radio stations and communication equipment integrated with combat vehicles

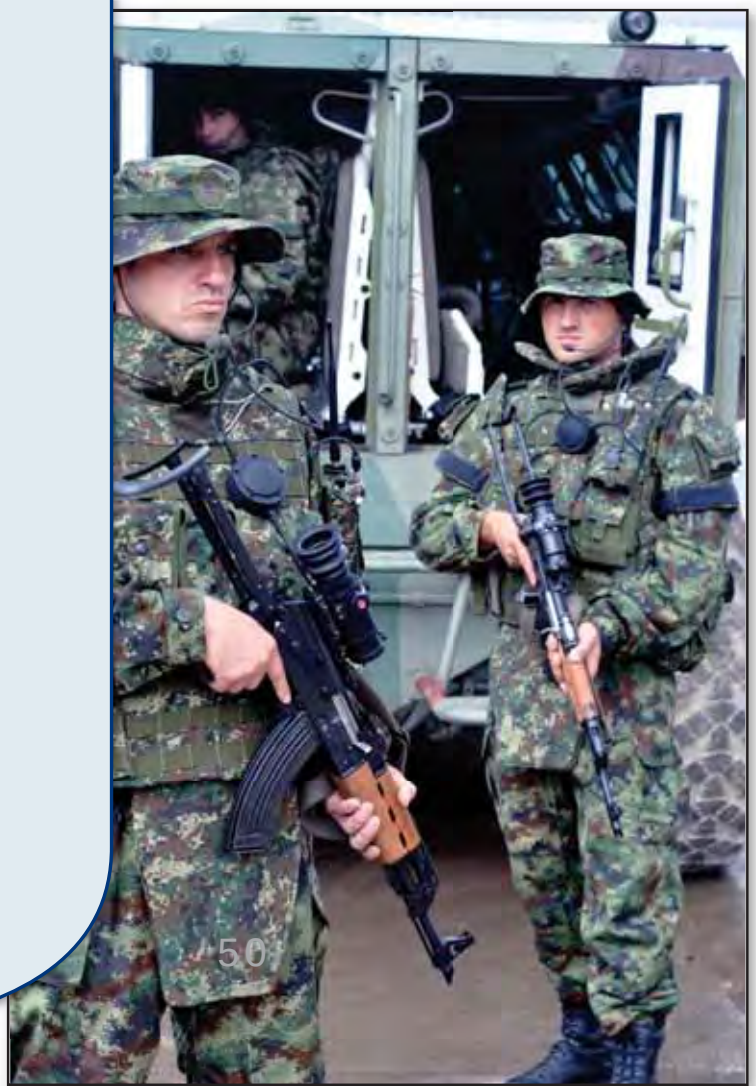
• Development of a system of ballistic protection and carrying of combat resources which should provide for high level of survival in condionins of enemy actions.

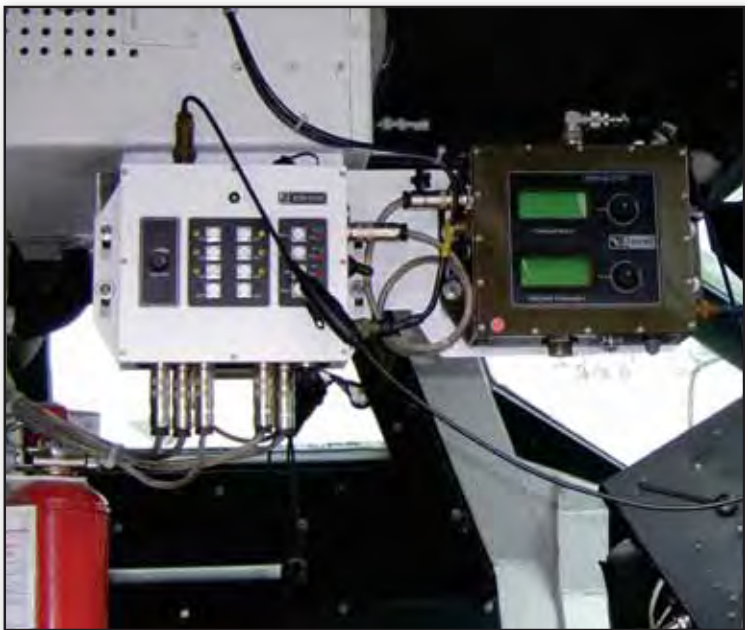
## Uređaj za međusobnu komunikaciju (UMK) sa personalnim radiom (PR)

Uređaj za međusobnu komunikaciju sa personalnim radiom omogućava međusobnu govornu komunikaciju između članova posade u vozilima i objektima gde postoji vrlo visok nivo buke, kao i digiatalnu komunikaciju između vozila i pripadnika iskrcnog pešadijskog odeljenja koji se nalaze na daljini do 500 m u urbanim i do 3500 m u ruralnim uslovima, određivanje pozicije pripadnika odeljenja radi praćenja položaja pripadnika iskrcnog odelenja na digitalnoj mapi KIS sistema na monitoru komandira u vozilu, kao i (uz integraciju sa tablet računarom) i druge funkcije komandno-informacionog sistema na različitim nivoima.

## Interpersonal communication unit (IPCU) with personal radio station (PR)

The unit for interpersonal communication with personal radio station provides for interpersonal verbal communication between members of the crew inside the vehicles and in objects with high level of noise, as well as digital communication between the vehicle crew and the disembarked infantry squad at ranges of up to 500 meters in urban and 3500 meters in rural conditions, defining of position of members of the disembarked squad for tracking their respective movements on Command Information System (CIS) digital map displayed on the commander`s monitor inside the vehicle, and other functions of command information system at varions levels (in interaction with a tablet computer).






## KIS /SUV artiljerije

Predstavlja distribuirani računarski sistem za obradu i prenos podataka namenjen za izračunavanje početnih elemenata za gađanje, elemenata za gađanje u toku korekture, prenos vatre i grupno gađanje, za artiljerijska oruđa i minobacače. U protekloj dekadi razvijene su tri generacije sistema za upravljanje vatrom artiljerije, od kojh poslednja, sadrži sledeće elemente: Artiljerijski Elektronski Goniometar (AEG) nove generacije sa termovizijskom kamerom, radar za merenje početne brzine projektila na ustima cevi svakog oruđa, GPS letvu, meteo senzor, inercijalni navigacioni sistem (INS) i komunikacioni podsistem. Ovaj sveobuhvatni hardversko-softverski sistem namenjen je za: značajno poboljšanje sagledavanja trenutne situacije na bojištu, podršku u procesima pripreme i planiranja komandantu i komandirima, donošenje odluke, organizaciju, izveštavanje, prenos naređenja, prikupljanje podataka o ciljevima i sličnim borbenim aktivnostima.

## Artillery command information system (CIS) / Fire Control System (FCS)

This is distributing computer system for data processing and transfer, intended for callculation of initial firing elements, as well as firing elements during correction, fire transfer and group firing, for artillery weapons and mortars. Three generations of artillery fire control system have been developed in the past decade. The latest generation includes the following components, namely: new generation of Artillery Electronic Direction Finder (AEDF) containing thermal image camera, radar for measurement of missile muzzle velocity for each weapon, GPS bar, meteorological sensor, inertial navigation system (INS) and communication subsystem. This complex hardware and software system is intended for substantial improvement of complete overview of the ongoing situation on the battlefield, providing support for the processes of officers` and commanders` preparation and planning, decision making, organization, reporting, command distribution, gathering the data on the targets, and other similar combat activities.

## KIS združene taktičke grupe

Jugoimport-SDPR J.P. je ušao u razvoj prvog KIS u okviru modernizacije tenka M84 AB1 i to je bio sistem za tenkovsku četu pod nazivom Battle Management System M84 AB1. KIS je sa uspehom prvi put demonstriran 2005 godine. Od tada se sistem hardverski i softverski stalno usavršan i on je osnova KIS združenih taktičkih jedinica. Pristup u razvoju KIS za različite rodove je bio od najnižih taktičkih nivoa ka višim. Oni su hardverski i softverski kompatibilni, što omogućava spajanje aplikacija KIS za različite rodove OS u jedinstveni sistem i to od nivoa združene taktičke grupe na nivou bataljona pa naviše.

Osnovne funkcije KIS: planiranje zadatka i izrada digitalne radne karte pomoću alata za prikaz GIS tehnologijom i njeno dostavljanje potčinjenim jedinicama, izdavanje komandi, automatsko prenošenje podataka o ciljevima do svih jedinica na podloge digitalnih karata - prikazivanje položaja uočenih ciljeva na podlozi digitalne karte (Red Force Marking), prikazivanje položaja sopstvenih snaga tokom kretanja (Blue Force Tracking), dodeljivanje ciljeva jedinicama i njihovo neutralisanje, uočavanje neutralisanih ciljeva na radnim kartama, slanje zahteva o trenutnom stanju jedinice od komande ka jedninici, slanje izveštaja o stanju jedinice od jedinice ka komandi i dr.

## Command information system (CIS) for joint tactical group

Yugoimport-SDPR started the development of the first command information system (CIS) as a part of modernization of M84 AB1 tank, and it was the system for the company of tanks named Battle Management System M84 AB1. The first successfull demonstration of the system was carried out in 2005. Since that time the system has been constantly improved. It represented the basis for the development of battlefield management system of joint tactical forces. The approach for the development of CIS for different corpses started from the lowest tactical levels upwards. They all have compatible hardware and software which provides for fusion of CIS applications for different branches of armed forces into unique system up to the level of joint tactical group of a battalion onward.

The basic CIS functions encompass the following: task planning and preparation of digital working map applying the tools of geographical information system (GIS) and distribution of the map to subordinate units, as well as issuing commands, using digital map underlay for automatic transfer of the data on targets to all units – displaying of positions of identified targets on the underlay of digital maps (Red Force Marking), marking of positions of own forces in move (Blue Force Tracking), assignment fo targets to particular units and target neutralization, identification of neutralized targets on working maps, filing of requests on current position of the units from unit command to member of the unit, filing of reports on current condition of the unit from members towards the command, etc.

## Tenk M-84AB1/program modernizacije tenkova

M-84 AB1 je najnovija varijanta tenka iz serije M-84. Sva tri osnovna parametra koncepta tenkova (vatrena moć, zaštita i pokretljivost) unapređena su modernizacijom.

Ugrađeni su: novi sistem za upravljanje vatrom (spregnut sa četvorokanalnom nišanskom spravom); pasivni izviđački radarski sistem PIRS; tenkovska osmatračko merna sprava TOMS (za osmatranje, izviđanje i nišanjenje danju, noću i u uslovima smanjene vidljivosti); komandno-informacioni sistem KIS (omogućuje situacionu svesnost, uz prikaz podataka na situacionoj mapi uz mogućnost razmene informacija); daljinski upravljana oružana stanica 12,7 mm; sistem za prevenciju eksplozivnog požara; sistem za zaštitu motora; ABHO sistem; eksplozivno reaktivni oklop; elektro-magnetna minska zaštita; klima uređaj; modifikovani hodni deo; pogonska grupa sa motorom 1000 ili 1200 KS. Ovako dorađeno sredstvo predstavlja uspešnu integraciju različitih podsistema u jednu celinu, što tenk čini još kompletnijim i kvalitetnijim nosiocem vatrene moći. Podsistemi razvijeni u toku procesa razvoja ovog tenka, mogu se uspešno ugraditi i u druge tenkove serija T, uključujući familije tenkova T-55, T-62 i T-72, kao i tenkove drugih tipova.

## Tank M-84AB1 / Tank modernization program

The M-84 AB1 is the latest version of the tank pertaining to M-84 series. The three basic parameters of tank concept (fire power, protection and mobility) are substantially improved by this modernization.

The following innovations are built into the modernized tank, namely: new fire control system (connected to four-channel sighting device), passive reconnaissance radar system (PIRS), tank surveillance measuring device (TOMS) (for surveillance, reconnaissance and sighting at night and in conditions of reduced visibility), command information system (CIS) (providing situation awareness, and data display on situational map with the possibility of information sharing), remotely controlled weapon station cal. 12.7 mm, system for prevention of explosive fire, system for engine protection, NBC system, explosive reactive armor (ERA), electro-magnetic protection against mines, air-conditioning, modified running gear, and power pack with 1000 or 1200 KS engine. Adapted tanks represent an example of successful integration of different subsystems into one entity, thus making the tank more complete and improving its quality as firepower carrier. The subsystems developed in the process of the development of the above mentioned tank may be successfully applied to other types of the tanks pertaining to T series including the families of T-55, T-62 and T-72 tanks, as well as other types of tanks.

## Radar za otkrivanje ciljeva na zemlji PR-15

PR-15 je prenosni radarski sistem za otkrivanje pokretnih ciljeva na zemlji. Koristi se za izvršenje složenih zadataka danju i noću i u svim vremenskim uslovima i na zahtevnom terenu. Radar je moguće umrežiti sa drugim radarima, postaviti ga na kabinu vozila, tronožac, teleskopski stub. Radarski upravljačko-pokazivački uređaj sistema PR-15 sadrži sistemsku upravljačku tablu i radarski pokazivač.

Radar ima domet od 100 m do 30 km. Daljina otkrivanja lakog vozila iznosi oko 7 km, vojnika u hodu iznosi od 3,5 do 4 km, daljina otkrivanja vojnika koji puzi do jednog kilometra.

## Ground target acquisition radar PR-15

The PR-15 represents mobile radar system for acquisition of ground moving targets. It is used for performing of complex tasks both day and night in all weather conditions and on the difficult terrain. The radar may be networked with other radars; it may be set on the cabin of the vehicle, tripod, telescopic mast, etc. Radar control and display unit pertaining to PR-15 system contains system control panel and radar display.

The range of the said radar varies from 100 meters up to 30 kilometers. The acquisition range of the radar varies from approximately 7 km for light vehicle, to 3.5 – 4 km for walking soldier, and up to 1 km for crawling soldier.


## ALAS/LORANA

Familija raketnih projektila velikog dometa ALAS/LORANA pripadaju kategoriji savremenih i perspektivnih sistema vođenih raketa velikog dometa vođenih bez vizuelnog kontakta između operatora i cilja. Sistem vođenja svih modela familije ovih raketnih sistema zasniva se na primeni sistema inercijalne navigacije (INS) u srednjem delu putanje koji omogućava let po putanji planiranoj tokom pripreme misije uz korišćenje geografskih pogodnosti terena na digitalnoj mapi na konzoli komandno-informacionog sistema (KIS) u operativnom centru misije. Integrisani sitema TV-komandnog vođenja koji se sastoji od CCD TV / Termičke kamere i dvosmernog sistema za prenos podataka na bazi optičkog kabla namotanog na kalem ugrađen u zadnjem delu rakete koji omogućava operatoru osmatranje terena, odabir cilja i završno samonavođenje na cilj. Pogonska grupa kod modela LORANA zasniva se na raketnom motoru na čvrsto gorivo, koji omogućava domet od 9 km, dok je kod sistema ALAS primenjen turbomlazni motor, koji mogućava efikasne domete od 25 i 50 km, u zavisnosti od primenjenih tehničkih rešenja podsistema, pre svega kapaciteta rezervoara za gorivo i dužine optičkog kabla.

Arhitektura sistema omogućava njegovu integraciju na različite kopnene, pomorske i vazdušne plaforme, kao i dejstvo na širok dijapazon pokretnih i stacionarnih tačkastih kopnenih ciljeva i ciljeva na vodi, a pre svega značajnih ciljeva raspoređenih u dubini protivnikovog rasporeda.

## ALAS/LORANA

The ALAS/LORANA family of long range missiles belongs to the category of modern prospective systems of long range guided missiles guided without any visual contact between the operator and the target. The system of guidance of all types of missiles belonging to this family of missiles is based on the application of inertial navigation system (INS) in the mid part of the trajectory which provides for flight against the trajectory planned during preparation of the mission using favorable geographical conditions of the terrain shown on digital map on the console of command information system (CIS) in mission operative center. TV guidance consisting of CCD TV / thermal image camera and two-way data transmission system based on optical cable coiled around the pulley installed in the rear part of the missile which provides for the operator to carry out reconnaissance of the terrain, select the target and terminal self guidance. Rocket propulsion of LORANA is based on missile engine using solid fuel which provides for the range of 9 km, while ALAS system uses turbojet engine which provides for effective ranges of 25 km and even 50 km, depending of the applied technical solutions of the subsystems, primarily the capacity of the fuel tank and the length of the optical cable.

The design of the system provides for its integration with different army, navy and airborne platforms, as well as engagement of wide range of moving and stationary dotted land targets and sea targets, and above all engagement of vital targets deep behind the enemy line.

## Mornarički top M71/10

Omogućava brzo i efikasno dejstvo danju, noću i u složenim meteo uslovima na otvorenom moru na daljinama do 2000 m protiv ciljeva na moru, kopnu i vazduhu. Savremeni lokalno upravljani univerzalni automatski mornarički top kalibra 20 x 110 mm sa integrisanim optoelektronskim sistemom za upravljanje vatrom opremljen je sa CCD kamerom sa velikim uvećanjem, termičkom kamerom, laserskim daljinomerom i balističkim računarom sa displejom i automatskim pomeranjem končanice.

Top je posebno pogodan za ugradnju na brodove različitog deplasmana radi primene u samoodbrani od brzih čamaca-samoubica, kao i za ugradnju na lake brze patrolne bodove/čamce iz sastava obalske straže/policije/ratne mornarice angažovane u protivgerilskim/protivpiratskim operacijama.

## Naval gun mount M71/10

Naval gun mount M71/10 provides for speedy and efficient action both in daylight and night conditions, as well as in complex meteorological conditions at open sea at ranges of up to 2000 meters against sea surface vessels, on the land and in the air. Modern locally guided universal automatic navy gun cal. 20 x 110 mm, with integrated optoelectronic fire control system is equipped with CCD camera with enormous magnification, thermal image camera, laser range finder and ballistic computer with display and automatic reticle movement.

This gun is particularly suitable for installation on vessels of different displacements for use in self-defense against fast boats – suicide boats, as well as for installation in light fast patrol boats and vessels of coast guard / police / navy engaged in anti-guerilla / anti-pirate operations.

## Modernizacija PVO sistema KUB

Program modernizacije mobilnog raketnog sistema PVO KUB omogućava značajno povećanje borbene efikasnosti, verovatnoće preživljavanja na bojištu i otpornost na ometanje. Modernizovani sistem ima niz prednosti u odnosu na standardni, uključujući punu digitalizaciju komponenata, zamenu komponenata proizvedenih originalno u cevnoj tehnologiji komponenata proizvedenih po savremenoj poluprovničkom i procesorskoj tehnologiji, digitalnu obradu signala, mogućnost integracije u savremene komandno informacione sisteme tpa C3I i C4I, veću pouzdanost, povećanu otpornost na ometanje i pasivizaciju sistema. Program modernizacije obuhvata modernizaciju radarske stanice za osmatranje i praćenje, modernizaciju sistema za komandovanje i upravljanje, modernizaciju mobilnog osmatračko-akvizicijskog radara i modernizaciju radara za merenje visine cilja. Set za modernizaciju radarske stanice za osmatranje i praćenje uključuje novu integrisanu televizijsku i termovizijsku kameru, poluprovodnički niskošumni pojačivač, digitalni brisač stalnih odraza, novi multifunkcionalni displej kao i digitalni system za automatsko usmeravanje antene nišanskog radara. Modernizacija komandno-kontrolnog sistema obuhvata kompletnu integraciju novog automatskog komandnog sistema - kabine UKUV. Set za modernizaciju samohodnog osmatračko-akvizicijskog radara uključuje poluprovodnički niskošumni pojačivač, digitalni brisač stalnih odraza, novi ekstraktor i novi traker. Za vezu između tog radara sa novom komandnom kabinom koristi se optički kabl, dok se za vezu između radara za merenje visine sa komandnom kabinom i za vezu između osmatračko-akvizicijskog radara i radara za merenje visine koriste optički kablovi ili Ethernet.

## Modernization of KUB Air Defense System

Upgrade of the “KVADRAT” (“KUB’’ or 2K12) missile system opens the way for higher combat effectiveness, probability of survival and system resistance to jamming. The upgraded system has numerous advantages compared to the standard “KVADRAT”, including full digitalization of system components, replacing of the old tube technology by semi-conductor or processor technology, Digital Signal Processing, Possibility for C3I, C4I interfaces, greater reliability, greater resistance to jamming and System passivisation. The uprade program is including upgrade of surveillance and tracking radar station, ugrade of command and control system, upgrade of mobile surveillance and acquisition radar, as well as uppgrade of the radar height finder.

The upgrade kit for the surveillance and tracking radar station includes integration of new television and thermal-imaging camera, semi-conductor low noise amplifier – (LNA/K-11, LNA/K-31), digital mowing target indicators, new multifunctional indicator, new digital indicator as well as figital system for automatic antenna direction.

Upgrade of command and control system K-1 included new automated command and control system, know as cabin UKUV.

The upgrade kit for the mobile surveillance and acquisition radar 1RL128D includes integration of semi-conductor low noise amplifier, digital MTI, new digital indicators, new extractor and new tracker. Optical cable is used to connect the modernized mobile surveillance and acquisition radar to the new command cabin. Radar height finder is connected to command cabin by optical cable and via Ethernet to modernized mobile surveillance and acquisition radar.

# OPREMANJE VOJSKE SRBIJE I JEDINICA MUP SREDSTVIMA NVO IZ PROGRAMA JUGOIMPORT-SDPR J.P.

Opremanje Vojske Srbije i MUP sredstvima iz razvojnih programa našeg preduzeća je jedan od naših prioriteta. Razvojno-proizvodna strategija Jugoimport-SDPR J.P., koja podrazumeva finansiranje troškova razvoja i osvajanje proizvodnje složenih borbenih sistema iz sopstvenih izvora, odnosno iz ugovora sa ino-partnerom prilikom plasmana na svetsko tržište, oslobađa VS potrebe za ulaganjem u razvoj i osvajanje proizvodnje. U ranijim periodima ulagana su velika sredstva za te potrebe, a na ovaj način se mogu koncentrisati na nabavku sredstava iz domaće proizvodnje.

Složeni borbeni sistemi iz programa Jugoimport-SDPR J.P. po osnovnim taktičko-tehničkim karakteristikama, i po odnosu cena/efikasnost su potpuno konkurentni sa proizvodima vodećih inostranih proizvođača.

Nabavkom sredstava iz domaćih izvora omogućena je znatno jednostavnija i jeftinija eksploatacija, održavanje i modernizacija. Orijentacijom na ovakvu nabavku složenih borbenih sistema upošljavava se domaća industrija, i takođe značajno utiče na povoljan spoljnotrgovinski balans.

Posredno, na ovaj način omogućava se obrazovanje domaćih stručnjaka, čime se stvara čvrta baza za budućnost. Ovakvom poslovnom politikom omogućena je direktna koordinacija sa korisnikom iz VS/MUP čime se postiže da su izlazne karakteristike sredstava prilagođene njihovim specifičnim potrebama.

# EQUIPPING OF THE SERBIAN ARMED FORCES AND MINISTRY OF INTERNAL AFFAIRS WITH ARMAMENT AND DEFENSE EQUIPMENT FROM THE PRODUCTIONAL PROGRAM OF YUGOIMPORT-SDPR

Equipping of the Serbian Armed Forces and Ministry of Interior Affairs of the Republic of Serbia with Armament and Defense Equipment (ADE) contained in the productional programs of Yugoimport-SDPR represent one of our priorities. Develpoment and production strategy of Yugoimport-SDPR, which includes funding of the costs of the development and mastering of production of complex combat systems with its own financial means, namely with the means obtained through the contracts with foreign partners by selling the said equipment on the international market, releases Serbian Military from the necessity of investing in the development and mastering of production of such weapons. Earlier, Serbian Military invested substantial financial means in the above mentioned requirements, but now it may concentrate on the procurement of the weapons and equipment of Serbian production.

Judging from their basic technical and tactical characteristics and from the relation price – efficiency, complex combat systems contained in Yugoimport-SDPR `s production program are absolutely competitive with the similar products of the leading foreign manufacturers of similar goods.

Procurement of such weapons from domestic sources provides for much simplified and cheaper exploitation, maintenance and modernization. Orientation towards the above mentioned procurement of complex combat systems also provides engagement of the resources of our own industrial capacities, and substantially influences favorable foreign trade balance.

Indirectly, this also provides for improvement of education of our own experts, thus creating the firm basis for the future. Such business policy enables direct coordination with the user from Serbian Military or the Ministry of Interiar Affairs and the adjustment of the output characteristics of the weapons to their specific needs.

## Proslava Dana Vojske Srbije u Leskovcu

U Leskovcu je 23. aprila 2012. godine svečano obeležen Dan Vojske Srbije, na osnovu sećanja na početak Drugog srpskog ustanaka 1815. godine. Svečanost je počela kada je sa obližnjeg brda Hisar, izvršena počasna artiljerijska paljba iz šest oruđa.

Kao svoj osnovni zadatak VS je istakla obezbeđivanje mira i bezbednosti države i života svakog građanina i pokazala da ravnopravno sa najmodernijim zemljama sveta može da učestvuje u obezbeđivanju mira u multinacionalnim operacijama UN.

Jugoimport-SDPR J.P. je učestvovao u obeležavanju Dana Vojske Srbije prikazom svojih kapitalnih projekata - tenkom M 84 AB1, modernizovanim BVP M-80 sa kupolom 30 mm i integrisanim novim SUV i KIS, samohodnim haubicama Nora B52 KI-155 mm , Soko- 122 mm, SH-4 105 mm, višenamenskim borbenim vozilom Lazar, familijom komandno izviđačkih vozila BOV M-11, helikopterskim naoružanjem, NNS za avion Kobac, brodskim topom 20 mm, vođenim raketama ALAS i LORANA, kompletnim programom vojnika budućnosti VB-10, radarom PR-15 itd.

## Celebration of the Day of Serbian Military in Leskovac

The Day of the Military of the Republic of Serbia was celebrated in Leskovac on April 23, 2012 by commemoration of the beginning of the Second Serbian Uprising against Turkish Empire in 1815. The celebration commenced by honorary artillery fire from six guns from a near-by Hisar hill.

Serbian Military pointed out keeping of peace and security of both our country and each and every of its citizens as its basic task. The Military also showed that it can equally participate in multi-national peace-keeping operations of the United Nations with the highly sophisticated countries of the world.

Yugoimport-SDPR participated in the celebration on the occasion of the Day of Serbian Military by the demonstration of its capital projects - M 84 AB1 tank, modernized BVP M-80 Infantry Fighting Vehicle with 30 mm turret and integrated FCS and CIS, Nora B52 KI-155 mm, Soko- 122 mm and SH-4 105 mm self-propelled howitzers, LAZAR multi-role armored combat vehicle, a family of command and reconaissance vehicles BOV M-11, helicopter armaments, aircraft navigation system (ANS) for Kobac aircraft, 20 mm navy gun, ALAS and LORANA guided missiles, complete VB-10 program for the soldier of the future, PR-15 radar, etc.

## Makiš 2011 - obeležavanje Dana MUP i Dana policije

Dana 15. 06. 2011. Ministarstvo unutrašnjih poslova obeležilo je u Nastavnom centru Makiš Dan MUP i Dan policije.

U okviru pokazne vežbe koju su izvele jedinice MUP Srbije organizovan je tehnički zbor u okviru koga je Jugoimport-SDPR J.P. organizovao izložbu sredstava iz svojih razvojnih i proizvodnih programa. Akcenat je stavljen na sredstva koja se mogu primeniti za potrebe različitih jedinica MUP, koja su po konceptu prilagodljiva izvršavanju zadataka iz oblasti kontrole granica, kontrole i zaštite značajnih objekata i teritorije, protivterorističkim i protivpobunjeničkim dejstava.

### Od prikazanih sredstava izdvajamo:

• Višenamensko oklopno vozilo Lazar sa naglaskom na njegove osnovne karakteristike: mogućnost bezbednog transporta ukrcnog odelenja od 10 pripadnika, zaštita od protivtenkovskih mina i zasednih dejstava streljačkim naoružanjem, vatrena podrška ugrađenim naoružanjem u kritičnim zonama očekivanog dejstva terorista i pobunjenika, kao i mogućnost visoke prohodnosti na svim terenima

• Višenamensko izviđačko-komandno vozilo BOV M-10 naoružano daljiski upravljanom oružanom stanicom sa mitraljezom 12.7 mm.

• Izviđačko vozilo Kurjak opremljeno sa multisenzorskim (optoelektronskim i radarskim)sistemom za osmatranje ugrađenim na podižuću teleskopsku platformu

• Radar PR-15 u prenosnoj varijanti koji omogućava detekciju pešadinca u pokretu na daljinama do 7 km i pešaka u puzećem položaju na daljinama do 3 km

• Projekat VB-10 ( vojnik budućnosti) sa naglaskom na sisteme za upravljanje vatrom i KIS

• Širok spektar uniformi i lične zaštitne opreme,taktčkih i borbenih prsluka itd.

## Makiš 2011 – Marking of the Ministry of Interiror Affairs` Day and the Day of the Police

The Ministry of Interior Affars marked its day and the day of the police at thir Instruction Center in Makiš on May 15, 2011.

The demonstrative exercise carried out by the units of the Ministry of Interior Affairs (MIA) of the Republic of Serbia included technical meeting in which Yugoimport-SDPR took part by organizing an exhibition of the weapon systems included in its development and production programs. The accent was drawn on the weapons which may correspond to the requirements of different MIA units, and the concept of which makes them easily adjustable for carrying out of the tasks of control of state bordes, control and protection of important objects and territories, anti-terorist and anti-riot combats.

### Allow us to draw your attention to the following equipemnt shown on the said occasion, namely:

• LAZAR Multi-role Armored Combat Vehicle the basic characteristics of which include the following: possibility of safe transport of the embarqued sqad of 10 people, protection against anti-tank mines and small arms ambush effect, fire support with built-in armaments in critical zones of expected actions of terrorists and rioters, as well as high cross-country capabilities of the vehicle on all terrains;

• BOV M-10 Multi-role Reconnaissance-Command Vehicle armed with the remotely controlled weapon station containing 12.7 mm machine-gun;

• KURJAK Reconnaissance Vehicle equipped with multi-sensor (optoelectronic and radar) system for observation built on the lifting telescopic platoform;

• PR-15 Radar, mobile, which enables detection of infantry in move at ranges up to 7 km, and crawling infantryman at ranges up to 3 km;

• VB-10 Project (Future Soldier) with specific attention to the fire control systems and BMS (Battlefield Management System);

• Wide range of uniforms and equipment for personal protection, tactical and combat vests, etc.

## Dan Specijalne brigade Vojske Srbije

Pripadnici Specijalne brigade, elitne jedinice Vojske Srbije, obeležili su 29. septembra 2012. dan jedinice, u kasarni "Rastko Nemanjić" u Pančevu.

Specijalna brigada je vrhunski obučena jedinica Vojske Srbije, s tradicijom u protivdiverzantskim, protivterorističkim, izviđačkim, padobranskim i ronilačkim misijama.

Osim u borbenim i neborbenim zadacima, svoje mogućnosti Specijalna brigada pokazala je i učešćem u multinacionalnim misijama UN, a posebno je do izražaja došla sposobnost u pružanju pomoći civilnim vlastima u otklanjanju posledica elementarnih nepogoda.

Na ovoj svečanosti Jugoimport-SDPR J.P. je prikazao deo svog programa namenjenog prvenstveno pripadnicima specijalnih jedinica : Bov M-11 višenamensko oklopno vozilo ,SUV i KIS za nivo pešadijske jedinice kao i sistem lične balističke zaštite iz projekta Vojnik budućnosti VB-10.

## The Day of the Special Brigade of Serbian Military

Members of the Special Brigade, the elite unit of Serbian Military, celebrated the Day of their unit at "Rastko Nemanjić" barracks in Pancevo on September 29, 2012.

The Special Brigade is top-level trained unit of Serbian Military, traditionally specialized in anti-diversionary, anti-terrorist, reconnaissance, parachute and diving.

Besides performing its combat and non-combat tasks, the Special Brigade has demonstrated its possibilities by taking part in multi-national missions of the United Nations, particularly in helping the civil authorities in eliminating of the consequences of natural catastrophes.

Yugoimport-SDPR took part in the celebration of the Day of the Special Brigade of Serbian Military by showing a part of its production program primarily intended for the members of these forces such as Multi-purpose Armored Wheeled Vehicle M-11, Fire Conrol System (FCS) and Command Informative System (CIS) for infantry units, and the sub-system for personal ballistic protection contained in the project called Soldier of the Future VB-10.

# NIKINCI STALNA IZLOŽBA NVO

Jedan od osnovnih elemenata marketinško-promotivnog potencijala Jugoimport-SDPR J.P. je stalna izložba sredstava NVO u Nikincima. Potreba za formiranjem ovakve izložbe proistekla je iz značajnog porasta obima ugovaranja, kao i porasta ukupnog potencijala ponude preduzeća Jugoimport-SDPR J.P., odnosno jugoslovenske odbrambene industrije, karakteristične za drugu polovinu 60-ih godina. Lokacija za formiranje ovakve izložbe odabrana je na osnovu ideje da se ino-partnerima po statičkom prikazu izvrše i odgovarajuće funkcionalne demonstracije, gde je idealnu mogućnost pružao centralni poligon JNA u Nikincima, za ispitivanje sredstava NVO. Izložba je prvobitno formirana u okviru sedam paviljona površine 5500 m2 pokrivenog prostora i predstavljala je istinski ekskluzivan promotivni objekat jugoslovenske odbrambene industrije.

Poslednjih godina na prostoru izložbe i prostoru poligona Nikinci koji se nalazi u sastavu Tehničko-opitnog centra organizovan je niz kompleksnih prezentacija složenih sistema NVO, koje su rezultovale potpisivanjem vitalnih ugovora za naše preduzeće. Mora se naglasiti vrlo tesna saradnja našeg preduzeća sa Tehničko opitnim centrom koja je omogućila izvođenje složenih prezentacija, dinamičkih prikazivanja i ispitivanje sredstava NVO, u saradnji sa preduzećima srpske odbrambene industrije (SOI).

Tako integrisan proces promocije izveden je u vrlo značajnom obimu tokom procesa obeležavanja 55. godišnjice Jugoimport-SDPR J.P. kada je na prostoru poligona Nikinci i stalne izložbe NVO prikazana praktično kompletna ponuda naše kompanije, odnosno SOI sa tehničkim zborom, prezentacijom, kratkom paradom i funkcionalnom demonstracijom sa bojevim gađanjem iz nekih kapitalnih odbrambenih sistema.

# PERMANENT EXHIBITION OF ARMAMENTS AND DEFENSE EQUIPMENT IN NIKINCI

Permanent exhibition of armaments and defense equipment (ADE) in Nikinci represents one of the basic elements of marketing and promotional potential of Yugoimport-SDPR. The necessity for forming of such an exhibition originated from substantial growth of the scope of contracting and overall potential of marketing offer of Yugoimport-SDPR, namely Yugoslav defense industry so characteristical for the second half of the sixth decade of XX century. The location for establishment of permanent ADE exhibition was chosen based on the idea that appropriate functional demonstrations might be organized and carried out for potential foreign buyers after their visit to the permanent exhibition, and the central test range of Yugoslav Peoples` Army (YPA) in Nikinci proved to offer ideal possibilities for testing of ADE. Originally, the exhibition was set in seven pavillions covering the total closed wxhibit area of 5500 m2. It represented truly exclusive promotional structure of Yugoslav defense industry.

Within past several years, a number of complicated presentations of complex defense systems which resulted in signing of vital contracts for our company were organized on the premises of Nikinci test ground qhich nowadays represents a part of the Technical Test Center. We must point out that close colaboration between our company and the Technical Test Center enabled performance of complex presenations, dynamic shows and testing of ADE, in cooperation with the companies of Serbian Defense Industry (SDI).

Such intergated process of significant promotion was performed during official celebration of the fifty-fifth anniversary of Yugoimport-SDPR when practically complete offer of our company and SDI was presented on the premises of permanent exhibition of ADE and the test range in Nikinci, including the technical assembly, short parade and functional demonstration with live firing from several capital defense systems.

# OPREMANJE MINISTARSTVA ODBRANE REPUBLIKE SRBIJE SLOŽENIM BORBENIM SISTEMIMA IZ UVOZA

# EQUIPPING OF THE MINISTRY OF DEFENSE OF THE REPUBLIC OF SERBIA WITH IMPORTED COMPLEX COMBAT SYSTEMS

Treća poslovna misija Jugoimport-SDPR J.P. je opremanje Vojske Srbije (VS) i Ministarstva unutrašnjih poslova (MUP) sredstvima naoružanja i vojne opreme (NVO) iz uvoza.

Uvoz sredstava naoružanja i vojne opreme pre svega je usmeren na složene borbene sisteme, kao i specifičnu visokosofisticiranu opremu, značajnu za sistem odbrane, a čija proizvodnja nije moguća u našoj zemlji, odnosno čije bi osvajanje bilo neizvodljivo ili neracionalno.

Odlukom Vlade Srbije Jugoimport-SDPR J.P. je jedini ovlašćeni uvoznik složenih borbenih sistema.

Poslednjih desetak godina, za potrebe Ministarstvo odbrane i MUP, realizovana je nabavka iz uvoza razne telekomunikacione opreme, ispitno-merne opreme, rezervnih delova i usluga remonta borbenih i neborbenih aviona i helikoptera kao i patrolni čamci.

Na osnovu iskustva iz prethodnih ugovora, Uredba o sredstvima posebne namene (Službeni list RS, br. 82/2008 i 47/2010) omogućila je niz prednosti:

- Direktno ugovaranje sa inoproizvođačima
- Isključenje posrednika
- Obezbeđivanje bankarskih garancija izdatih od strane banaka visokog kreditnog rejtinga
- Garancijom za ozbiljnost ponude selektovanje "ozbiljnih" ponuđača
- Uvedeno plaćanje preko NBS sa računa MO uz minimalne bankarske troškove i rizike
- Potpuna kontrola nad realizacijom uvođenjem akreditiva kao najsigurnijeg instrumenta plaćanja

U poslove uvoza uključeni su i stručnjaci iz Jugoimport SDPR J.P. sa iskustvom merljivim u svetskim razmerama -direktno se time bavi njih 28, što predstavlja značajnu podršku Upravi za snabdevanje.

U okviru realizacije uvoznih poslova preduzeće se fokusira na aktivnosti istraživanja tržišta, organizacije prezentacija vodećih svetskih proizvođača za predstavnike MO i MUP, organizacije sastanaka sa proizvođačima na međunarodnim izložbama NVO, kao i organizacije poseta timova stručnjaka MO i MUP proizvodnim kapacitetima i poligonima proizvođača.

The third business mission of Yugoimport-SDPR is equipping of Serbian Military (SM) and Serbian Ministry of Interior Affairs (MIA) with imported armaments and defense equipment (ADE).

The import of ADE is primarily oriented towards complex combat systems and specific highly sophisticated equipment of vital importance for Serbian defense systems the production of which is not possible in our country, i.e. mastering of such production either would be impossible or not cost-effective.

The decision of the Government of the Republic of Serbia made Yugoimport-SDPR the sole authorized importer of complex combat systems.

Procurement and import of different telecommunication equipment, test and measuring equipment, spare parts and services of overhaul of combat and non-combat aircraft and helicopters, and patrol boats for the requirements of the Ministry of Defense and the Ministry of Interior Affairs of the Republic of Serbia has been completed by Yugoimport-SDPR within past ten years.

The Ordinance on the Special Purpose Equipment (Offical Gazette of the Republic of Serbia Nos. 82/2008 and 47/2010) made on the basis of the experience gained through recent contracts, provided for many advantages such as the following:

- Direct contracting with foreign manufacturers,
- Excluding of intermediaries,
- Providing of bank guarantees issued by the banks with high credit ratings,
- Selecting of "serious" bidders by providing of guarantees for serious offers,
- Introduction of payment through the National Bank of Serbia from the account of the Ministry of Defense applying minimum bank costs and risks, and
- Complete control over the realization of the contract by introducing of Letters of Credit as the safest instrument of payment.

Experts from Yugoimport-SDPR highly experienced in international dealings (28 experts) are directly involved in the said import deals. This represents substantial support to the Department for Supply.

In order to complete import deals, Yugoimport-SDPR focuses on the activities of market research, organizing of presentations of the leading world manufacturers for the representatives of the Ministry of Defense and the Ministry of Interior Affairs of the Republic of Serbia, organizing of meetings with the manufacturers at international ADE fairs, and organizing of the visists of the teams of experts of both above mentioned ministries to the productional capacities and test ranges of particular manufacturers.

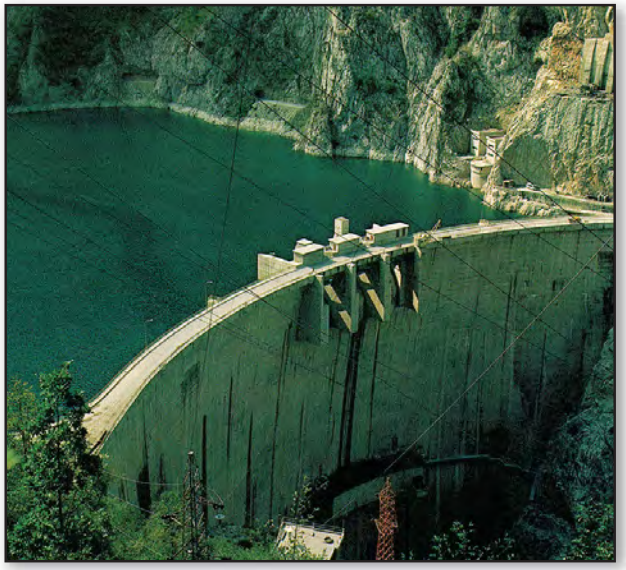
# INŽENJERING ENGINEERING

Transfer odbrambenih tehnologija i izgradnja objekata odbrambene infrastrukture predstavljaju jednu od komercijalno najsloženijih delatnosti Jugoimport-SDPR J.P..

Prvi takav projekat započet je 1964. godine i odnosio se na transfer tehnologije za proizvodnju detonirajućeg štapina u Indiji, a ubrzo je proširen na proizvodnju rudarskih kapsli i detonatora, posle kojih je usledio i ugovor za izgradnju fabrike baruta u Bandari. Period 70-tih i 80-tih godina je vreme snažne ekspanzije projekta transfera tehnologija. Poslovi investicija i vojnog inžinjeringa su u 1975. godini u ukupnoj vrednosti izvoza Jugoimport-SDPR J.P. iznosli 27%, a 1979. godine čak 57,7%. U nuđenju i u realizaciji tih projekata Jugoimport-SDPR J.P. je objedinjavao nastup celokupne industrije tadašnje Jugoslavije. Projekti su obuhvatali izgradnju fabrika i transfer tehnologija za proizvodnju streljačkog oružja – poluautomatske i automatske puške, artiljerijskog oruđa i nišanskih sprava, streljačke municije, baruta, eksploziva i dr.

The transfer of defense technologies and construction of defense infrastructure facilities represent one of commercially most important and, at the same time, most complex field of Yugoimport-SDPR activities.

The first such project was launched in 1964, and included transfer of technology for production of detonating cords in India, and was soon expanded to the production of mining caps and detonator, which resulted in a contract for building a gunpowder factory in Bandara. Vigorous expansion of the transfer of technologies was most prominent in 1970s and 1980s. Early seventies were a period of market research, resulting in the second half of the seventies in the commencement of complex and significant projects. The capital investment and military engineering projects in 1975 accounted for 27% of total export of Yugoimport-SDPR, while in 1979 as much as 57.7%. In offering and implementation of these projects, Yugoimport–SDPR played an important role of an integrator of the entire industry of former Yugoslavia.



Kompleks za proizvodnju baruta i eksploziva za koji je ugovor bio potpisan 1974. godine, a objekat završen 1983. godine je najveće industrijsko postrojenje koje je privreda SFRJ izgradila u inostranstvu. Vrednost ovog projekta tada je bila oko milijardu tadašnjih dolara. Projekti su bili realizovani po principu ključ u ruke.

Od značajnijih aktivnosti izdvajamo isporuku tehničke i tehnološke dokumentacije za projekat hemijskog i mehaničkog kompleksa, za kupca iz Afrike kao i poboljšanje proizvodnje jednobaznih i dvobaznih baruta realizovano na osnovu naše dokumentacije i opreme i transfer tehnologije za municiju 30mm za topove, za kupca iz Azije.

Poslednjih nekoliko godina Jugoimport-SDPR J.P. ponovo intenzivno nastupa i realizuje projekte koji se odnose prvenstveno na transfere tehnologija fabrika eksplozivnih materija i fabrika municije velikih, srednjih i malih kalibara.

The projects included, among other, the transfer of technology and construction of factories for small arms production - semi-automatic and automatic rifles, artillery weapons and sighting devices, small arms ammunition, powders and explosives.

A complex for production of gunpowders and explosives, the contract for which was signed back in 1974 and the facility completed in 1983, is the biggest industrial plant built abroad by Yugoslavia. The value of this project was at that time around one billion dollars.

The projects were implemented on “turnkey” basis, i.e. factory designing, construction of facilities and installations, integration of technological equipment, commissioning of the factory and provision of technical assistance and personnel training.

One of more significant projects was the chemical and mechanical complex within which we supplied to a customer in Africa the technical and technological documentation for production of chemical (gunpowder and explosives)

Obuka kadrova, odnosno transfer znanja za neposredne poslove, vođenja procesa ili upravljanja nekim sredstvom, je faza koja se ne može zaobići, ne samo u transferu tehnologija već i kod isporuke sredstava. Tako je uz isporuku minobacača uspešno izvršen kurs za instruktora za izvođenje obuke na ovim oruđima. Takođe, uz isporuku školskog aviona Lasta 95, izvršena je i obuka tehničara za prvi stepen održavanja, a nedavno je uspešno završena i obuka pilota.

Projektovanje, izgradnja i opremanje objekata odbrambene infrastrukture – podzemnih komandih mesta, vazduhoplovnih, pomorskih i baza za kopnenu vojsku sa pratećom infrakstrukturom, vojnih poligona, remontnih kapaciteta, vojnih bolnica i dr, zauzimali su izuzetno značajno mesto u ukupnoj realizaciji izvoznih poslova.

Reference u ovoj oblasti vrlo su bogate. Između ostalog, projektovano je 15 miliona kvadratnih metara aerodromskih površina, a izgrađeno 200 hektara. Takođe, izgrađeno je 200 000 kvadratnih metara podzemnih objekata visokog nivoa zaštite, milion i po kvadratnih metara hangara, 50 komandnih centara, 400 skloništa i utvrđenih objekta. Projektovane su četiri, a izgrađena jedna kompletna pomorska baza, kao i tri podzemna objekta za podmornice. Projektovano je 7, a izgrađene su tri vojne bolnice.

Može se uočiti da segment transfera znanja sve više dobija na značaju. Prethodnih godina učestvovali smo uspešno u organizaciji školovanja poslediplomaca iz partnerskih zemalja.

and mechanical (weapons and ammunition) ADE products. A customer in Asia has improved his production of single- and double-base powders based on our documentation and equipment. For the same customer we have transferred the technology for 30 mm medium calibre gun ammunition.

In recent years, Yugoimport-SDPR has intensified its presence with the projects related mainly to the transfer of technology for explosive material factories, large-, medium- and small caliber ammunition factories.

Personnel training, i.e. transfer of the know-how for the process control or equipment operation is an unavoidable stage not only in the transfer of technology but also in delivery of equipment. Thus, along with the delivery of mortars, we have successfully completed a training course for instructors for these types of weapons. For the supply of the Lasta 95 training aircraft we have performed a training course for the first level of maintenance, at the level of technicians, and recently a training course for pilots.

It is obvious that technological knowledge is becoming increasingly important. We have also helped organize the post-graduate studies for students from partner countries.

Design, construction and equipping of defense infrastructure facilities – underground command posts, aviation, naval and land army bases with pertaining infrastructure, military test grounds, overhaul facilities, military hospitals, etc. played an important role in the overall implementation of export deals.

There are numerous references in this field. 15 million square meters of airport maneuvering area was designed and 200 ha was constructed. Furhtermore, Yugoimport-SDPR constructed 200 000 m2 of high protection underground facilities, 1.5 million m2 of hangars, 50 command centers, 400 shelters and fortifications… Four naval bases were designed and one entire naval base was constructed, as well as three underground submarine shelters. Seven military hospitals were designed, and three were built.

## Izgradnja vojnomedicinskih ustanova

Poslednjih godina Jugoimport-SDPR J.P. je obnovio svoje mesto u oblasti transfera tehnologija i izgradnji vojnomedicinskih objekata. Jedan od najznačajnijih projekata je i idejno konceptualno rešenje opšte vojne bolnice koje je izrađeno u saradnji sa projektnim timom Uprave za vojno zdravstvo Ministarstva odbrane Republike Srbije.

U projektovanju, izgradnji i opremanju ove moderne bolnice korišćena su višedecenijska iskustva Vojnomedicinske akademije u Beogradu, kao i savremena dostignuća evropske i svetske prakse u ovoj oblasti.

Sam objekat sa svojim sadržajima projektovan je na modularnom principu koji omogućava u budućnosti usvajanje novih tehnologija, opreme i procedura. Predloženo rešenje daje mogućnost optimalnog školovanja kadra kako bi stručnjaci investitora u najkraćem mogućem roku preuzeli upravljanje bolnicom i ostvarivanje svih postavljenih ciljeva.

Koncept opšte vojne bolnice podrazumeva obavljanje svih vrsta medicinskih usluga na jednom mestu, i to od pregleda, preko dijagnostike, do lečenja, uz što racionalnije korišćenje ljudskih i materijalnih resursa.

U okviru bolnice, kao nezavisna celina postoji i školsko-edukativni centar, za permanentno školovanje medicinskog i nemedicinskog osoblja.

Projekat predviđa i školovanje medicinskog i nemedicinskog osoblja na Vojnomedicinskoj akademiji u Beogradu.

## Construction of military medical institutions

In recent years, Yugoimport-SDPR intensified its presence in the field of transfer of technologies and construction of military medical facilities.

One of the most important projects is the preliminary conceptual design of the General Military Hospital, which has been prepared in cooperation with the design team of the Military Healthcare Administration of the Ministry of Defense of the Republic of Serbia.

Several decades of experiences of the Military Medical Academy in Belgrade as well as the modern achievements of the European and international practices in this field, have been used in the design, construction, and equipping of this state-of-the-art hospital.

The actual building with its facilities has been designed on the modular principle, which will enable adoption of new technologies, equipment, and procedures in the future. Likewise, the proposed design offers the possibility for optimal education of the staff in order for the experts of the investor to take over the management of the hospital and attainment of all the set objectives within the shortest possible time.

The concept of the General Military Hospital implies rendering of all types of medical services at one place, specifically ranging from examinations, through diagnostics, to treatment, while as rationally utilizing physical and human resources as possible.

Within the hospital, as an independent entity, there is also the training and educational center for permanent education of medical and non-medical staff.

The project also envisages schooling of medical and non-medical staff at the Military Medical Academy in Belgrade.

# "PMC INŽENJERING"

PMC Inženjering je specijalizovana kompanija za pružanje usluga u oblasti upravljačkog inženjeringa , projektantskih usluga, prometa građevinskim materijalom i proizvodnje betonske armature.

## Istorijat

Preduzeće za upravljanje realizacijom građevinskih projekata i izvođenje investicionih radova osnovano je odlukom upravnog odbora Holding kompanije Jugoimport SDPR J.P. br.2-3 od 29.03.1993. godine pod prvobitno skraćenim nazivom "Jugoimport PMC" d.o.o. Po rešenju Privrednog suda, Beograd, 30.06.2000. godine preduzeće je proširilo delatnost, i dobilo današnji naziv "PMC Inženjering".

Kompanija uspešno posluje skoro 20 godina i sada zapošljava više od 40 visoko obrazovanih i stručnih radnika.

Poznavanje lokalnog tržišta, politike, tradicije i kulture u regiji, dobre poslovne veze, iskustvo na brojnim projektima u sprezi sa specijalističkim znanjem i poznavanjem komparativnih rešenja na svetskom tržištu kao i plodna saradnja sa brojnim institucijama, kompanijama i saradnicima omogućuju nam pružanje najkvalitetnije podrške poslovnim partnerima u ostvarenju njihovih ciljeva.

Vrhunski tim stručnjaka i konsultanata je kroz dve decenije kontinuiranog timskog rada stekao je bogata iskustva i reference.

# "PMC ENGINEERING"

PMC Engineering is a specialized company for rendering services in the field of Project Management, Design services, Transport of construction materials and production of concrete reinforced material.

## Background

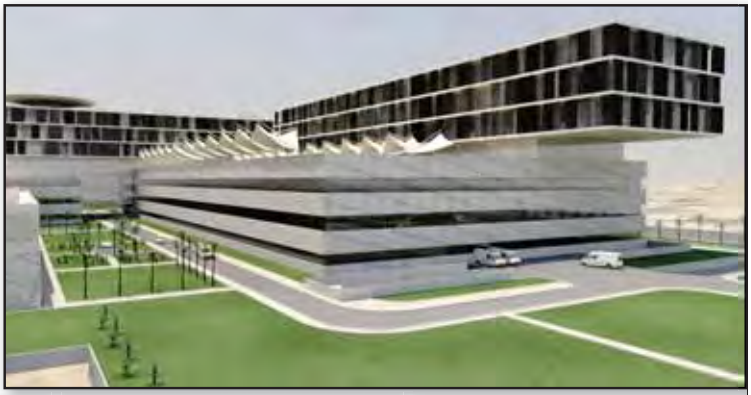
Company for Managing the Execution of Construction Projects and Execution of Investment works was founded by the Decision of Managing Board of Holding Company"Yugoimport SDPR" No. 2-3 as of March 29, 1993 under the first abbreviated name "Yugoimport PMC" Ltd.

Under Decision of the Commercial Court, Belgrade, V Fi No. 6605/00 as of June 30 2000 Company extended the activities, and got its present name "PMC Engineering".

The company has been working successfully for almost 20 years and it now employs more than 40 highly educated and professional employees.

The knowledge of local market, politics, tradition and culture in the region, good business connections, experience in numerous projects in connection to specialized knowledge and knowledge of comparative solutions in the world market as well as fruitful cooperation with numerous institutions, companies and associates have enabled us to render the high quality support to our business partners in accomplishing their goals.

Highly professional team of our experts and consultants has acquired rich experience and references during two decades of continual team work.



# “BELOM” “BELOM”

## Istorijat

Belom d.o.o. je osnovan 20.11.1995. godine. Ime preduzeća predstavlja skraćenicu od BEogradska LOvačka Municija.

Vrhunska oprema kojom raspolaže fabrika omogućava proizvodnju 2,5 miliona metaka godišnje, ili dnevno 10.000 do 15000 metaka različitih kalibara i krupnoće sačme, za različite namene.

U najsavremenijem opitnom tunelu u zemlji, izgrađenom u okviru pogona BELOM, neprestano se kompjuterski proveravaju karakteristike proizvedene municije, kao što su pritisak u cevi, brzina sačme, posip itd..

Najmodernija tehnologija, obučeno ljudstvo i savremena kontrolna oprema, obezbeđuju trostepeni nivo kontrole procesa, čime se ostvaruje konstantan i visok nivo kvaliteta proizvoda.

## Delatnost

Društvo je osnovano za obavljanje poslova:

- Proizvodnja i prodaja oružja i municije
- Trgovina robom dvostruke namene
- Prodaja motornih vozila, motocikala i delova i pribora za vozila i motorcikle
- Trgovina na veliko hemijskim proizvodima, reprodukcionim materijalima i ostalo
- Priređivanje sajmova i usluge reklame i propagande
- Spoljna trgovina neprehrambenim proizvodima ( uvoz i izvoz repromaterijala – barut, kapsle, čaure, sačme, čepovi i dr.)

## History

BELOM ltd. was founded on November 20, 1995. The name of the company represents the abbreviation of BEogradska LOvačka Municija (Belgrade Hunting Ammunition).

The first class equipment possessed by BELOM factory enables the production of 2.5 million cartridges annually, namely the daily production of 10,000 to 15,000 cartridges of different calibers and the sizes of the shot, intended for different purposes.

The characteristics of produced cartridges such as the pressure inside the barrel, the speed of the shot, dissipation, etc., are constantly checked by computer in the most modern test tunnel in our country built on the premises of BELOM factory.

State of the art technology, highly trained personnel and modern control equipment, provide for three-level control of the production process, which enables constant and high level of the quality of produced cartridges.

## Activities

BELOM was founded with the purpose to carry out the following:

- Produce and sell armaments and ammunition;
- Trade in dual-use goods;
- Trade in motor vehicles, motorcycles, parts and accessories for vehicles and motorcycles;
- Wholesale of chemical products, primary materials and other products;
- Organization of fairs, services of advertising and advertising campaigns; and
- Trade in uneatable products (import and export of primary materials, powder, primers, cartridge cases, distance walls, etc.).

# ZAJEDNIČKIM KORACIMA U OSVAJANJE SVETSKG TRŽIŠTA

# JOINT ACTION TO WIN WORLD MARKET

Srpska odbrambena industrija ima tradiciju dugu preko dve stotine godina. Nju danas čine preduzeća, što sa većinskim državnim, što sa većinskim privatnim kapitalom, sa osnovnim tehnologijama iz oblasti metalskog, elektronskog (mikrotalasnog, optoelektronskog) i hemijskog kompleksa.

Jugoimport SDPR J.P., dugi niz godina, svoje marketinške napore i organizacione i finansijske sposobnosti aktivno usmerava na objedinjenom predstavljanju srpske odbrambene industrije, njenih razvojnih i proizvodnih programa. Pored integrisanog nastupa u inostranstvu, naša kompanija uložila je i značajna sredstva u unapređenje poslovnih aktivnosti nekih strateških partnera iz srpske odbrambene industrije.

U okviru procesa revitalizacije i modernizacije srpske odbrambene industrije, prvi put posle dvadeset godina, otvoren je novi pogon fabrike „Krušik“, kovačnica vredna 3,2 miliona evra. U zajedničko preduzeće „Kovački centar“, Jugoimport SDPR J.P. uložio je oko 1,54 miliona evra i stekao 51 odsto vlasništva. Nenovčano ulaganje „Krušika“ procenjeno je na 1,48 miliona evra. U Kovačkom centru zaposleno je više od sto mladih ljudi, među kojima desetak inženjera.

U kovačnici se izrađuju delovi za minobacačku municiju, a planiran je i artiljerijski program. Prvi proizvod raketnog programa „Krušika“ je protivoklopni raketni sistem „Bumbar“.

Otklanja „uska grla“ u proizvodnji minobacačkog, raketnog i artiljerijskog programa fabrika domaće odbrambene proizvodnje. Kovačnica neće raditi samo za odbrambenu, već i za civilnu industriju.

Sa HK Krušik realizovali smo i zajedničko ulaganje u proizvodnju balističkih ploča za zaštitne prsluke.

Sličan tip zajedničkog ulaganja Jugoimport-SDPR J.P. ostvario je i sa kompanijom Milan Blagojević Lučani u domenu proizvodnje sferičnih baruta.

Od posebnog značaja za preduzeće je prodor u vazduhoplovnu industriju od pre nekoliko godina, razvojem, proizvodnjom i plasmanom aviona za osnovnu obuku pilota-LASTA. Posle teškog perioda za vojnu industriju, uspeli smo da reuspostavimo i obnovimo kapacitete vazduhoplovne industrije, zajedno sa partnerima Vojno-tehničkim institutom i Utva-Pančevo. To je jedinstven slučaj u Istočnoj Evropi i širim okvirima da je posle gotovog gašenja tako specifične grane industrije, ona ponovo obnovljena i da je rezultirala uspešnim plasmanom na stranom i domaćem tržištu (20 Lasti je izvezeno za Republiku Irak, a realizuje se i isporuka za Vojsku Republike Srbije).

Serbian defense industry has the tradition of over two hundred years. Today, this industry encompasses the companies with either major state or private ownership; the basic technology lines of the said complex include mechanical engineering, electronics (microwave and optoelectronics) and chemical industrial complexes.

For a long time, Yugoimport-SDPR has actively directed its marketing efforts, organizational possibilities and financial means towards unique presentation of Serbian defense industry, and development and production programs of the same. Besides integrated presence of Serbian defense industry on the world market, our company has also invested substantial means into improvement of business activities of several of its strategic partners from Serbian defense industry.

For the first time after twenty years, the process of revitalization and modernization of Serbian defense industry included opening of a new plant at Krušik factory – blacksmith center worth 3.2 million Euro. Yugoimport-SDPR invested in the said joint venture company called Blacksmith Center approximately 1.54 million Euro, thus obtaining 51% of the ownership of the same. The value of the investment of Krušik in assets was estimated 1.48 million Euro. The Blacksmith Center provided jobs for more than 100 young people out of which ten are engineers.

The Blacksmith Center produces parts for mortar ammunition. Production of parts for artillery ammuinition has also been planned. The first product of Krušik missile program is Bumbar anti-armor missile system.

The Blacksmith Center eliminates bottlenecks in production of mortar, rocket and artillery programs of the factories of Serbian defense industry. The center will work both for defense industry and for civil industry as well.

Yugoimport-SDPR and Krušik have completed joint investment into the production of ballistic plates for bulletproof vests.

Yugoimport-SDPR has completed similar type of joint investment with Milan Blagojević from Lučani for production of ball powders.

Particularly important for Yugoimport-SDPR is the breakthrough the aircraft industry which started several years ago with the development, production and sale of LASTA aircraft for pilot basic training. After difficult period for Serbian defense industry we have succeeded to reestablish and

## Domaća odbrambena industrija ima niz komparativnih prednosti:

• U njenim redovnim proizvodnim programima nalazi se relativno veliki broj proizvoda naoružanja i vojne opreme (NVO) i odgovarajućih komponenata baziranim na NATO standardima, licencama i tehnologijama, kao i proizvoda baziranim na ruskim standardima, sa kojima su familijarni korisnici iz velikog broja nedavno pridruženih NATO zemalja, kao i širi krug korisnika na potencijalnim ciljnim tržištima.

• Značajno iskustvo i realni potencijali u zaokruženom ciklusu samostalnog istraživanja, razvoja, proizvodnje, prodaje i remonta širokog dijapazona sredstava naoružanja i vojne opreme, uključujući i složene oružne sisteme

• Familijarnost sa standardima razvoja i proizvodnje i tehnologijama za proizvodnju naoružanja zapadnog, istočnog i porekla

• Solidne tehnološke mogućnosti, bazirane na tehnologijama i opremi pretežno zapadnog porekla

• Značajno iskustvo i reference u projektima izgradnje objekata odbrambene infrastrukture i prenosu odbrambenih tehnologija

• Značajni istraživačko-razvojni kapaciteti i kvalitetan kadar školovan u zemlji, kao i u tehničko školskim institucijama u zemljama Zapada, pre svega u Engleskoj i Francuskoj

reconstruct the capacities of our aircraft industry, in cooperation with our partners – Military Technical Institute and Utva from Pančevo. It is the question of unique action in Eastern Europe and wider that the industry so specific as aircraft production has been restored after almost complete closing down, and that this successful reestablishment resulted in sale on both international and home market (20 Lasta airplanes were exported to the Republic of Iraq, and the delivery of the same aircraft for Serbian Military is in progress).

## Serbian Defense Industry has many comparative advantages such as the following:

• Regular production programs of Serbian Defense Industry encompass relatively large number of products of armaments and defense equipment (ADE) and corresponding component parts based on NATO standards, licences and technologies, as well as the products based on Russian standards familiar to the users from many countries which recently joined NATO countries, and to the users from our potential target markets;

• Wide experience and realistic potential in closing of the cycluse of independent research, development, production, sale and overhaul of wide range of armaments and defense equipment, including complex weapon systems;

• Familiarity with the standards of development and production and the technologies for the production of weapons of both western and eastern origin;

• Solid technological possibilities based on the technologies and equipment mainly of western origin;

• Substantial experience and references in the projects of civil engineering of defense infrastructure and the transfer of defense technologies; and

• Substantial research and development capacities and highly qualified manpower educated in our country and in the technical educational intitutions in westernt countries, first of all in England and France.

KOMPANIJA Sloboda AD
ČAČAK - SRBIJA

Počeci kompanije "Sloboda" vezuju se za 1948. godinu i za odluku Vlade FNRJ da osnuje kompaniju sa zadatkom da proizvodi naoružanje i vojnu opremu za potrebe oružanih snaga zemlje.

Više od šest decenija bio je sasvim dovoljan period da "Sloboda" postane jedna od najvećih kompanija kompleksa metalne industrije u oblasti proizvodnje naoružanja i vojne opreme.

Fabrika poseduje savremenu proizvodnu opremu, sposobne stručnjake za sve faze proizvodnje, od planiranja do projektovanja, ima veoma dobro opremljene laboratorije i ispitne kapacitete, ali i poslovne veze sa vodećim međunarodnim kompanijama sa sličnom proizvodnjom.

## Proizvodni Program

Proizvodnja naoružanja i vojne opreme (NVO), vojna i tržišna saradnja:

- Proizvodnja i prerada pirotehničkih smeša
- Protiavionska (PA) municija kalibara od 20 do 57 mm
- Avionska municija kalibara 23 i 30 mm
- Ručni bacač raketa kal. 64, 90 i 120 mm
- Municija za automatski bacač raketa, kal. 30 i 40 mm
- Municija kal. 40 mm za bacač kasetnih granata kalibra 40 mm tip GP25 i M203
- Artiljerijska municija, kalibra od 76 do 155 mm
- Upaljači za sve tipove municije obuhvaćene našim proizvodnim programom i za potrebe remonta municje
- Blizinski upaljači za PA i artiljerijsku municiju, kao i vremenski upaljači za artiljerijsku municiju
- Topovske kapisle za municiju iz istog proizvodnog

The beginnings of Company "Sloboda" are connected with the year 1948 and with the decision of the FPRY Government to establish a company with a mission to manufacture armament and defense equipment for the needs of the armed forces.

More then six decades was quite sufficient period to make „Sloboda" one of the major companies of the metal working complex in the field of armament and defense equipment.

The factory has modern production equipment, capable specialist for all phases of production, from planning to design, operate highly equipped laboratories and testing facilities, but also has business ties with leading international companies engaged in similar production.

## Production Programme

Production of armaments and defense (ADE) equipment, military and market cooperation:

- Production and processing of pyrotechnical compounds
- Anti-aircraft (AA) ammunition caliber ranging from 20 to 57mm
- Aircraft ammunitioncaliber 23 and 30 mm
- Hand grenade launcher cal. 64, 90 and 120mm
- Ammunition for automatic grenade launcher, cal. 30 and 40mm
- Ammunition cal. 40mm for cluster grenade launcher cal. 40mm type GP25 and M203
- Artillery ammunition, cal. ranging from 76 up to 155mm
- Fuzes of all types for ammunition encompassed by our production program and for the requirements of ammunition overhaul
- Proximity fuzes for AA and artillery ammunition, and time fuzes for artillery ammunition
- Gun primers for the ammunition of the same production programme, and for the requirements of overhaul of the same
- Signal ammunition cal. 26 and 38mm
- Special ammunition for police
- Practice ammunition
- Overhaul of all ADE encompassed by our production programme

programa,kao i za potrebe remonta iste

- Signalna municija kal. 26 i 38mm
- Specijalna municija za policiju
- Školska municija
- Remont NVO iz našeg proizvodnog programa
- Razne vrste mašinske, termičke i termohemijske obrade

## Razvoj

Planovi „Slobode“ za dalji razvoj vezani su za zahteve Ministarstva odbrane Republike Srbije i za zahteve njegovih inostranih partnera. „Sloboda“ kanališe svoje razvojne kapacitete u dva pravca. Jedan od njih je modernizacija postojećih proizvoda NVO, a drugi je razvoj i proizvodnja potpuno novih proizvoda za srpsko tržište.

Delimično koristeći sopstvene kapacitete, a delimično u saradnji sa Vojno-tehničkim institutom i Jugoimport-SDPR J.P., „Sloboda“ je već počela ili planira da počne sa razvojem i ovladavanjem proizvodnjom novih tipova municije koji ne zaostaju za savremenim svetskim rešenjima.

Lista najvažnijih novih proizvoda sadržana u gore navedenim programima obuhvata sledeće:

- Protivavionsku municiju povećanog dometa, kal. 57mm i 100mm, sa novom generacijom gas generatora
- Artiljerijsku municiju povećanog dometa i efikasnosti, kalibara od 122 mm do 155 mm, sa upuštenim dnom zrna (tip ERFBB) i gas generatorom (tip ER FBBB), različitih tipova
- Univerzalni elektronski vremenski upaljač za artiljerijsku municiju kalibara od 105 mm do 203 mm
- Elektronski blizinski upaljač za PA municiju kalibara od 37 do 100 mm
- Elektronski blizinski upaljač za artiljerijsku municiju kalibara od 105 mm do 203 mm
- Mine sa tandem HE bojevim glavama za bacače granata RBR kalibra 90 mm i 120 mm, kao i vođene protivtenkovske projektile kal. 136 mm
- Protivtenkovski projektil sa tandem HE boje vom glavom za tenkovski top kalibra 125mm
- Različite tipove višenamenskih bojevih glava za RBR bacače granata kalibra 90 mm i 120 mm, (fugasne zasnovane na aerosolnim smešama, za proboj betona, probojne, zapaljive i dr.)


- Various types of mechanical, thermal and thermochemical processing

## Development

The plans of „Sloboda“ for further development are connected to the requirements of the Ministry of Defense of the Republic of Serbia, and to the requirements of its foreign partners. „Sloboda“channels its development capacities in two directions. One of these directions is modernization of existing ADE products, and the other is the development and production of completely new products for Serbian market.

Partly using own capacities, and partly in cooperation with the Military Technical Institute and Yugoimport-SDPR, „Sloboda“ has already started or plan to start the development and mastering of production of new types of ammunition which do not fall behind contemporary world solutions.

The list of the most important new products contained in the above mentioned programs includes the following:

- Anti-aircraft ammunition with increased range, cal. 57mm and 100mm, with new generation base bleed
- Artillery ammunition of increased range and efficiency,caliberranging from 122mm to 155mm, boat tail (type ERFBB) and base bleed (type ERFBBB), different type
- Universal electronic time fuze for artillery ammunitioncaliberranging from 105mm to 203mm
- Electronic proximity fuze for AA ammunitioncaliberranging from 37 to 100mm
- Electronic proximity fuze for artillery ammunitioncaliberranging from 105mm to 203mm
- Shells with tandem HE warheads for RBR grenade launchers cal. 90mm and 120mm, and guided anti-tank guided missiles cal. 136mm
- Anti-tank missile with tandem HE warhead for tank gun cal. 125mm
- Different types of multi-purpose warheads for RBR grenade launchers cal. 90 mm and 120 mm, (high-explosive based on aerosol compounds, concrete piercing, piercing, incendiary, etc.)

# Krušik HOLDING CORPORATION

Holding kompanija “Krušik” a.d. je među najvećim proizvođačima naoružanja u Srbiji sa višedecenijskom tradicijom i priznatim kvalitetom proizvoda. Osnovana je 1939. godine sa glavnim ciljem da razvija i proizvodi vojnu opremu. Glavna aktivnost Kompanije je proizvodnja naoružanja i vojne opreme za upotrebu u kopnenim snagama, protivvazdušnoj odbrani i mornarici. Poslednjih godina i u skladu sa zahtevom za smanjenjem količina određenih tipova naoružanja, Krušik je angažovan na uništavanju različitih tipova raketa kojima je istekao resurs. Krušik ima dugu tradiciju u transferu tehnologije za proizvodnju oružja iz svog proizvodnog programa. Izvestan broj fabrika izgrađenih kao “green field” investicije, rade u mnogim regionima širom sveta, kao i fabrike dodatno opremljene usavršenim tehnologijama. Trećim stranama se nude tehnološki kapaciteti u vidu usluga mašinske obrade strugom, termičke obrade, termo-plastičnog presovanja i brizganja, hemijske i elektrohemijske zaštite i procesa hladnog deformisanja. Krušik je uveo i proizvodnju civilnih proizvoda koji imaju izvesne karakteristike podudarne sa vojnim proizvodima, kao što su protivgradne rakete i lanseri opšte namene i širok spektar električnih detonatora i rudarskih upaljača.

Najbolje prodavan proizvodni program HK ”Krušik” a.d. koji uživa svetsku reputaciju je minobacačka municija. Minobacači i dalje predstavljaju nepobedive, veoma pokretljive oružane sisteme koji mogu da zadaju brze udare indirektnom vatrom.

Holding Company “Krušik” a.d. is among the largest arms manufacturers in Serbia with tradition of many decades and world-recognized quality of its products. It was founded in 1939 with the main purpose to develop and produce defense equipment. Main activity of the Company is production of weapons and defense equipment for use by land forces, air force, air defense and the navy.. In recent years and according to requirement to reduce the quantities of specific types of armament, Krušik has been engaged in destruction of various types of rockets with expired service life. Krušik has long tradition in technology transfers to manufacture arms from their production range. A number of factories, built as “green field” investments, operate in many regions of the world, as well as factories re-equipped for more advanced technologies. Technological capacities are offered to third parties as services in lathe machining, heat treatment, thermo- plastic pressing and injecting, chemical and electrochemical protection and cold deformation processes. Krušik also introduced production of civil application items that share certain characteristics with military products, such as anti-hail rockets and general purpose launchers and extensive range of electric detonators and mining blasting caps.

Best-selling product range of HC”Krušik” a.d. that enjoys worldwide reputation is mortar ammunition. Mortars still represent unbeatable, highly mobile, weapon systems able to inflict rapid strikes by indirect fire.

HK ”Krušik” a.d. proizvodi dve familije minobacačke municije:

- Lake minobacačke mine za kraće domete
- Teške minobacačke mine za povećane domete

Sledeća svojstva izdvajaju minobacačke mine proizvedene od strane HK ”Krušik” a.d.:

- Potpuna sigurnost pri skladištenju, manipulisanju i korišćenju, veoma visoka pouzdanost koja prelazi 98%, odnosno 95% kada su u pitanju mine specijalne namene
- Izuzetna preciznost u pogađanju cilja
- Super brzo dejstvo koje omogućava visoku efikasnost u odnosu na mete

## Upaljači

Upaljač predstavlja glavni element minobacačke mine jer on direktno utiče na bezbednost mine prilikom manipulacije, gađanja i skladištenja. HK ”Krušik” a.d. proizvodi savremene minobacačke upaljače tipa mehaničkih udarnih, standardizovane za sve kalibre. Upaljači se proizvode u dve verzije: sa pojedinačnim dejstvom za manje kalibre i sa odloženim dejstvom za veće kalibre.

Ovi upaljači su bezbedni na 70 m od usta cevi, a imaju i:

- Veoma visoku osetljivost (trenutno dejstvo) pri udaru o prepreku što veoma povećava stvarnu efikasnost na meti
- Vizuelni indikator statusa upaljača koji pokazuje kada je upaljač spreman za korišćenje
- Širok spektar radnih temperatura u opsegu od –53°C do +71°C
- Ručno regulisanje dejstva upaljača (trenutno ili odloženo dejstvo) kod upaljača sa odloženim dejstvom

## Osnovno Poterno Punjenje

HK ”Krušik” a.d. proizvodi kvalitetna osnovna poterna punjenja koja obezbeđuju gađanje minobacačkim minama u svim vremenskim uslovima, čak i gađanje minama koje su bile potopljene u vodu. Osnovna poterna punjenja se mogu koristiti u okviru temperaturnih opsega od - 40°C do+60°.

Kapacitet kovačnice nominalno iznosi 800.000 minobacačkih čaura kalibra 60 mm. Kapaciteti se proširuju i obnavljaju za preradu tvrde plastike (duroplasta) koja se koristi za proizvodnju oklopnih ploča. Tehnologija proizvodnje dimne municije je modernizovana i proširena instaliranjem pogona za punjenje belim fosforom. Pogon ima kapacitet od 60.000 napunjenih dimnih minobacačkih mina kalibra 120 mm.

Kada pominjemo specijalne proizvode, treba naglasiti rezultate intenzivnog razvoja modernizacijom WGAT rakete “Maljutka” uvođenjem tri nove bojeve glave – tandem, termo-barične i glave sa povećanom probojnošću.

Municija za podcevni tromblonski lanser kalibra 40 mm, trajno je modernizovana i proširena novim varijantama. Krušik trenutno uvodi tehnologije za proizvodnju iritirajućih sredstava za specijalne policijske snage, kao i proširenje drugih proizvodnih programa.

HC ”Krušik” a.d. manufactures two families of mortar ammunition:

- Light mortar shells of shorter range
- Heavy mortar shells for extended ranges

Properties that distinguish all mortar shells made by HC ”Krušik” a.d. are:

- Full safety in storing, handling and use, - very high reliability exceeding 98%, or 95%for special purpose shells
- Outstanding target hit precision
- Superquick action that assures high effectiveness against targets

## Fuze

Fuze is the key element of mortar shell since it directly affects shell safety in handling, firing and storing. HK ”Krušik” a.d. produces modern mortar fuzes of mechanical impact type, standardized for all calibers. Fuzes aremade in two versions: single action for smaller calibers, and dual action for larger calibers.

These fuzes possess safety in front of the muzzle of 70 m, as well as:

- Very high sensitivity (superquick action) on impact against obstacle that greatly increases true target effectiveness
- Fuze status visual indicator showing when fuze is ready for use
- Wide operating temperatures range expanding from–53°C to +71°C
- Manual fuze setting (superquick or delayed) on dual action fuzes

## Ignition Cartridge

HC ”Krušik” a.d. manufactures quality ignition cartridges that ensure mortar shell firing in all weather conditions, even firing of shells that were immersed in water. Ignition cartridges are usable within the temperature range from - 40°C to+60°.

The capacity of forging shop is rated at 800,000 shell cases for cal. 60 mm mortar shells. Capacities are expanded and renewed for processing of duroplast, used to manufacture armor plates. Technology of smoke ammunition production is modernized and expanded by installation of white Phosphorus filling plant. Plant has the capacity of 60,000 filled smoke mortar shells cal. 120 mm.

Speaking about specific products, intensive development result with upgrade of the WGAT missile “Malutka” by introduction of three new warheads – tandem, thermo baric and increased penetration types.

Cal. 40 mm sub-barrel grenade launcher ammunition is permanently upgraded and expanded to include new variants. . Krušik is currently introducing technologies for manufacturing of irritants, these will be adopted for application by special police forces and for expansion of other production ranges.

Zastava Oružje predstavlja kolevku srpske industrije. Odlukom donetom 1851. godine Topolivnica je preseljena iz Beograda u Kragujevac, a 1853. godine izlivene su prve topovske cevi. Danas je Zastava Oružje razvila šrok spektar proizvoda koji se izvoze u više od 40 zemalja sveta. Fabrika je u proizvodnji 95% autonomna (samo 5% predstavljaju uvezeni resursi). Zastava Oružje takođe poseduje sertifikate SRPS ISO 9001:2008 i SNO 9000/05.

U poslednje dve decenije Zastava Oružje sledi razvojne trendove u proizvodnji naoružanja i vojne opreme. U svojoj ponudi za tržište veliki naglasak stavlja na nove artikle: familiju automatskih pušaka M21, automatski bacač granata M93 kal. 30 mm, pušku velikog dometa M93 u kalibrima 12,7 x 108 mm i .50, snajpersku pušku M91 kal. 7,62 x 54 mm, potcevni bacač granata kal. 40 m, pešadijski teški mitraljez Kojot M02 kal. 12,7 mm i .50. Familijom EZ pištolja, Zastava Oružje napravila je ozbiljan napredak na američkom tržištu.

## Lovački i sportski program

U razvoju i proizvonji lovačkog i sportskog oružja Zastava Oružje se oduvek nalazila u samom svetskom vrhu zahvaljujući tradicionalno dobrom kvalitetu.

## Opremanje srpskih oružanih snaga

Godine 2008. počelo je uvođenje automatske puške M21 kal. 5,56 mm u Vojsku Srbije. Ova puška treba da zadovolji zahteve specijalnih jedinica za protivterorističke operacije.

Jedan od zahteva bio je mitraljez M87 kalibra 12,7 milimeatra postavljen na adaptiranu platformu vozila Hamer. Zastava Oružje je promptno odgovorila zahtevima mirovnih

Zastava Arms is the cradle of Serbian industry. By a decision rendered in 1851 the Gun Foundry was moved from Belgrade to Kragujevac and in 1853 first cannon barrels were cast.

Today Zastava Arms developed a wide range of products that are exported to over 40 countries in the world. It is 95% autonomous in production (only 5% are imported resources). Also Zastava Arms has SRPS ISO 9001:2008 and SNO 9000/05 certificates.

Zastava Arms during recent two decades follows the development trends in armaments and defense equipment; during recent years, in its offer to the market great emphasis is placed on new articles: the family of M21 automatic rifle, M93 30 mm Automatic Grenade Launcher, M93 Long Range Rifle in calibres 12.7 x 108 mm and .50, M91 Sniper Rifle 7.62 x 54 mm, 40 mm Under Barrel Grenade Launcher, 12.7 mm and .50 M02 Coyote Infantry Heavy Machine Gun. With its family of EZ pistols, Zastava Arms has made a serious advance on the American market

## Hunting and sporting programme

In the development and production of hunting and sporting arms Zastava Arms has always been well positioned on the world market thanks to its traditional quality.

## Equipping of Serbian Armed Forces

In 2008, started introduction of the 5.56-millimetre M21 automatic rifle in the Serbian Army. They should satisfy the requirements of antiterrorist operations.

One of the recquirement was the 12.7-millimetre M87 machinegun placed on an adapted platform of the Hummer vehicle.

snaga Ujedinjenih nacija. Mitraljez M07 HMMWV kal. 12,7 mm (u daljem tekstu M07) zasnovan je na mitraljezu NSV M87 kal. 12,7 mm.

## Razvojni Program Zastava Oružja

Ove godine realizovni su sledeći razvojni zadaci:

- EZ9 Carry

Prema zahtevima američkog tržišta, familije pištolja EZ9 i CZ999 kompletirane su modelom EZ9 Carry

- Poluautomatski karabin PAP kal. 7,62x39 mm

Prateći standarde i zahteve američkog tržišta, AP M70B1 je uspešno konvertovan u poluautomatski karabin sa jednorednim polimerskim magazinom , polimerskim kundakom, polimerskim donjim branikom i košuljicom cilindra. Već su isporučene manje količine konvertovanog karabina, a zahtevi su značajno povećani posle izvršenih isporuka.

- Snajperska puška SP M07 (T07 taktička puška), bazirana na dozazanom Mauzer sistemu, u kalibrima 7,62x51 mm i .300 Win Mag
- Konvertovana puška M21 Simunition
- Lovački karabin LK M808
- U saradnji sa Jugoimport-SDPR J.P. , Zastava Oružje je razvila kolevku i mitraljez za ugradnju na avion
- Modifikacija automatske puške M92
- Pešadijska automatska puška LMG u kalibru 5,56 x 45 mm bazirana na umanjenoj konstrukciji M-84 GPMG
- M02 pešadijski teški mitraljez u kalibru .50

Planovi za naredni period obuhvataju razvoj oružja iz programa zvaničnog ličnog službenog oružja LSO, kao i razvoj nove generacije pištolja sa polimerskim rukohvatom i bacača raketa u NATO kalibru.

Rukovodstvo fabrike očekuje da Zastava Oružje nastavi dalje da se razvija, bolje dimenzionirana, u skladu sa novim pravnim propisima i novim razvojnim projektima.

Zastava Arms were prompt in answering the requirements of the UN piece-keeping forces.The 12.7-millimetre M07 HMMWV machinegun (hereinafter M07), is based on the 12.7-millimetre M87 NSV machinegun.

## Zastava Arms Development Programme

This year the following development tasks were completed:

- EZ9 Carry

As per the requirements of US market, the families of pistols

EZ9 and CZ999 have been completed with model EZ9 Carry.

- Semiautomatic carbine PAP cal. 7.62x39 mm

Following the standards and the requirements of US market, the AP M70B1 was successfully converted into semiautomatic carbine with single row polymer magazine, polymer stock, polymer lower hand-guard and cylinder lining. Smaller quantities of converted carbine have already been delivered and, the requirements have been enlarged substantially after effected deliveries.

- Sniper rifle SP M07 (T07 Tactical rifle), based on well-proven Mauser system incaliber7.62x51 mm and .300 Win Mag.
- Converted rifle M21 Simunition
- Hunting carbine LK M808
- In cooperation with Yugoimport-SDPR, Zastava Arms developed a cradle and machine gun for installation on aircraft
- Modification of M92 automatic rifle
- Infantry assault LMG in caliber 5.56 x 45 mm based on downscaled well-proven M-84 GPMG design
- M02 Infantry HMG in .50caliber

The plans for the forthcoming period include the development of the weapons of LSO official personal weapons program, as well as the development of new generation of pistols with polymer grip and grenade launchers of NATO caliber.

The factory management expects that Zastava Arms will continue to develop upwards, better dimensioned, following new legal provisions and new development projects.

# PPU ·prvi partizan·

Fabrika Prvi partizan, Užice (PPU) proizvodi municiju preko 80 godina, još od svog osnivanja 1928. godine. PPU vrši isporuke srpskoj vojsci i policiji, mnogim inostranim oružanim snagama, a proizvodi i lovačku i sportsku municiju koja se prodaje širom sveta. Proizvodni program preduzeća PPU obuhvata:

- Streljačku municiju
- Sportsku i lovačku municiju
- Pancirno-potkalibarne projektile
- Opremu za proizvodnju municije
- Alate za proizvodnju municije
- Medicinsku opremu
- Druge proizvode
- Inženjering

## Proizvodnja streljačke municije

Glavni elementi proizvodnog programa PPU u oblasti streljačke municije danas obuhvataju municiju NATO standarda u kalibrima 5,56 x 45 mm, 7,62 x 51 mm i 9 x 19 mm.

Proizvodni program ove fabrike takođe obuhvata druge kalibre koje koriste oružane snage, policija i snage bezbednosti:

- Standardna puščana municija ruskog porekla u kalibrima od 7,62 x 39 mm i 7,62 x 54 mm sa različitim vrstama zrna.
- Snajperska municija u kalibru 12,7 x 108 mm, a PPU proizvodi još jednu varijantu ove municije u kalibru 12,7 x 99 mm
- Puščana municija zapadnog porekla čija je upotreba sada ograničena, u kalibrima 7,61 x 63 mm, 7,5 x 55 mm (Švajcarska), 30 M1 karabinska (Britanija)
- Kalibre koji se u poslednje vreme sve više koriste za potrebe specijalnih operacija, 300 Vinčester Magnum i 338 Lapua Magnum

PPU has been producing ammunition for more than 80 years, since 1928, when its founded. PPU has supplied Serbian Army and Police, many foreign Armies and it also produces hunting and sporting ammunition that is being sold all over the world.

Prvi Partizan company produces:

- Small arms ammunition
- Sporting and hunting ammunition
- APFSDS ammunition
- Equipment for ammunition production
- Tools for ammunition production
- Medical equipment
- Other product
- Engineering

## Production of small arms ammunition

The core elements of PPU production program in the field of small arms ammunition today are covering a standard NATO calibres: 5.56 x 45 mm, 7.62 x 51 mm and 9 x 19 mm.

In the production program of the factory there are also other calibres used for the needs of the armed forces, police and security forces:

- Standard rifle ammunition of Russian origin in calibres 7.62 x 39 mm and 7.62 x 54 mm with different types of bullets
- Sniper ammunition incaliber12.7 x 108 mm was completed and PPU is producing another variant of this ammunition incaliber12.7 x 99 mm
- Rifle ammunition of Western origin the use of which is now limited, in calibres 7.62 x 63 mm, 7.5 x 55 mm (Swiss), 30 M1 Carbine, 303 (British)
- Calibres that are lately in greater use for the needs of special operations, 300 Winchester Magnum and 338 Lapua Magnum
- Pistol and revolver ammunition in calibres 7.65 mm, 9 x 17 mm, 9 x 18 mm Makarov, 7.62 x 25 mm Tokarev, 40 Smith & Wesson, 45 Auto, 38 Special, 357 Magnum and others.

## Special ammunition

Mastering the production of a tracing bullet in calibres 5.56 x 45 and 7.62 x 51 mm is in its final stage. Once this project has been completed and these types of ammunition have been acquired, PPU will start, in cooperation with Krušik, the production of bullets that are currently being imported. It will thus complete its offer of small arms ammunition. It is interesting to mention that PPU uses a part

• Pištoljska i revolverska municija u kalibrima 7,65 mm, 9 x 17 mm, 9 x 18 mm Makarov, 7,62 x 25 mm Tokarev, 40 Smit i Veson, 45 Auto, 38 Special, 357 Magnum i drugu.

## Specijalna municija

Osvajanje proizvodnje trasirnog zrna u kalibrima 5,56 x 45 i 7,62 x 51 mm nalazi se u završnoj fazi. Kada ovaj projekat bude završen i bude savladana proizvodnja ovih tipova municije, PPU će započeti, u saradnji sa Krušikom, proizvodnju zrna koja se trenutno uvoze. Time će biti zaokružena ponuda municije za streljačko naoružanje. Zanimljivo je pomenuti da PPU koristi jedan deo kapaciteta namenjenih proizodnji municije kalibra 12,7 mm za proizvodnju i isporuku standarnih čaura kalibra 50 BMG i, kao jedini proizvođač u svetu, čaure 416 Baret za američko tržište.

## Sportska i lovačka municija

Današnji programi sportske i lovačke municije u Prvom Partizanu razvijeni su iz proizvodnje streljačke municije.

Prvi kalibri lovačke municije bili su 8 x 57 IS (7x9 x 57 mm), 7 x 57 (7 mm Mauser), 308 Winchester (7.62 x 51 mm), 30-06 Springfield (7.62 x 63 mm) i drugi. Zahvaljujući ekspanziji izvoznih poslova u period osme i devete dekade prošlog veka, a posebno zahvaljujući veoma uspešnom izvozu u SAD, Prvi Partizan je izrastao u u jednog od najeminentnijih proizvođača sportske i lovačke municije u svetu kada su u pitanju ne samo asortiman i kvalitet municije već i količine municije.

Svake godine fabrika širi asortiman proizvoda i lansira serije novih varijanti postojeće municije, nove tipove zrna i nove kalibre.

Neki posebno interesantni segmenti ovog programa odabrani u skladu sa potrebama klijenata i tržišnim trendovima obuhvataju seledeće proizvode:

• Karabinska municija
• Pištoljska i revolverska municija
• „Match“ municija (precizna municija namenjena takmičenjima)
• Lovačka municija sa „Grom“ zrnom
• Municija zastarelih kalibara
• Manevarska municija i čaure
• PA manevarska municija kal. 9 mm
• Komponente (čaure i zrna)

Posebna pažnja u razvojnim planovima PPU poklanja se „ekološkoj“ municiji kao programu koji daje izuzetne mogućnosti u budućnosti. Za sada je završen razvoj sledećih proizvoda u određenim kalibrima:

• Sinterovana municija sa razgradivim zrnom
• Pištoljska i revolverska municija sa zrnom sa metalnom košuljicom
• Školska municija sa plastičnim zrnom

ammunition, to manufacture and deliver standard cartridge cases incaliber50 BMG, and, as sole manufacturer in the world, of 416 Barrett cartridge case for the American market.

## Sporting and hunting ammunition

Today's program of sporting and hunting ammunition in Prvi Partizan has derived from the production of defense ammunition.

The first hunting calibres were 8 x 57 IS (7x9 x 57 mm), 7 x 57 (7 mm Mauser), 308 Winchester (7.62 x 51 mm), 30-06 Springfield (7.62 x 63 mm) and others. Owing to an expansion of export deals in the period between the eighth and ninth decade of the last century, and especially thanks to a very successful export to the USA, Prvi Partizan grew into one of the most eminent manufacturers of sporting and hunting ammunition in the world, with the assortment and quality of ammunition, but with quantities of ammunition as well.

Each year, the factory is extending the range of products and launches a series of new variants of the existing ammunition, new types of bullet and new calibres.

Some particularly interesting segments of this program, singled out in compliance with clients' needs and market trends consist of the following products:

• Carbine ammunition
• Pistol and revolver ammunition
• „Match“ ammunition (precision ammunition intended for competitions);
• Hunting ammunition with „Grom“ bullets
• Ammunition of obsolete calibres
• Blank ammunition and cartridge cases
• 9 mm PA Blank ammunition
• Components (of cartridge case and bullet)

Particular attention in the development plans of PPU is paid to „ecological“ ammunition, as an extremely promising program for the future. For the time being, the development of the following products has been completed in some calibres:

• Sinter ammunition with degradable bullets
• Pistol and revolver ammunition with Total Metal Jacket bullets
• Practice ammunition with plastic bullets

# - MILAN BLAGOJEVIĆ -
# - NAMENSKA -

Kompaniju „Milan Blagojević – Namenska“ („MB-Namenska“) iz Lučana osnovala je Vlada bivše Jugoslavije 1949. godine.

Sa 1000 zaposlenih, “MILAN BLAGOJEVIC-NAMENSKA” u savremenim objektima proizvodi najkvalitetnije proizvode dobro poznate svetu. Kompanija realizuje 85% poslova namenjenih izvozu i ostvaruje uspešnu saradnju u oblasti izvoza svojih proizvoda i usluga sa preko 30 zemalja širom sveta.

Osnovni proizvodni program obuhvata sledeće proizvode:

- Nitrocelulozu (barut, industrijskog i dinamitskog tipa)
- Barute (jednobazne, dvobazne, raketna goriva)
- Sagorljive komponente
- Celuloid i celuloidne kontejnere

Proizvodni kapacitet fabrike za proizvodnju nitroceluloze zadovoljava potrebe kompanije za proizvodnjom svih tipova baruta. Takođe je značajan izvoz nitroceluloznog baruta, kao i nitroceluloze za proizvodnju boja, lakova i premaza.

Asortiman proizvodnje baruta je kompletan za sve vrste municije od 5, 56 mm do 155 mm.

Jednobazni baruti se proizvode u skladu sa MIL i GSOT standardima za municiju za streljačko naoružanje, pištolje i revolver, avionsku i PA, artiljerijsku, lovačku, sportsku i vežbovnu municiju.

Proizvodnju dvobaznih baruta i raketnih goriva prati proizvodnja nitroglicerina i jake smeše.

MBL ističe tehnologiju proizvodnje barutnih punjenja sferičnim barutima koja se vrši u skladu sa savremenom procedurom do sada poznatom u svetu. Zahtevi svetskog tržišta za posebnim kvalitetima baruta doveli su do razvoja novog i promene postojećeg asortimana proizvoda.

The Company „Milan Blagojević – Namenska“ („MB-Namenska“) from Lučani was founded by former Yugoslavian Government in 1949.

With 1000 employees, “MILAN BLAGOJEVIC-NAMENSKA” in modern facilities produces the products of the highest quality, well known to the world. The Company has 85% of export oriented business and accomplishes a successful cooperation in the field of the export of its products and services, with more than 30 countries around the world

The basic production program consists of the following products:

- Nitrocellulose (powder, industrial and dynamite type)
- Powders (single-base, double-base, rocket fuels)
- Combustible components
- Celluloid and celluloid containers

The production capacity of the plant for nitrocellulose production meets its own requirements for production of all powder types. The export of powder nitrocellulose is also significant as well as nitrocellulose for production of paints, varnishes and coatings.

The assortment of powder production is a complete one, for all kinds of ammunition from 5, 56 mm to 155 mm.

Single-base powders are produced in compliance with MIL and GOST Standards for small arms ammunition, pistol and revolver, aircraft and anti-aircraft, artillery, hunting, sporting and practice ammunition. The production of double-base powders and rocket fuels is accompanied with production of nitroglycerine and wet paste.

MBL emphasizes the technology of production of ball powders, that is carried out according to the up-to-date procedure known in the world so far.


Stoga je, na primer, novi tip jednobaznih baruta – termo stabilog baruta, postao deo redovne proizvodnje i standardne ponude. Takođe, kada je u pitanju program proizvodnje dvobaznog baruta, razvijeni su specijalni EI baruti i balistiti koji se koriste u proizvodnji minobacačkih mina.

Razvoj novih tipova sferičnih baruta konstantno je u toku čime se značajno proširuje asortiman ovog proizvoda. Razvoj nove generacije sagorivih komponenata i čaure za mono blok punjenja trenutno predstavlja deo razvojnog programa.

Stvaranje novih proizvoda, modernizacija postojećih kapaciteta i stalno prisustvo na svetskom tržištu, predstavljaju prioritete poslovne strateguje kompanije. U tom smislu, već dugi niz godina MB – Namenska ostvaruje uspešnu saradnju sa preduzećem Jugotimport-SDPR J.P. u oblasti razvoja, promovisanja i realizacije izvoza svojih proizvoda i usluga. Učestvovanje na svim značajnijim vojnim sajmovima i izložbama širom sveta ostvaruje se u okviru tradicionalnih zajedničkih nastupa.

U saradnji sa preduzećem Jugoimport-SDPR J.P. analiziraju se buduće aktivnosti sa ciljem intenziviranja zajedničkog pristupa svetskom tržištu, posebno kada je u pitanju transfer tehnologije što je ove godine postalo veoma aktuelno.

The requirements of the world market for special qualities of powder have brought about developing of new and modifying of existing assortments. Therefore for example, a new type of single-base powder – thermo-stable powder, has become a part of the regular production and standard offering. Also, from the double-base powder program special EI powders and ballistites that are used for mortar program have been developed.

The development of new types of ball powders is constantly in process which will significantly expand the assortment of this product. The development of a new generation of combustible components and cartridge cases for mono-block charges is a current part of the development program.

Gaining of new products, modernization of existing capacities and constant presence on the world market, are the priorities of the company's business strategy. In that sense, for many years MB – Namenska has already been achieving a successful cooperation with the Company Yugoimport – SDPR in the field of development, promoting and realization of export of its products and services. Participating to all more significant military fairs and exhibitions across the world is achieved over a traditional joint appearance.

In cooperation with Yugoimport – SDPR future activities with an objective of intensifying of joint approach to the world market are analyzed and so especially in the form of technology transfer which in this year has become very current.

Neposredno posle II svetskog rata, 1946. godine, počela je sa radom »Prva Iskra – Namenska proizvodnja a.d.« i u skladu sa odlukama vezanim za odbrambenu industriju preduzeće je otpočelo proizvodnju dinamita (TNT).

## Proizvodni program

### Eksplozivi

- TNT (Trinitrotoluen - TNT), Dinitrotoluen/trinitrotoluen (DNT/TNT), Trinitrotoluen/Dinitrotoluen (TNT/DNT)
- DNT i DNT ulje (Dinitrotoluol (DNT) i DNT-ulje (DNT-30),
- 3,5 Dinitrobenzilska kiselina
- HNS
- Oktogen, HMX (Oktogen (HMX), Flegmatizovan oktogen (HMX/WAX), Oktol (HMX/TNT))
- Heksogen (Heksogen (RDX), Flegmatizovan heksogen (RDX/WAX), Kompozit B (RDX/TNT), Sjajni heksogen (RDX/Grafit)
- Pentrit (Pentrit (PETN), Flegmatizovan pentrit (PETN/WAX), Pentol (PETN/TNT), Pentoks (PETN/TNT)
- Pojačivači (TNT: TNT/RDX, TNT/PETN)
- ANFO-eksplozivi
- Prerada otpadnih voda
- Prerada kiselina

### Delaboracija

- Bio-dizel i izooktil nitrat
- Transfer tehnologije
- Organske i neorganske soli
- Sirovine za farmaceutsku industriju

Just after the WW II in 1946 in accordance with the provisions of the defense industry »Prva Iskra – Namenska proizvodnja a.d.« begun with work. The enterprise started with the production of TNT.

## Production programme

### Explosives

- TNT (Trinitrotoluene (TNT), Dinitrotoluene/trinitrotoluene (DNT/TNT), Trinitrotoluene/Dinitrotoluene (TNT/DNT)
- DNT and DNT oil (Dinitrotoluol (DNT) and DNT-oil (DNT-30),
- 3,5 DINITROBENZOIC ACID
- HNS
- Octogen, HMX (Octogen (HMX), Phlegmatized octogen (HMX/WAX), Octol (HMX/TNT))
- Hexogen (Hexogen (RDX), Phlegmatized hexsogen (RDX/WAX), Compostion B (RDX/TNT), Glazing hexogen (RDX/Graphite))
- Penthrite (Penthrite (PETN), Phlegmatized penthrite (PETN/WAX), Pentol (PETN/TNT), Pentox (PETN/TNT)
- Boosters (TNT: TNT/RDX, TNT/PETN)
- ANFO-explosives
- Waste waters treatment
- Processing acids

### Delaboration

- Bio-diesel and isooctil nitrate
- Technology transfer
- Organic and an organic salts
- Raw materials for pharmaceutical industry




# UTVA PANČEVO

UTVA PANČEVO

UTVA je osnovana 5. juna 1937. godine u Zemunu, osnivanjem „Utva" s.o.j. Kooperativa za jedrilice. U maju 1939. godine „Utva" s.o.j. Kooperativa za jedrilice prerasla je u UTVA a.d. Fabriku aviona udruživanjem sredstava industrijalaca tog vremena.

UTVA Ltd. Avio industrija iz Pančeva prešla je dug put od proizvođača jedrilica do preduzeća koje proizvodi komponente za svemisrku industriju.

Preduzeće je učestvovalo u nekoliko značajnih vazduhoplovnih projekata kao što su: UTVA 56, UTVA 60 P (izvezen u Indiju, Alžir i druge zemlje), UTVA 75 (avion za selekciju i početnu obuku pilota) i dr.

UTVA je takođe intenzivno učestvovala u realizaciji sledećih programa: ORAO i G4.

U relativno kratkom vremenu ovladano je novim programima kao što su: OPTICA-Lovaux (Ujedinjeno kraljevstvo – lake izviđačke letelice), NORMAN-Fieldmaster (Ujedinjeno kraljevstvo – teški poljoprivredni avioni); za ove projekte sve je proizvođeno na lokalnom nivou – od konstruisanja proivodnih i alata za sklapanje, pomoćnih montažnih alata i držača, proizvodnje komponenata, do sklapanja kompletnog aviona.

Po prvi put u svojoj istoriji UTVA je počela proizvodnju za transportnu avijaciju, angažovanjem na projektima novih SSSR projekata TUPOLEV Tu-204 (proizvodnja alata i delova) i ILUSHIN Il-114 (proizvodnja modela i sastavnih delova za testiranja u aerotunelu).

UTVA was founded on June 5, 1937 in Zemun through establishment of „Utva" s.o.j. Glider Cooperative. In March 1939, „Utva" s.o.j. Glider Cooperative grew into UTVA a.d. Aircraft Factory through joining of funds of industrialists of the time.

UTVA Ltd. Aircraft Industry of the town of Pančevo has taken a long road from a glider manufacturer to the company that produces components for the space industry.

During it's long history UTVA was manufacturer or was involved in several significant aircraft projets such as: UTVA 56, UTVA 60 P(exported to India, Algeria and other countries), UTVA 75(aircraft for selection and initial training of pilots) etc.

UTVA also took an intensive part in implementation of the programmes: ORAO and G4.

It was within a rather brief time that new programmes were mastered such as: OPTICA-Lovaux (United Kingdom – Light Reconnaissance Aircraft), NORMAN-Fieldmaster (United Kingdom – Heavy Agricultural Planes); for these projects everything was made locally – starting from designing of manufacturing and assembly tools, jigs and fixtures, manufacture of components, up to assembly of complete aircraft.

For the first time in its history, at that time UTVA commenced production for transportation aviation, engaged in projects for the new USSR projects TUPOLEV Tu-204 (manufacture of tools and parts) and ILUSHIN Il-114

Takođe je dostigla kulminaciju u industriji civilnog vazduhoplovstva; dobila je BOEING-ov kvalitet.

UTVA je dostigla kulminaciju u industriji civilne avijacije; dobila je specifikacije o obezbeđenju BOEING kvaliteta i postal je podugovarač najvećeg svestkog proizvođača putničkih aviona po pitanju proizvodnje alata, delova i sklopova za B737, B757 sa nezamislivim perspektivama.

Vazduhoplovna / Vazduhoplovno-tehnička industrija grupe za civilnu avijaciju

Preduzeće je otpočelo saradnju za ovladavanje GALAXY poslom – mlazni avion za koji je, u početku, UTVA proizvodila proizvodne alate a zatim je nastavila sa proizvodnjom oko 300 stavki za četiri prototipa aviona – do 1400 stavki za masovnu proizvodnju zmaja aviona (među kojima su brojne kritične komponente kao što su: podupirač – nosač podupirača glavnog stajnog trapa, struktura trupa, prozorski ramovi i dr).

Pošto su sertifikovani određeni proizvodni procesi, uspostavljena je saradnja sa delom firme IAI-Bedek koji se bave konverzijom putničkih aviona u kargo avione.

U tom cilju potpisan je sporazum za proizvodnju četiri kompleta delova za ramove za kargo vrata (oko 1500 stavki) za konverziju BOEING B-747-200. Kada je ova saradnja trebalo da se podigne na viši nivo (proizvodnju alata za sklopove i samih sklopova), UTVA je pretrpela najteži udarac u svojoj istoriji – bombardovana je prve noći NATO agresije (zajedno sa vojnim objektima). Samo nekoliko dana pre bombardovanja UTVA je završila modernizaciju, integraciju i fabričko ispitivanje najsloženije avio platforme za naoružanje u istoriji jugoslovenskih vazduhoplovnih snaga: G-4M avion je poleteo 22. marta 1999. godine.

Zahvaljujući iskustvu u radu sa aluminijumom, UTVA je uključena u razvojne programe Ministarstva odbrane (kao što su LVB i NEVA-M1T) kroz proizvodnju komponenata i sklopova.

Program kojije doneo ponovno oživljavanje nekad vodeće fabrike aviona u Srbiji jeste , pre svega, proizvodnja klipnog aviona LASTA 95 namenjenih osnovnoj i prelaznoj obuci zasnovanih na projektu VTI, Žarkovo, a uz značajnu podršku Jugoimport-SDPR. J.P..

(manufacture of models and components for wind-tunnel tests).

Also, it reached the culmination in civil aviation industry; it attained BOEING quality assurance specifications and became a sub-contractor of the world largest manufacturer of passenger airplanes for manufacture of tools, parts and assemblies for B737, B757 with unimaginable perspectives.

Aerospace-Technical Industry Civil Aviation Group.

It started as cooperation in mastering the GALAXY business – jet airplane for which, in the beginning, UTVA manufactured production tools and then went on to manufacturing around 300 items for the four prototype airplanes – up to 1400 items for mass-produced airplane airframes (among which there were numerous critical components, such as: brace-strutmounting of the main landing gear, fuselage frame, window frames, etc.

After certain production processes had been certified, cooperation was established with a part of IAI-Bedek that deals in conversion of passenger planes into cargo ones.

To this aim, an agreement was signed for manufacture of four sets of parts for cargo door frames (approx. 1500 items) for conversion of BOEING B-747-200. When this cooperation was supposed to ascent to a higher level (manufacture of tools for assemblies and the assemblies proper)

UTVA suffered the heaviest blow in its history – it was bombed the first night of NATO aggression (along with military facilities). It was only a couple of days before the bombing that UTVA completed upgrade, integration and factory tests over the most complex weaponry air platform in the history of the Yugoslav Air Force: G-4M aircraft took off on March 22, 1999.

Also, owing to its experience in work with aluminum, UTVA was involved in development programs of the Ministry of Defense (such as LVB and NEVA-M1T) through manufacture of components and assemblies.

The program that brought a revival to the once prominent Aircraft Plant of Serbia was, for certain, manufacture of the two prototypes of LASTA 95 piston aircraft intended for basic and transitional training - based on design of VTI, Žarkovo and important support of Yugoimport-SDPR.

# PRVA PETOLETKA NAMENSKA

PPT- NAMENSKA je osnovana u julu 1972. godine kao deo Fabrike hidraulike i pneumatike “Prva Petoletka Trstenik”. Prvi proizvodi proizvedeni u PPT-NAMENSKA bili su avionski stajni trapovi. Ubrzo posle toga, počela je uspešna proizvodnja mnogih drugih različitih hidrauličnih i pneumatskih komponenata.

PPT- NAMENSKA projektuje, razvija i proizvodi širok spektar hidrauličnih, pneumatskih, servo-kontrolisanih i drugih uređaja za vojno i civilno tržište: avionske stajne trapove, komponente za gorivo, sastavne delove za vazduhoplovstvo, tenkove, artiljerijske sisteme, višecevne lansere raketa, minobacače i dr.

PPT- NAMENSKA nudi usluge remonta – opravke, održavanja i ispitivanja, usluge izrade proizvodnih mašina, kao i usluge površinske zaštite i termičke obrade.

*Civilni program*- obuhvata hidrauliku (pumpe, klipove, ventile, servo ventile) i linije za pakovanje tečnosti (mašine za oblikovanje duvanjem, mašine za oblikovanje ubrizgavanjem, mašine za etiketiranje, mašine za punjenje, mašine za zatvaranje, mašine za pakovanje, zavrtnje za mašine za pakovanje tečnosti).

*Vojni program*- Inženjering za KOV, vazduhoplovstvo i mornaricu PPT- NAMENSKA projektuje, razvija i proizvodi širok spektar hidrauličnih, pneumatskih, servo-kontrolisanih i drugih komponenata za vojno tržište. Ovi uređaji ugrađeni su u sledeće:

- Avione Orao, Jastreb, Galeb G-2 i Super Galeb G-4
- Tenkove T55, T72 I M84AB1
- Vojna vozila
- Minobacače 60mm, 82mm i 120mm
- Brodove

Glavni proizvodi su stajni trapovi za avione, servo aktuatori, komponente za hidrauliku, pneumatiku i sisteme za gorivo (hidraulični pokretni ispitni stolovi, hidraulične dizalice, pumpe za gorivo, elektro-pneumatski ventili i dr.).

# PRVA PETOLETKA NAMENSKA

PPT- NAMENSKA was founded in July 1972. as a part of Hydraulics And Pneumatics Factory “Prva Petoletka Trstenik”. The first products made in PPT-NAMENSKA were aircraft landing gears. Soon after that, the successful production of many other different hydraulic and pneumatic components started.

PPT- NAMENSKA designs, develops and produces a wide range of hydraulic, pneumatic, servo-controled and other devices for military and civil market: aircraft landing gears, fuel components, aerospace system components, tanks, artillery systems, multiple rocket launchers, mortars, etc.

PPT- NAMENSKA offers overhaul - repair, maintenance and testing services, Manufacturing Machinery services and Surface Protection and Heat Treatment services.

Civil programme includes hydraulics (Pumps , Cylinders, Valves , Servo-Valves) and liquid packaging lines ( Blow Molding Machines, Injection Moulding Machines , Labeling Machines ,Filling Machines , Capping Machines, Packers, Screwes For Liquid Packaging Machines )

Military programme- Defense, Aerospace and Marine Engineering. PPT- NAMENSKA designs, develops and produces a wide range of hydraulic, pneumatic, servo-controlled and other components for military market. These devices are incorporated in:

- Aircrafts Orao, Jastreb, Galeb G-2 and Super Galeb G-4
- Tanks T55, T72 and M84AB1
- Military vehicles
- Mortars 60mm, 82mm and 120mm
- Ships

The main products are aircraft landing gears, servo - actuators, hydraulic, pneumatic and fuel components (hydraulic mobile test benches, hydraulic jacks, fuel pumps, electro-pneumatic valves etc.)

EDePRO Ltd.
Engine Development & Production

Temelji ove kompanije položeni su pre više od dvadeset godina, kada je osnovana Laboratorija za mlazni pogon 1985. godine u okviru Mašinskog fakulteta Univerziteta u Beogradu. Kompanija EdePro (Engine Development and Production) danas je regionalni lider po pitanju rešenja za mlazne sisteme za rakete, rakete na mlazni pogon i proizvodnja energetskih materijala.

EdePro je angažovan na istraživanju, razvoju, proizvodnji i trgovini novom, modernizaciji postojeće municije i vojne opreme, kao i na primeni savremenih tehničkih rešenja u odbrani od olujnog grada i drugim civilnim programima.

## Proizvodi

Artiljerijske rakete: R107 mm; R122 mm G-2000/G-M; R267 mm

- Artiljerijska municija povećanog dometa:105 mm i 155 mm
- Protivgradne Rakete
- Motor za rakete vazduh-vazduh
- Turbomlazni motori
- Raketni motori na tečno gorivo

## Razvojni Programi

ALAS- predstavlja veoma ubojni usavršeni laki borbeni sistem zamišljen kao „ispali i zaboravi“ i „ispali, osmatraj i ažuriraj“ višenamenski, oružni sistem sa TV navođenjem. Raketni sistem ALAS namenjen je prvenstveno protivtenkovskoj i protivbrodskoj borbi i bombardovanju zemaljskih ciljeva. Može se lansirati sa lakih terenskih vozila, malih brodova ili helikoptera, koristeći vezu putem optičkih provodnika za emitovanje i prijem komandi. Važna primena bila bi izvršenje „hirurških udara“ dok jače snage ne budu dostupne.

- Svojim dometom ALAS bi trebalo da proširi ubojnu zonu u bliskoj borbi sa 5 na 15 km, pa i na 25 km sa prve borbene linije.

- Projektil sa raketnim pogonom i gasogeneratorom kalibra 155 mm – projektil HE RA/BB 155mm predstavlja projektil sa raketnim pogonom sa gasogeneratorom koji povećava operativni domet većine haubica 39, 45 i 52 kalibra 155 mm za +10 km u zavisnosti od vrste topa i korišćenog punjenja.

The foundations of the Company were laid more than twenty years ago, when the Laboratory for Jet Propulsion was founded in 1985. at the Faculty of Mechanical Engineering at the University of Belgrade. Company EDePro (Engine Development and Production) is today regional leader in propulsion systems solutions for solid rockets, turbo jet powered missiles and production of energetic materials.

EDePro is engaged in the research, development, production, and trade in the new, and modernization of the existing munitions and defense equipment, as well as in the application of high-tech solutions in hailstorm defense, as well as in other civilian applications.

## Products

- Artillery Rockets :R107 mm; R122 mm G-2000/G-M; R267 mm
- Artillery Base Bleed Units:105 mm and 155 mm
- Anti-Hail Rockets
- Air to Air Rocket Motor
- Turbojet Engines
- Liquid Propellant Rocket Motor

## Developing Programs

ALAS- Highly lethal Advanced Light Attack System represents highly lethal Advanced Light Attack System imagined as “fire & forget” and “fire, observe and update”, multipurpose, TV guided weapon system. ALAS missile system is intended primarily for an anti-tank, anti-ship combat and land attack bombardment missions. It can be launched from light land vehicles, small ships or helicopters, utilizing a fiber optic data link to transmit and receive commands. Important application would be to conduct surgical strikes until heavier forces are available.

- Using its range it should extend the ALAS close-combat kill zone from 5 to 15 km and up to 25km from the first combat line.

- Rocket Assisted/Base Bleed Projectile for 155mm caliber- HE RA/BB 155mm projectile is a rocket-assisted base bleed projectile that will extend the operational range of most 39, 45 and 52 caliber 155mm gun howitzers by +10 km, depending on the gun and charge used.

# 1889 TRAYAL KORPORACIJA A.D.

Kompanija je osnovana još 1889. godine, kada je osnovana Barutana. Danas je to moderna fabrika sa savremenim sistemom za upravljanje kvalitetom (ISO 9001 SERTIFIKAT ZA ZAŠTITNA SREDSTVA) definisanim ciljevima i precizno definisanom poslovnom politikom Fabrike.

Proizvodni program:
Gume
Proizvodi od gume
Zaštitna sredstva:
- Gas maske i respiratori
- Policijska palica
- Filteri
- Zaštitne kapuljače
- Zaštitni šlemovi
- Zaštita za ruke
- Zaštita za telo
- Aktivni ugalj

## Ekplozivi:

- Barutni eksplozivi
- Anfo eksplozivne mešavine
- Eksplozivi koji se koriste pod vodom
- Eksplozivi za rudarstvo (majdanit)
- Emulzije
- Detonirajući štapin
- Univerzalni sigurnosni upaljač
- Liveni pojačivači
- Dozvoljeni eksplozivi

Pirotehnika

The foundations of the Company were laid back in in 1889, when the Gunpowder Works was founded.Today it is a modern factory with accomplished system of quality management (ISO 9001 PROTECTIVE DEVICES CERTICIFATE) defined aims and precisely deffined policy of the Factory.

Production programme:
Tyres
Rubber goods
Protective devices:
- Gas Masks and Respirators
- Police Baton
- Filters
- Protective hoods
- Protective helmets
- Hand protection
- Body protection
- Activated carbon

## Explosives:

- Powdered explosives
- Anfo explosive mixtures
- Waterplastic explosives
- Waterplastic slurry explosives
- Emulsions
- Detonating cord
- Universal safety fuse
- Cast boosters
- Permited explosives

Pyrotechnics

# FAP Korporacija a.d. Priboj

FAP korporacja je osnovana 1953. godine predstavljanjem njenog prvog terenskog vozila po pribavljanju licence za proizvodnju pod brendom Saurer – Werke. Danas je FAP najveći proizvođač kamiona i autobusa u Srbiji.

## Proizvodni program:

- Kamioni (kamioni, traktori, kiperi, specijalna vozila - neborbena)
- Autobusi i šasije
- Prikolice (jednosovinske, dvosovinske i troosovinske prikolice, poluprikolice)
- Oprema za specijalne karoserije (podizači kontejnera, mešalice za beton, cisterne za vodu, specijalne karoserije koje se koriste za transport tovnih životinja, kamioni za sakupljanje i odvoženje đubreta sa pločama presama, kombi vozila, specijalne karoserije koje se koriste za transport rastresitog tereta i dr.)
- Agregati

## Tehnološke mogućnosti:

- Postrojenje za mašinsku obradu
- Postrojenje za presovanje
- Linija za sklapanje
- Alatnica
- Postrojenje za održavanje
- Kontrola kvaliteta i ispitivanje

FAP corporation was founded in 1953 with introducing its first heavy duty vehicles upon acquisition of license to produce under Saurer - Werke brand. Today, FAP is the biggest producer of trucks and buses in Serbia.

## Production Programme:

- Trucks (Torries, Tractors, Dump trucks, Special vehicles-noncombat)
- Busses and Chassies
- Trailers (Single,double and triple axle trailers, semi-trailers)
- Special Body Equipment (Container lifts, Concrete mixers, Water tankers, Spec. body used at cattle-breeding transportation, Waste collectors with pressure plates, Vans, Spec. body used at transportation of bulk cargo etc.)
- Aggregates

## Technological feasibilities of :

- Machining plant
- Pressing plant
- Assembli line
- Tooling plant
- Maintenance plant
- Quality control and testing

Ei Opek a.d. Niš

Preduzeće Ei-Opek a.d. iz Niša je deoničarsko društvo angaživano na istraživanju, razvoju i proizvodnji optoelektronskih komponenata i opreme. Firma je osnovana 15. juna 1991. godine u okviru fabrike "Ei- Mikroelektronika" sa zadatkom da preduzme razvoj i proizvodnju optoelektronskih senzora za primenu u namenskoj proizvodnji.

## Proizvodni program:

Glavne aktivnosti Ei-Opek mogu se podeliti na komercijalne i programe namenske proizvodnje. U okviru programa namenske proizvodnje Ei-Opek je razvio i proizvodi sledeće:

- Detektor kumulativnog mlaza DKM M-2000 (detektor je ugrađen u tenkove M-84 i T-71 i služi za brzo otkrivanje kumulativnog mlaza unutar tenka kao sastavni deo sistema samozaštite)
- Elektronski temprini upaljači za ariljerijske granate projektovani za različite vrste artiljerijske municije (kumulativnu, osvetljavajuću, dimnu, vežbovnu i kasetnu) u kalibrima od 105 – 155 mm

Spektar namenskih proizvoda takođe obuhvata sledeće:

- Artiljerijski pribor za upravljanje vatrom PUV M56;
- Senzor minimalnog pritiska SMIP-M1 konstruisan da signalizira minimalni pritisak u boci
- Ručni indikator pritiska RMIPM1, konstruisan da pretvara naponski signal senzora u numeričku vrednost i da prezentira njegovu vrednost u digitalnoj formi
- Detektor vibracije DV-1 koji se koristi za zaštitu prostora i zgrada (zaštita granica, zaštita vojnih postorojenja i dr.) i za istraživanje tla
- Foto otpornike, končanice i modulatore

Enterprise Ei-Opek a.d. of Niš is a shareholding company engaged in research, development and production of optoelectronic components and equipment. The firm was founded on June 15, 1991 within the "Ei- Mikroelektronika" factory to undertake development and manufacture of optoelectronic sensors for military applications.

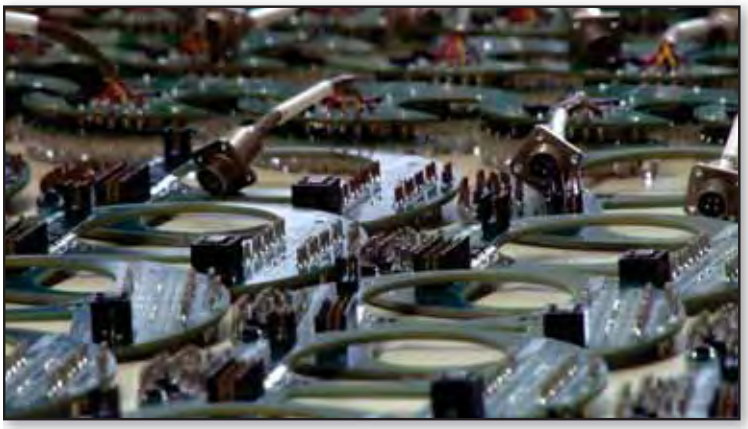
## Manufacturing programme:

Main operations of Ei-Opek may be divided to commercial and defense manufacturing programs. Within the defense production program Ei-Opek has developed and produces the following:

- Shaped charge jet detector DKM M-2000 (detector is fitted in M-84 and T-71 tanks and serves for rapid detection of shaped charge jet within the tank as component of the tank self defense system
- Electronic time fuzes for artillery shells which are designed for different types of artillery ammunition (high explosive, illuminating, smoke, practice and cassette) in the calibers of 105 – 155 mm

The defense products range also includes the following:

- Artillery fire control set PUV M56
- Minimum pressure sensor SMIP-M1 designed to signal minimum pressure inside the bottle
- Hand-held pressure indicator RMIPM1, designed to convert voltage signal from sensor to numerical value and to present that value in digital form
- Vibrations detector DV-1 used for protection of areas and buildings (border protection, protection of military installations, etc.) and for soil research
- Photo resistors, reticles and modulators



# SENZOR INFIZ D.O.O. BEOGRAD

SENZOR INFIZ D.O.O. BEOGRAD

Preduzeće SENZOR INFIZ d.o.o. osnovano je 1994. godine izdvajanjem Senzorske laboratorije iz nacionalnog Instituta za fiziku Srbije, čime je Institut za fiziku postao većinski vlasnik novoosnovanog preduzeća.

Jedan od prvih proizvoda (iz 1990. godine) bio je meteo senzor za SUV za tenk M-84. Njegova prva razvijena verzija bio je senzor sa jednom osom (MS-2), posle koga je usledio uređaj sa dve ose (MS-2d). Oba meteo senzora mere temperature vazduha i atmosferski pritisak, s tom razlikom što uređaj sa jednom osom meri samo bočne komponente vetra, dok model sa dvostrukom osom meri i brzinu i pravac vetra. Početkom ove dekade oba senzora su digitalizovana, pa se njihovi izlazni signali sada dobijaju u formatu RS-485. Pored primene u tenkovima, ovi meteo senzori se mogu koristiti na drugim borbenim vozilima.

Još jedan važan konačni proizvod predstavlja ručni laserski daljinomer mernog dometa do 20 km. Preduzeće takođe proizvodi podsistem laserskog daljinomera za SUV za tenk M-84AB1.

Pored toga, SENZOR INFIZ proizvodi laserske markere u vidljivom i nevidljivom spektru, kao i uređaj kombinovanog tipa.

U toku je stalni razvoj snajperskog nišana sa ugrađenim laserskim daljinomerom i balističkim računarom. Po odabiru mete i merenju njene udaljenosti, na osnovu balističkih podataka koji su ranije uneti za predmetno oružje i tip municije, balistički računar proračunava putanju projektila i generiše tačku nišanjenja u končanici nišana čime se obezbeđuje pozitivan pogodak.

The enterprise SENZOR INFIZ d.o.o. was founded in 1994 by separation of the Sensors Laboratory from the national Institute of Physics of Serbia, whereby the Institute of Physics has remained majority owner of the new entity.

One of the first products (in 1990) was the meteo sensor for M-84 tank FCS. Its first developed version was the single-axis sensor (MS-2), followed by two-axis unit (MS-2d). Both meteo sensors measure air temperature and atmospheric pressure, the difference being hat single-axis version measures only wind lateral components, while the two-axis model measures both wind velocity and wind direction. Early in this decade both sensors have been digitalized and their output signals are now in format RS-485. In addition to application on tanks, these meteo sensors can be used on other combat vehicles.

Another important final product is the hand-held laser range finder, with measuriing range up to 20 km. This enterprise also produces laser range finder subsystem for M-84AB1 tank FCS.

In addition, SENZOR INFIZ manufactures laser markers in visible and in invisible spectrum, as well as combined type.

Constant development is under way of sniper sight incorporating laser range finder and ballistic computer. After target selection and measuring of its distance, based on ballistic data entered beforehand for subject weapon and ammunition type, ballistic computer calculates projectile trajectory and generates sighting point in reticle of the sight, thus ensuring positive hit.

# MTT – INFIZ

MTT – INFIZ

Kompanija MTT-INFIZ osnovana je 1991. godine uz podršku Instituta za fiziku.

Od osnivanja MTT-INFIZ radi na projektovanju, remontu, redizajnu i opravci sofisticiranih vojnih i civilnih sistema.

Kompanija je tehnološki i kadrovski osposobljena za rešavanje složenih zadataka iz polja energetske elektronike, analogne i digitalne elektronike, laserske tehnike, mašinstva, meteorologije i edukacije.

## Program :

- Remont, servis i održavanje radarskih sistema
- Digitalni radarski pokazivač DiNovo Terminal
- Konzola Komandno informacionog sistema
- Modernizacija raketnih sistema i radarskih sistema serije P
- Meteorološki radari, Meteorologija
- Učila
- Servis-proizvodnja medicinske opreme
- Servis industrijske elektronike
- Remont, servis i održavanje radarskog sistema AN-TPS 70
- Remont, servis i održavanje radarskog sistema AN-TPS 63
- Digitalni radarski pokazivač DiNovo Terminal
- Konzola Komandno informacionog sistema
- Modernizacija raketnih sistema i radarskih sistema serije P

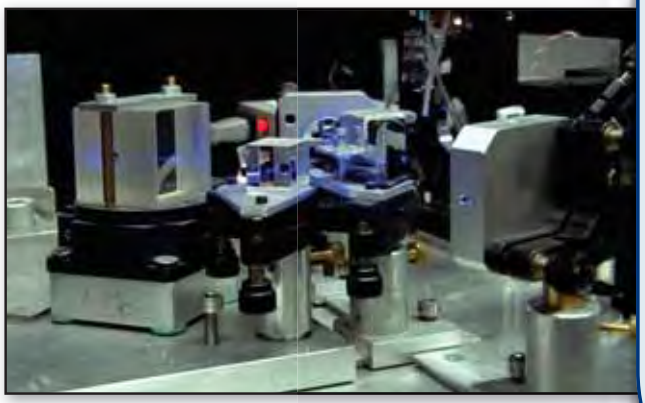
MTT INFIZ - a company specializing in high technology was established 1991 supported by the Institute of Physics, a scientific institution and a part of the University of Belgrade.

From it's conception MTT-INFIZ has worked on applications from its knowledge and potential in the field of high technology and science.

MTT INFIZ has specialists in power, digital and analogue electronics, pulsed power laser devices, microwave, mechanical engineering, chemical engineering, glass blowing and manufacture of glass based special devices, light detection, night and thermo vision, optical devices, image processing, software development, meteorology and education.

## Programme:

- Overhaul, maintenance, upgrading and service of radar systems
- Digital radar PPI DiNovo Terminal
- PPI and Command console
- Modification – Modernization of missile systems
- Meteorological radars, Weather stations
- Teaching Aids
- Servising-production of the medical equipment
- Industrial electronic service
- Overhaul, maintenance, upgrading and service of radar system AN-TPS 70
- Overhaul, maintenance, upgrading and service of radar system AN-TPS 63
- Digital radar sensor DiNovo Terminal
- Battle managment system console
- Modification – Modernization of missile systems series P



# ZASTAVA KAMIONI

Proizvodnja privrednih vozila u "Zastavi" počela je 1939. godine, pred Drugi svetski rat, kada je proizvedeno 400 kamiona firme CHEVROLET za potrebe jugoslovenske vojske. Montažom 162 terenska vozila marke Willys, od 1953. godine, pa do današnjih dana, razvijala se proizvodnja privrednih vozila.

Ugovorima o transferu tehnologije i industrijske kooperacije sa IVECO-m iz 1985. i 1988. godine proširuje se program privrednih vozila gamom "S" i modelima 30.8, 35.8 i 40.8 gamom "Z" i modelima 50.9, 65.9, 65.12, 79.12, 79.14 i 109.14 i orijentacijom proizvodnje za potrebe IVECO-vih trzista.

Glavne delatnosti preduzeća su:

- Proizvodnja teretnih - specijalnih vozila ukupne mase od 2,5 do 11 tona;
- Proizvodnja komponenti, delova i pribora za privredna vozila
- Istraživačko-razvojne delatnosti u oblasti konstrukcije i tehnologije u okviru sopstvene istraživačko-razvojne jedinice.

Preduzeće ZASTAVA KAMIONI d.o.o. 24. oktobra 2001. godine sertifikovano je prema standardu kvaliteta JUS-ISO 9001.

Struktura tehnoloških kapaciteta:

- Montaža vozila
- Montaža specijalnih vozila i nadgradnji
- Presovanje
- Zavarivanje kabina, školjki i podsklopova
- Površinska zaštita lakiranjem
- Proizvodnja delova mahaničkom i termičkom obradom

Production of the commercial vehicles in "ZASTAVA" started in period before the Second World War when 400 trucks of the company "CHEVROLET" were produced for the needs of former Yugoslav army. From 1953, when 162 off-road vehicles with the trademark "Willys" were produced and up to now, production of the commercial vehicles has been developed.

With the Contract on "KNOW HOW" and Contract on industrial cooperation with IVECO, dated 1985 and 1988, commercial vehicles range is expanded to Gamma "S" and models 30.8;35.8; and 40.8 Gamma "Z" and models 50.9;65.9;65.12;79.12;79.14 and 109.14 and production orientation for the IVECO's markets needs.

The activity of the company:

- Production of the trucks-special vehicles of the total weight 2,5-11t
- Production of the components, parts and accessories for the commercial vehicles
- Researching- development activities in the field of the construction and technology, in a frame of the own researching Unit

"ZASTAVA KAMIONI"d.o.o. was certified according to the quality norm JUS ISO 9001.

Structure of the technological capacities:

- Assembly of the vehicles
- Assembly of the special vehicles and bodies
- Pressing
- Welding of the cabs, bodies and sub-assemblies
- Surface protection with lacquering
- Production of the parts with mechanical and heat treatment

# TELEOPTIK – ŽIROSKOPI BEOGRAD

TELEOPTIK – ŽIROSKOPI BEOGRAD

Fabrika "TELEOPTIK" osnovana je 22. aprila 1922. godine pod imenom "Prva jugoslovenska fabrika za telefoniju, optiku i preciznu mehaniku" sa sedištem u Beogradu.

Osnovni proizvodni program fabrike obuhvata sledeće:
- Avionske i helikopterske instrumente
- Opremu za navođenje i kontrolu raketnih sistema
- Instrumente i opremu za borbena oklopna vozila
- Specijalnu mernu i ispitnu opremu
- Žiroskope i žiroskopske uređaje

## Usluge

Generalni remont, remont i opravka instrumenata i svih proizvoda iz proizvodnog programa fabrike za potrebe Vojske Srbije i druge.

## Laboratorijske usluge

Laboratorija za sertifikaciju obuhvata Centralnu laboratoriju, ovlašćenu Metrološku laboratoriju i Optičku laboratoriju.

Centralna laboratorija obuhvata sledeće specijalne laboratorije:
- Fizičku laboratoriju
- Mehaničku i metaluršku laboratoriju
- Hemijsku laboratoriju
- Elektro-magnetnu laboratoriju

The "TELEOPTIK" factory was founded on April 22, 1922 under the name of "The First Yugoslav Factory for Telephony, Optics and Precision Mechanics" domiciled in Belgrade .

The basic production program of the factory includes the following:
- Aircraft and helicopter instruments
- Equipment for guidance and control of rocket systems,
- Instruments and equipment for combat armored vehicles
- Special measuring and test equipment
- Gyro and gyroscopic units

## Services

General overhaul, overhaul and repair of instruments and all products included in the production program of the factory for the requirements of Serbian Army and others.

## Laboratory Services

The laboratory for certification encompasses the Central Laboratory, authorized Metrological Laboratory and Optical Laboratory.

The Central Laboratory includes the following special laboratories, namely:
- Physical laboratory,Mechanical and Metallurgic laboratory, Chemical laboratory
- Electro-magnetic laboratory.

*TELEOPTIK je učestvovao u sledećim projektima:*

- Avioni: Galeb G-2, Jastreb, Galeb G-4, Orao J-22, Utva 75, Utva "Lasta", Kobac
- Tenk M-84, M-84AB1
- Helikopter "Gazela"
- Sistemi za navođenje i kontrolu PA vođenih raketa (IC glave za navođenje S-2M i S-10M)
- Sistemi i kontrole za protivtenkovske vođene rakete
- Pilotska oprema za kiseonik
- Oprema za regulaciju pritiska i klimatizaciju pilotske kabine
- Pribor motora i sastavni delovi instalacije za gorivo
- Oprema za avionsko svetlo i kabinsko svetlo

*Najznačajniji proizvodi:*

- Glava za IC navođenje
- Žiro blok za sistem za upravljanje vatrom (SUV) za tenkove M-84, M-84A i M-84AB1
- Autopilot za programiranu raketnu metu PRM-200
- Servo sistem za vođene rakete
- Barometar za regulator goriva (BRG), po licenci Rols-Rojsa
- Avionski instrumenti (kabinski)
- Oprema za klimatizaciju i regulaciju pritiska u pilotskoj kabini, po licenci SEMCA
- Ručni kompas
- Optički nišani za opremanje modela vojnika za XXI vek
- Rotaciona platforma za merenje koordinata leta
- Slobodni žiroskop za raketu "BUMBAR"
- Prigušivači za različite tipove pušaka i pištolja

Jedan od poslednjih projekata koji je rezultat saradnje preduzeća "Teleoptik-Žiroskopi" i Jugoimport-SDPR J.P. jeste sistem za upravljanje vatrom (SUV) za borbena vozila i helikoptere poslednje generacije.

*TELEOPTIK took participation in the following projects:*

- Aircrafts: Galeb G-2, Jastreb, Galeb G-4, Orao J-22, Utva 75, Utva "Lasta", Kobac
- Tank M-84, M-84AB1
- Helicopter "Gazelle"
- Systems of guidance and control of AA guided missiles (IC homing heads S-2M and S-10M)
- Systems and controls for anti-tank guided missiles
- Oxygen equipment for pilots
- Equipment for pressurization and conditioning of the pilot's cockpit
- Engine accessories and component parts for fuel installation
- The equipment for aircraft lighting and cabin light

*The most important products:*

- IR Homing Head
- Gyro block for the fire control system (FCS) forM-84, M-84A and M-84AB1 tanks
- Autopilot for programmed missile target PRM-200
- Servo system for guided missiles
- Barometer fuel regulator (BRG), Rolls-Royce license
- Airborne instruments (cabin)
- Equipment for conditioning and pressurization of the pilot's cockpit, SEMCA license
- Hand-held compass
- Optical sights for equipping of the soldier following XXI century model
- Rotating platform for flight coordinate measurement
- Free gyro for "BUMBAR" rocket
- Shot Silencers for different types of rifles and pistols

One of the latest projects that cames as the result of the cooperation between "Teleoptik-Žiroskopi" and Yugoimport-SDPR is the fire control system (FCS) for combat vehicles and helicopters of the latest generation.

# IMTEL KOMUNIKACIJE

IMTEL KOMUNIKACIJE

Osnovana je ranih 70-ih kao grupa za primenjenu fiziku. 1976. godine Grupa je pretvorena u Institut za primenjenu fiziku.

Tokom 80-tih preko 20 značajnih mikrotalasnih i DSP projekata za Vojsku.

U ranim 90-im Institut za primjenjenu fiziku postao je Institut za Mikrotalsnu tehniku i elektroniku - IMTEL Institut. Tokom 90-ih glavne aktivnosti su razvoj i istraživanje i proizvodnja DRRS i mikrotalasnih sistema do 75 GHz.

2006. godine IMTEL Institut je postao IMTEL Komunikacije A.D.

## Program:

- Digitalni Radio Relejni sistemi (DRRS)
- Sistemi antena
- Sistemi za napajanje
- Oprema za testiranje
- Sistemi daljinskog nadzora
- Sistemi posebne namene

Founded in the early 70s as Group for Applied Physics 1976. The Group was transformed into Institute of Applied Physics.

During the 80's over 20 significant microwave and DSP based projects for Yugoslav Army Forces.

In the early 90's the Institute of Applied Physics became Institute of Microwave Techniques and Electronics - IMTEL Institute. During the 90's main activities in R&D and production of DRRS and microwave systems operating up to 75 GHz

2006. IMTEL Institute became IMTEL Komunikacije A.D.

## Programs:

- Digital Radio Relay Systems (DRRS)
- Antenna systems
- Power supply systems
- Test equipment
- Remote monitoring systems
- Special purpose systems

# INSTITUT „MIHAJLO PUPIN“

Institut „Mihajlo Pupin“ osnovan je 1946. godine u Beogradu.

Naučno-istraživački profil Instituta ''Mihajlo Pupin'' čini sinteza naučnog i ekspertskog znanja u širokom spektru oblasti kao što su: elektronika, automatika, procesno upravljanje, računarstvo, telekomunikacije, digitalna obrada signala, informacioni sistemi, softversko inženjerstvo i robotika.

Ponuda Insituta "Mihajlo Pupin" obuhvata brojna rešenja u domenu informaciono – komunikacionih tehnologija među kojima se ističu sledeći proizvodni programi:

- Upravljanje procesima – DCS i SCADA sistemi (hardver i softver), optimizovani za velike i geografski rasprostranjene sisteme u elektroprivredi, vodoprivredi i sl, kao i sistemi za kontrolu i upravljanje u procesnoj industriji
- Zaštita informacija – Kripto uređaji, rešenja za zaštitu komunikacija u telefonskim i radio mrežama
- Telekomunikacije – Oprema za prenos podataka po vodovima visokog napona; Uređaji za obradu i snimanje govora; VF komunikacije; Dizajn telekomunikacionih mreža
- Komponente za selekciju i stabilizaciju frekvencije – za standardne industrijske i specifične namene, uključujući kristalne jedinke, kristalne oscilatore, kristalne filtre i magnetne materijale
- Simulatori i trenažeri
  - Simulatori leta za tri tipa vojih aviona
  - Trenažer za obuku posade podmornica
  - Taktička učionica za „ratne igre“
  - Familija tenkovskih trenažera
  - Protiv oklopni artiljerijski taktički trenažer

U periodu 1980.-1991.g., realizovano je 15 tipova simulatora i trenažera (ukupno je proizvedeno preko 60 tipova svih simulatora). Za potrebe simulatora leta, u periodu 1980.-1983.g. razvijen je crno-beli vizuelni sistem (za noćno poletanje-sletanje) sa računarski generisanom slikom (CGI – Computer Generated Image") a 1986. godine zaokružen je i razvoj vizuelnog sistema u boji.

Simulator aviona, a posebno CGI vizuelni sistemi, svrstavaju Institut "Mihajlo Pupin", a time i Srbiju, u red veoma malog broja zemalja koje su u stanju da razvijaju i proizvode ovakve sisteme, a veći broj simulatora aviona i tenka je urađen i za izvoz.

# INSTITUTE „MIHAJLO PUPIN“

Mihajlo Pupin institute was founded in 1946 in Belgrade.

R&D Profile of Institute Mihailo Pupin represents synthesis of scientific and expert knowledge in the broad area: electronics, automation, process control, computers, telecommunications, digital signal processing, information systems, software engineering and robotics.

IMP is offering a spectrum of ICT solutions in the following product programs:

- Process Control Program – Digital Control Systems (DCS) and SCADA systems (hardware & software) optimized for large and geographically distributed utility systems, control and monitoring solutions for process industries
- Security Program – crypto devices, solutions for securing telecommunication links over telephony and radio networks
- Telecommunications Program – Power Line Carrier equipment, communication solution for safe and efficient operation of high-voltage power networks Modem communications, Speech processing and recording equipment, Telecommunications network design
- Frequency Control Products – Industry-standard and custom frequency control products, including Quartz Crystal Units, Crystal Oscillators, Crystal Filters and Magnetic materials.
- Simulators and training aids:
  - Flight simulators for three types of military aircraft
  - Submarine Crew Trainer
  - Air War Gaming Simulator
  - Family of Tank Driver Trainers
  - Anti-Armor Artillery tactical Trainer

Between 1980 and 1991 fifteen types of simulators and training aids were realized (more than 60 units of all types of simulators were produced). In the period 1980-1983, for the purpose of flight simulator development, black and white visual system was developed with computer-generated images (CGI) for night take off and landing and in 1986 the development of the color visual system was completed.

Flight simulators, especially the CGI visual systems put Institute Mihailo Pupin, and also Serbia, among the few countries that were able to develop and produce such systems, and the number of flight and tank driving simulators were made for export .

# PUPIN TELECOM

PUPIN TELECOM

Fabrika Pupin je osnovana 1947. godine u zgradi tadašnje remontne PTT radionice na Voždovcu .

Pupin Telecom je kompanija koja se bavi projektovanjem, razvojem, proizvodnjom, instalacijom i puštanjem u rad telekomunikacionih uređaja i jedan je od glavnih snabdevača telekomunikacionom opremom operatora, internet servis provajdera i preduzeća u Srbiji i regionu.

## Proizvodi

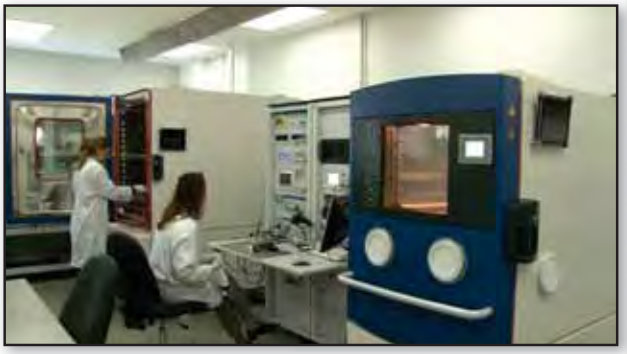
- Telefonski digitalni javni sistemi
- Digitalni i analogni sistemi za prenos po bakarnim i optičkim kablovima
- Radio uređaji za prenos
- Sistemi za prenos i komutaciju podataka
- Pristupne mreže
- Terminalna oprema
- Biznis sistemi
- Pribor
- Inžinjering poslovi
- Vojne komunikacije/mobilni sistemi
- Uređaji za regulaciju saobraćaja

Factory Pupin is founded in 1947. year, in remount PTT workshop in Voždovac-Belgrade.

Pupin Telecom is a company which is designing, developing, producing, installing and putting in operation telecommunication equipment and is one of the main suppliers with telecommunication systems of operators, ISPs, enterprises in Serbia and the region.

## Products

- Digital telephone public systems
- Digital and anlog systems for transmission over coper and optic cables
- Equipment for radio transmission
- Systems for data transmission and switching
- Access networks
- Terminal equipment
- Business systems
- Accessories
- Engineering works
- Military electronics /mobil systems
- Equipment for traffic regulation




# VOJNOTEHNIČKI INSTITUT (VTI)

# MILITARY TECHNICAL INSTITUTE (MTI)

VOJNOTEHNIČKI INSTITUT (VTI) je najveća vojna ustanova i sastavni je deo Ministarstva odbrane Republike Srbije.

Akreditovan je kod Ministarstva za nauku i tehnološki razvoj kao naučno- istraživačka institucija Republike Srbije.

Integralni je deo Univerziteta odbrane, zajedno sa Vojnom akademijom i Vojnomedicinskom akademijom.

Budžetska je institucija, u potpunom vlasništvu Republike Srbije.

Razvoj naoružanja i vojne opreme (NVO), kao proizvoda visoke tehnologije, glavni je cilj delovanja VTI. Cilj je do sada uspešno ostvarivan, jer je u operativnu upotrebu Vojske Srbije usvojeno preko 1300 sredstava NVO.

Pri tome, osvojene su brojne nove tehnologije, mnogi savremeni materijali i nove metode ispitivanja.

MILITARY TECHNICAL INSTITUTE (MTI) is the greatest military research and development institution and it is internal part of Ministry of Defence of the Republic of Serbia. It is certificated at Ministry of Science and Technological Development as scientific and research institution of Republic of Serbia.

MTI is integral part of Defence University together with Military Academy and Military Medical Academy.

The activities of Military Technical Institute are primarily focused on development of weaponry and military equipment as high technology products. This objective is successfully accomplished so far, since over 1300 weaponry and military equipment products, developed in the MTI, entered the operational use in the Army of the Republic of Serbia.

Numerous new technologies, state-of-the-art materials and modern testing methods have also been conquered with time.

## Istorija

Pitanje sopstvenog razvoja sredstava naoružanja u Srbiji se postavljalo uvek. Kao odgovor na to pitanje, nakon Drugog svetskog rata, nastao je Vojnotehnički institut.

Nakon oslobađanja zemlje jedno od prioritetnih opredeljenja bilo je opremanje, razvoj i modernizacija vojske oslonca na sopstvene snage. Iz tih razloga je 3. novembra 1948. godine formiran Vojnotehnički institut Jugoslovenske armije.

Prolazeći kroz različite oblike organizacionih, kadrovskih i naučno-stručnih promena, VTI više od šest decenija gradi svoj identitet, ne samo u Srbiji nego i u inostranstvu.

U početku se radilo sa skromnim stručnim i minimalnim laboratorijskim mogućnostima. U trenutku formiranja u VTI je radilo samo tridesetak stručnjaka.

Vremenom u institutu se beleži napredak u razvoju. Uvode se nove naučne metode u rešavanju naučnoistraživačkih i razvojnih zadataka, a delatnost se proširuje na mnogobrojne naučne discipline.

Sedamdesete i osamdesete godine 20. veka pamte se kao zlatni period, kada su nastali avioni (GALEB, ORAO i SUPER GALEB) novi tenk M-84, sistemi višecevnih lansera raketa (PLAMEN, OGANj, ORKAN) i druga savremena sredstva naoružanja i vojne opreme.

Vojnotehnički institut je do danas razvio i u operativnu upotrebu Vojske Srbije uveo oko 1300 sredstava NVO. Na taj način je doprineo da opremljenost naše vojske oružjem i opremom domaćeg porekla bude preko 75%.

## History

The development of proper weaponry products has always been an issue in Serbia. As a solution, the Military Technical Institute (MTI) was established after WWII.

After the liberation of the country one of the priorities was equipping, development and modernization of the Army by relying on domestic capabilities. For these reasons, on November 3, 1948, the Military Technical Institute of Yugoslav Army was established.

By going through various forms of organizational, personnel and scientific-professional modifications for more than six decades the MTI has been building its identity not only in Serbia but also in abroad.

At first the Institute operated with modest professional and minimal laboratory capacities. At the time of forming, only around 30 experts worked at the MTI. During the time the Institute recorded progress. New scientific methods in solving scientific-research and development assignments were introduced, and the activities were broadened to numerous scientific disciplines.

Seventies and eighties of the XX century are remembered as the golden age when airplanes (GALEB, ORAO and SUPER GALEB), new tank M-84, multi-launch rocket systems (PLAMEN, OGANJ, ORKAN) were created.

The Military Technical Institute has so far developed and included into operational use of the Army about 1300 weaponry and military equipment products. In this way it contributed to the fact 75% of our Army's equipment consisted of domestic weaponry.

## VTI danas

VTI zapošljava nekoliko desetina lica sa najvišim naučnim i nastavnim zvanjima. 80% zaposlenih VTI-a čini istraživački kadar.

Laboratorijski kapaciteti VTI su stvarani preko 60 godina. Danas VTI raspolaže sa 22 savremene laboratorije. Neke od njih su od međunarodnog značaja, neke su jedinstvene na području Balkana, a većina prevazilazi vojni značaj, pa se mogu smatrati nacionalnim resursom Republike Srbije.

## MTI today

MTI employs few tenth persons with the highest scientific and teaching titles. 80% of employees are research stuff.

The Laboratory potentials of the MTI have been created for 60 years. Today, the MTI has at its disposal 22 modern laboratories. Some of them are of international importance, some are unique in Balkan region and most of them exceed military importance and can be regarded as a national resource of the Republic of Serbia.

## Laboratorije:

- Aerodinamička laboratorija
- Laboratorija za HIL simulaciju
- Laboratorija za inercijalne senzore i sisteme
- Laboratorija za goriva i maziva
- Laboratorija za tekstil, kožu i obuću
- Laboratorija za vođenje raketa
- Laboratorija za energetske materijale
- Laboratorija za elektroenergetiku
- Laboratorija za akustiku, hidroakustiku i senzore
- Laboratorija za hemijsko-nuklearnu zaštitu
- Laboratorija za konstrukcione i tehničke materijale
- Laboratorija za optoelektroniku
- Laboratorija za raketne motore na čvrsto gorivo
- Laboratorija za podsisteme vozila
- Laboratorija za servosisteme
- Metrološka laboratorija
- Laboratorija za eksperimentalnu modalnu analizu, analizu vibracija

## Laboratorys:

- Experimental aerodynamics laboratory
- Hardware in the loop (HIL) laboratory
- Laboratory for inertial sensors and systems
- Laboratory for fuels and lubricants testing
- Laboratory for examination of textile leather and footwear
- Missile guidance laboratory
- Laboratory for energetic materials
- Laboratory for electric power devices
- Laboratory for acoustics, hydroacoustics and sensors
- Laboratory for chemical- nuclear protection
- Structural and technical materials laboratory
- Laboratory for optics and optoelectronics
- Solid propelant rocket motor laboratory
- Vehicle subsystems laboratory
- Servo systems laboratory
- Metrological laboratory
- Laboratory for experimental modal analysis, vibration analysis

- Laboratorija za eksperimentalnu čvrstoću
- Laboratorija za elektromagnetsku kompatibilnost i antenska merenja
- Laboratorija za telekomunikacione i računarske mreže
- Laboratorija za radio i radio relejne sisteme i uređaje

## Aerodinamička laboratorija

Osnovni zadatak aerodinamičke laboratorije je eksperimentalna podrška istraživanjima i razvoju u fazi projektovanja aviona, raketa i projektila. Laboratorija ima pet aerotunela i radionicu za projektovanje i izradu modela.

Aerotuneli su opremljeni modernom instrumentacijom, koja omogućava različita aerotunelska ispitivanja i merenja statičkih i dinamičkih karakteristika modela.

Radionica u svojim kapacitetima ima CAD/CAM sisteme i CNC strugove i glodalice.

U aerotunelima se ispituju modeli vazduhoplovnih i nevazduhoplovnih objekata.

- Experimental strength laboratory
- Laboratory for electromagnetic compatibility and antenna measurements
- Laboratory for telecommunication and computer networks
- Laboratory for radio and radio-relay equipment and systems

## Experimental aerodynamics laboratory

Main task of the Experimental Aerodynamics Laboratory is experimental support of research and development during the design phase of aircraft and missile projects. It consists of five wind tunnels and a high precision model workshop.

The wind tunnels are equipped with modern instrumentation, enabling various tests and measurements of static and dynamic model characteristics.

Workshop facilities are equipped with CAD/CAM systems and CNC lathe and milling machines.

Wind tunnels are used for testing models of aeronautical and non-aeronautical objects.

Tipična ispitivanja su:
- Merenje sila i momenata
- Merenje raspodele pritisaka
- Merenje dinamičkih derivativa stabilnosti
- Ispitivanje strujnog polja
- Vizualizacija strujanja
- Merenje minimalnog otpora
- Merenja na velikom napadnom uglu
- Merenja sa podvesnim teretima
- Ispitivanje uticaja tla

Najvažnija postrojenja u okviru aerodinamičke laboratorije su:
- Veliki podzvučni aerotunel T-35

Aerotunel je kontinulanog dejstva i zatvorenog tipa sa osmougaonim radnim delom 3.2 × 4.4m za ispitivanja u opsegu Mahovih brojeva od 0.1 do 0.5 i Rejnoldsovih brojeva do 12 miliona/m. Pogon aerotunela čine ventilator sa promenljivim uglom lopatica i četiri AC motora maksimalne snage 7.2 MW.
- Trisonični aerotunel T-38

Aerotunel je prekidnog dejstva sa nadpritiskom i kvadratnim radnim delom dimenzija 1.5 × 1.5 m. Pogonski vazduh se skladišti u rezervoarima visokog pritisak pomoću petostepenog kompresora snage 4MW. Ispitivanja u aerotunelu T-38 moguća su u tri opsega brzina subsoničnom, transoničnom i supersoničnom u intervalu Mahovih brojeva od 0.2 do 4 i velikih Rejnoldsovih brojeva do 140 miliona/m

## Laboratorija za HIL (hardware in the loop) simulaciju

Specijalizovana je za poslove istraživanja i razvoja u oblastima simulacije sistema vođenja i upravljanja sa realnim hardverom, akviziciju i procesiranja signala.

Unutar Laboratorije instaliran je petoosni simulator leta rakete i cilja S-450R-5 sa sistemima za: merenje, akviziciju i procesiranje signala (BURR-BROWN, DATA TRANSLATION i NATIONAL INSTRUMENTS).

Typical tests are:
- Forces and moments measurements
- Pressure distribution measurements
- Dynamic stability derivatives measurements
- Flow field testing
- Flow visualization
- Minimum drag measurements
- High angle of attack measurements
- Store loads measurements
- Ground effect testing.

The most important wind tunnels are:
- The T-35 large subsonic wind tunnel

The T-35 is a continuous, closed circuit type wind tunnel with 4.4 m × 3.2 m test sections, Mach number range of 0.1 to 0.5, and Reynolds number range of up to 12 millions/m. It is driven by a variable pitch fan, powered by four AC motors with a maximum power of 7.2 MW.
- The T-38 trisonic wind tunnel

The T-38 is a blowdown, intermittent type wind tunnel with 1.5 m × 1.5 m rectangular test sections. It is driven by air stored in high-pressure tanks by a five-stage 4 MW compressor. The T-38 wind tunnel enables testing in three speed ranges subsonic, transonic and supersonic. It has Mach number range of 0.2 to 4.0 and high Reynolds number range of up to 140 millions/m.

## Hardware in the loop (HIL) laboratory

Is specialized for HIL simulation of missile guidance and control systems, with real hardware, data acquisition, and signal processing.

The Laboratory is equipped with S-450R-5 five-axis missile and target flight motion simulator, as well as measurement, data acquisition and signal processing systems (NATIONAL INSTRUMENTS, DATA TRANSLATION and BURR BROWN).

Prateću opremu uz petoosni simulator leta rakete i cilja sačinjavaju: kontrolna konzola, pogonska hidraulična jedinica i instalacija vazduha za rad pod visokim pritiskom.

HIL simulacija omogućava razvoj pogodnih načina testiranja i evaluacije prototipova hardvera sistema vođenja i upravljanja raketom u zatvorenoj simulacionoj petlji.

Simulacija kretanja rakete po visini, pravcu i valjanju je obezbeđena upravljanjem po tri ose.

Spoljašnje dve ose simulatora leta odrađuju azimut i elevaciju simuliranog translatornog kretanja cilja.

Mogućnosti ispitivanja

Laboratorija za HIL simulaciju može da ponudi naručiocima:

- Identifikaciju parametara sistema vođenja i upravljanja raketa
- Ispitivanje komponenata sistema vođenja i upravljanja,
- Posebne HIL simulacione metode za sisteme vođenja i upravljanja raketa
- Izradu softvera za off-line i HIL simulacione metode itd.

## Laboratorija za inercijalne senzore i sisteme

Glavni deo laboratorije je ''bela soba'' klase čistoće ≤ISO class8, prema ISO 14644-1 sa kompletnom električnom opremom i opremom specijalne namene.

Osnovna i specifična oprema u beloj sobi su dvoosni ispitni sto, jednoosni ispitni sto i bela kabina.

Dvoosni ispitni sto je model T-922 proizvođača Carco Electronics,USA. Sastoji se od konzole koja sadrži deo za napajanje i elektronski deo i samog stola sa tačnim senzorima i moćnim momentnim motorima. Postoje dva režima rada: Brzinski za unutrašnju osu i pozicioni za obe ose. Opseg ugaonih brzina je od 0.0001°/s do 999°/s a opseg pozicije je 360° sa tačnošću 0.0001°.

Jednoosni ispitni sto je namenjen za testiranje glava za samonavođenje.

Bela kabina je odvojen prostor sa višom klasom čistoće. Njena namena je da spreči uticaj i prodor nečistoća prilikom sklapanja delova u podsisteme i sisteme.

U narednom periodu VTI će se i dalje baviti svojom primarnom delatnošću - istraživanjem i razvojem u oblasti odbrambenih tehnologija.

HIL simulation enables development of appropriate testing and evaluation methods of guidance and control systems simulation in closed loop.

Yaw, pitch and roll motions of a missile are realized by the inner three axis of the simulator.

The outer two axes of the flight simulator provide the azimuth and elevation of translational motions of the target.

Testing capabilities

The Hardware-In-the-Loop Laboratory can offer to a customer:

- Identification of missile guidance and control systems parameters
- Testing of missile guidance and control systems components
- Special HIL simulation methods for missile guidance and control systems
- Design of the software for off-line and HIL simulation methods, etc.

## Laboratory for inertial sensors and systems

The main part of the Laboratory is a ''clean room'', class ≤ISO class 8, according to ISO 14644-1 with complete electrical and special purpose equipment.

The main and specific components in the clean room are the two-axis test table, single-axis test table and clean cabin.

The two-axis test table is of T-922 type, manufactured by Carco Electronics,USA. It consists of a console part with power supplies and electronics and the table itself with accurate sensors and powerful torquers. It has two working modes: rate for inner axis and position for both axes. The angular rate range is from 0.0001°/s to 999°/s and the position range is 360° with the accuracy of 0.0001°.

The single-axis test table is for homing heads testing.

The clean cabin is an enclosed space with a higher degree of cleanliness. It serves to avoid impurities while assembling precise parts in subsystems and systems.

In following period, the MTI will continue with its basic activity - research and development in the field of defence technologies.

Pri realizaciji svojih aktivnosti, VTI u potpunosti primenjuje sistem menadžmenta kvalitetom prema zahtevima standarda SRPS ISO 9001 i SRPS ISO/IEC 17025.

While realizing its activities the MTI fulfils Quality Management System in accordance to SRPS ISO 9001 and SRPS ISO/IEC 17025 standards.

# TEKUĆI PROJEKTI

## Avion «Lasta»

Avion «Lasta» je namenjen za selekciju, početnu i osnovnu obuku pilota sa elementima: figurnog, grupnog, instrumentalnog, navigacijskog, osnovnog noćnog i instrumentalnog letenja kategorije I. Takođe je namenjen za obuku u osnovnim elementima gađanja, raketiranja i bombardovanja.

# CURRENT PROJECTS

## Aircraft «Lasta»

The Aircraft «Lasta» is designed for flight familiarization, evaluation of flying ability, pilot primary and basic training, primary instructions, acrobatics, formation flying, navigation, instrument and night flying. It can perform basic training in gunnery, rocket firing and bombing, also.

## LRSVM Lanser raketa samohodni višecevni modularni

U skladu sa izmenjenim uslovima ratovanja pokrenut je razvoj modernog raketnog sistema sposobnog da lansira više vrsta raketa različitih kalibara i dometa sa sledećim karakteristikama:

- Poliformnost (više kalibara, više vrsta bojevih glava)
- Modularnost podsistema
- Potpuna automatizacija svih funkcija
- Integrisan SUV
- Sposobnost izvršenja autonomne programirane borbene misije
- Efikasna logistika (kontejnerski tip lansirne kutije)

Domet
8.6 km (raketa 128mm PLAMEN A)
12,6 km (raketa 128 mm PLAMEN D)
20.5 km (raketa 128 mm OGANj M77)
35 km (raketa 122 mm GRAD)

## LRSVM Selfpropelled multitube modular rocket launcher

According to changed conditions of modern warfare, the development of the modern rocket system was started which will be capable to launch a different kind of missiles, regarding to caliber or range, with folloving features:

- Polymorphous (for different calibers and for different warheads)
- Modular subsystems
- Each function fully automated
- FCS (Firing Control System) integrated
- Capable for autonomous scheduled war missions
- Effective logistics (interchangeable launching pods)

Range
8.6 km (rocket 128mm PLAMEN A)
12,6 km (rocket 128mm PLAMEN D)
20.5 km (rocket 128mm OGANJ M77)
35 km (rocket 122mm GRAD)

## Multisenzorska inteligentna platforma MIP 11

Osnovna namena sistema MIP je pasivno izviđanje, osmatranje i akvizicija, pokretnih i nepokretnih objekata, u dnevnim i noćnim uslovima i uslovima smanjene vidljivosti, iz pokreta ili zastoja. Sistem se sastoji od više različitih senzora koji istovremeno osmatraju prostor od interesa i formiraju njegovu elektronsku sliku u različitim delovima elektromagnetnog spektra. Dobijena multispektralna slika scene odgovara stvarnoj situaciji u prostoru i može se u realnom vremenu distribuirati drugim korisnicima preko komunikacione mreže. Senzorski sistem se postavlja na robustne automatizovane teleskopske stubove različitih veličina i daljinski upravljane stabilisane i nestabilisane nosače sa mogućnošću preciznog pokretanja po pravcu i elevaciji.

Sistem integriše sledeće senzore:

- Pasivni senzor za vidljivi deo spektra (video kamera)
- Pasivni senzor za IC spektar (termovizijska kamera)
- Aktivni izvor i pasivni senzor laserskog zračenja za merenje daljine do objekta (laserski daljinomer)

## Multi-sensor intelligent platform MIP 11

The main application of system MIP is passive intelligence, surveillance and acquisition of moving and stationary objects in daily, night and low visibility conditions, in a move or in a stay position.

System includes multiple sensors which observe an area of interest and establish its electronic image in different parts of the electromagnetic spectrum. These groups combine multisensors complementary sensor fusion in order to efficiently solve the partial data base problem - passive or semi-active acquisition of facilities. The resulting multispectral image scene is corresponding to the actual situation in the area and can be distributed in real time to other users via the network.

Sensor system is placed on automatized ruggedized telescopic masts in various sizes and remotely controlled stabilized and unstabilized carriers units with a possibility of precise moving in azimuth and elevation.

System integrates the following sensors:

- GPS za određivanje koordinata sopstvenog položaja
- Digitalni kompas za orjentaciju
- Radar
- Zvukometriju za precizno određivanje izvora zvuka
- Detektor radarskog, ic ili laserskog zračenja
- Hemijski i biološki detektor

## Protivoklopni raketni sistem Bumbar

Bumbar je lako, prenosno protivoklopno sredstvo za napadna i odbrambena dejstva na malim daljinama, projektovano u skladu sa sledećim zahtevima

- Tandem kumulativna bojeva glava, sposobna da uništi moderan tenk sa reaktivnim oklopom
- SACLOS vođenje, unapređena zaštita od ometanja zasnovana na sekvencijalnom diferencijalnom procesiranju slike i frekventno-vremenskoj i prostornoj diskriminaciji
- Mogućnost protivoklopne borbe na svim terenima uključujući i gradsku sredinu, jer se raketa može lansirati i iz zatvorene prostorije
- Raketa se lansira sa ramena strelca ili sa tronožca iz ležećeg položaja

Passive sensor for the visible part of the spectrum - (video camera)

Passive infrared sensor range (thermal imaging - camera)

Active and passive source of laser radiation sensor - for measuring the distance to the object (laser range finder)

- GPS for self-position determination
- Digital compass for orientation
- Radar
- Sound goniometer system for accurate determination of sound- sources
- Radar detector, detector of infrared or laser radiation, and chemical and - biological detectors

## Bumbar (bumble-bee) short range anti-tank missile weapon

Bumbar is man-portable, short range guided anti-tank weapon system, designed in accordance with following development guidelines

- Tandem hollow charge warhead, capable to destroy modern tanks with reactive homogenous armor
- SACLOS guidance, improved anti-jamming protection based on sequential frames differential processing, and frequency, time and space discrimination
- All terrains fighting capabilities including urban areas because missile can be launched from confined space
- Shoulder or tripod launching modes

## Automobil terenski ZK 4x4,

Terenski automobil ZK 1,4 t, 4x4, 5+1 namenjen je za prevoz ljudstva, transport oruđa i materijala ukupne mase do 1,4 t, kao i za vuču oruđa i priključnih sredstava ukupne mase do 1,7 t.

Motor je CUMMINS ISF 2.8 linijski, četvorocilindrični, četvorotaktni, vodom hlađeni, turbo prehranjivani dizel motor sa hladnjakom usisnog vazduha, ugrađen uzdužno ispred kabine. Transmisiju ovog vozila čine: frikciona spojnica sa jednim frikcionim diskom, petostepeni sinhronizovani menjač ZF 5S 400 , dvostepeni diferencijalni razvodnik pogona, koji obezbeđuje stalni pogon na sve točkove, kruti pogonski mostovi sa gibnjevima, dopunskim gumenim oprugama i hidrauličkim teleskopskim amortizerima. Kočni sistem je hidraulički sa disk kočnicama na svim točkovima i ABS uređajem i elektronskom raspodelom kočnih sila. Upravljački mehanizam je hidraulički sa servo dejstvom. Ram je sa dva podužna i više poprečnih nosača. Vozilo ima mogućnost blokade međuosnog i oba osna diferencijala.

## ZK 1.4 T, 4x4 off-road vehicle

The ZK 1.4 t, 4x4, 5+1 off-road vehicle is designed for transport of crew, weapons and material up to 1.4 tons of total weight, as for traction of weapons and trailers up to 1.7 tons of weight.

This vehicle has a 4-cylinder, 4-stroke, water cooled CUMMINS ISF 2.8 turbocharged diesel engine with intake air cooler, installed longitudinally in front of the cab. The vehicle's transmission includes: a single-plate friction clutch, 5-gear ZF 5S 400 synchronous mechanical gearbox, two-stage differential transfer case that provides permanent all-wheels drive, rigid drive axles with leaf springs, additional rubber springs and hydraulic telescopic double-action shock absorbers. The hydraulic braking system has disc brakes on all wheels, ABS system and electronically regulated breaking force distribution. The steering is hydraulic with servo assistance. The frame has two longitudinal and several transversal brackets. The vehicle has the option to lock the inter-axle and both axle differentials.

## Samohodna haubica 122mm "SORA"

Samohodna haubica kalibra 122mm SORA je namenjena za opštu vatrenu podršku sopstvenih jedinica nivoa brigade. Projektovana je da zadovolji zahteve savremenog bojišta, a to znači da je princip pucaj i beži predviđen kao osnovni vid dejstva ovog oruđa.

Samohodna haubica SORA je nastala otvorenom ugradnjom delova i sklopova pokretnih po pravcu haubice 122mm D-30J na modifikovanu osnovu terenskog automobila FAP 2026 BS/AV. Ugrađeni su i sistemi za automatizaciju funkcija oruđa kao što su: sistem za navigaciju, automatski punjač, automatska nišanska linija i sistem za automatsko prevođenje iz marševskog u borbeni položaj i obrnuto.

## Self-propelled howitzer 122mm "SORA"

Self-propelled howitzer 122mm SORA is intended for general fire support of brigade level units. It has been designed to fulfill requirements of the modern battlefield, which means that shoot-and-scoot principle is adopted as the main mode of operation.

Self-propelled howitzer SORA features whole upper part of 122mm howitzer D-30J mounted on the rear end of modified FAP 2026 BS/AV truck chassis. Main functions of the weapon system, such as navigation, gun lying, automatic loading of ammunition and deployment, are fully automatic.

## Sistem za zvukometrijsko izviđanje - HEMERA

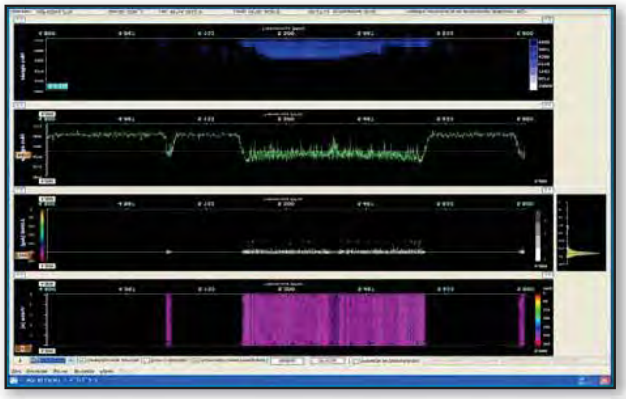
Namena:

- Detekcija i lociranje (procena koordinata) protivničke artiljerije i raketnih sistema
- Korekcija vatre sopstvene artiljerije bazirana na analizi akustičkih signala generisanih eksplozijom artiljerijskih i raketnih projektila
- Procena 3D koordinata tačaka od interesa na osnovu akustičkog signala generisanog eksplozijom na tim tačkama

## System for acoustic source localization - HEMERA

Application:

- Acoustic-based detection, localization (estimation of coordinates) artillery and rocket weapons
- Correction of one's own artillery fire based on the analysis of acoustic signals generated by the explosion of artillery and rocket projectiles
- Estimation of 3D coordinates of the points of interest based on the attended explosions at these points



## Taktička bespilotna letelica kratkog doleta

Taktička bespilotna letelica kratkog doleta (TBL) je namenjena za prikupljanje podataka na taktičkom nivou izviđanjem na daljinama do 10 km. Letelica je sposobna da nosi do 1.5 kg ukupne mase korisnog tereta (dnevna ili noćna kamera na stabilisanoj platformi).

## Taktička bespilotna letelica velikog dometa

Takticka bespilotna letelica velikog dometa za dnevno i noćno izviđanje i nadzor nad misijama i ciljanja. Opremljena je jednom multisenzorskom stanicom (do 40 kg na centralnoj tački) ili dve različite (do 30 kg i do 10 kg).

## Short range tactical UAV

Tactical UAV for day or night reconnaissance and surveillance short range missions (up to 10 km) carrying EO payload (daylight or IR camera on the gyro stabilized platform) up to 1.5 kg.

## Long range tactical UAV

Long range tactical UAV for day and night reconnaissance and surveillance missions, target acquisition and designation. Equipped with single payload (up to 40 kg on the central adjunction point) or two different (up to 30 kg and up to 10 kg).

# TOC TEHNIČKI OPITNI CENTAR

# TOC

*(Technical testing center)*

Tehnički opitni centar (TOC) je savremena vojna, naučna i istraživačka ustanova sa sedištem u Beogradu. Osnovan je 1973. godine sa specijalnim zadatkom, posebno je opremljen i osposobljen za ispitivanje i seritifikovanje kvaliteta naoružanja, vojne opreme, širokog spektra tehničkih proizvoda, kao i za kalibraciju merne opreme. Centar radi kao nezavisna i nepristrasna organizacija koja ima sopstvene radne prostorije, savremenu opremu, visoko obrazovan i specijalzovan kadar.

Glavni zadatak Tehničkog opitnog centra jeste da ispita i oceni kvalitet sve vojne opreme bilo da se radi o opremi proizvedenoj u zemlji ili inostranstvu, namenjenoj za uvođenje u opremanje jedinica VS oružanim sistemima. Njegov zadatak je i da obezbedi da sve organizacione jedinice VS i Ministarstva odbrane Republike Srbije budu u skladu sa našim nacionalnim standardima ili sa referentnim standardima zemalja razvijenih u smislu merenja.

Za potrebe ispitivanja i kalibracije TOC je uspostavio 25 laboratorija i dva ispitna poligona sa odgovarajućim osobljem.

Osnovna aktivnost Tehničkog opitnog centra obuhvata primenjena i razvojna istraživanja u oblasti osmišljavanja novih metoda, kriterijuma i ispitnih procedura, kalibracija, pregleda i sertifikacije proizvoda i fundamentalna istraživanja kao osnovu primenjenih razvojnih istraživanja. TOC vrši razvojna ispitivanja i verifikuje rezultate istraživanja u sledećim oblastima: aerodinamika, balistika (unutrašnja i spoljašnja), pogonski sistemi, dinamika projektila/rakete, fizička eksplozija, konvencionalni raketni projektili, bojeve glave i upaljači, mehanika balističkih sistema (naoružanje, oružje i raketni lanseri), sistemi za upravljanje vatrom,

Technical Test Centre (TOC) is a modern military scientific and research establishment that has its seat in Belgrade. It was founded back in 1973 for a specific purpose, specially equipped and rendered capable of testing and certifying the quality of armaments, defense materiel, wide range of technical products and for calibration of measuring equipment. The Centre operates as an independent and impartial organization that has its own working premises, advanced equipment and highly educated, specialized personnel.

The main mission of the Technical Test Centre is to test and evaluate the quality of all the defense materiel, produced either in-country or abroad, aimed at being introduced into the Army's weapons system equipping. Also, its task is to ensure that all organizational units of the Army and the Ministry of Defense of the Republic of Serbia conform to our national standards or the reference standards of the countries developed in the field of metrology.

For the needs of testing and calibration, TOC has set up 25 laboratories and two test ranges, along with the appropriate personnel resources.

Basic activity of the Technical Test Centre incorporates applied and developmental researches in the field of devising of new methods, criteria and test procedures, calibrations, inspections and products certifications, as well as fundamental researches as the bases for applied developmental researches. TOC conducts developmental researches and verifies the research results in the following areas: aerodynamics, ballistics (interior and exterior), propulsion system, missile/rocket dynamics, physical explosion, conventional and missile projectiles, warheads and fuzes,



borbena i neborbena vozila, vođeni projektili / rakete, avioni, avio oprema i naoružanje, testiranje aviona, performansi i trajektorija aviona u letu, testiranje avio motora, testiranje svih tipova padobrana i jedrilica, ispitivanje buke aviona, ispitivanje specifikacija i uslova i ograničenja u korišćenju aviona, avionskih proizvoda i padobrana, prezentiranje letačkih karakteristika aviona – kako u zemlji tako i u inostranstvu, obuka ispitnih i probnih pilota, ispitivanje mornaričke opreme i oružja, konstrukcija brodova ratne mornarice, ograničenja i kretanja, fizike polja broda, podvodnog naoružanja, optike i elektronike, elektronsko osmatranje i ometanje, elektronske protiv-mere, telekomunikacije, radarski i kompjuterski inženjering, laserski inženjering, senzori, automatizacija, informaciona tehnologija, izvori električnog napajanja i energetska elektronika, hemijska i nuklearna zaštita, građevinarstvo i zaštitne konstrukcije, eksplozivne supstance i posebni materijali, sredstva za zaštitu od korozije i metrologija.

U skladu sa orijentacijom vladinih nadležnih organa koja ima za cilj ulazak u proces Evropske integracije, TOC je započeo proces ovladavanja novim metodama ispitivanja inženjerskih proizvoda na osnovu Evropskih direktiva i Novog pristupa svetskim standardima. Tako je pronađen način da se uposle viškovi odbrambenih kapaciteta na poslovima procenjivanja usklađenosti odbrambenih proizvoda – čime se uspostavlja korisna veza između vojnih i civilnih standarda i njihovih primena. Time što je akreditovan za ispitivanje i sertifikaciju tehničkih proizvoda, Tehnički opitni centar je stekao kvalifikacije, kako u zemlji tako i u inostranstvu, da deluje kao nezavisna, objektivna i kompetentna institucija osposobljena za procenu saobraznosti – prvenstveno odbrambenih proizvoda, ali i civilnih proizvoda koje nisu obradile druge, slične civilne ustanove.

Od brojnih ispitnih zadataka, završenih ili onih čija je realizacija u toku, glavni zadaci su: konačno ispitivanje vojničke uniforme, maske M-3, puške M21, municije kal. 30 mm, minobacača kal. 40 mm, rakete NEVA, piro patrona, novog FAP vozila, sistema zaštite motora tenka M84 od neodgovarajućeg paljenja, građevinskih mašina (rovokopač i utovarivač), aviona G-4 za obuku i borbu, rakete G-2000; u Republici Grnoj Gori ispituju se brodovi koji su pripadali mornarici Srbije i Crne Gore a koji su, posle prodaje, remontovani za potrebe Egipta.

ballistics system mechanics (armaments, weapons and rocket launchers), fire control systems, combat and non-combat vehicles, guided missiles/rockets, aircraft, aircraft equipment and weaponry, testing of aircraft, performances and aircraft in-flight trajectories, aircraft engines testing; testing of all types of parachutes and paragliders, testing of aircraft noise, specifications of conditions and limitations in usage of aircraft, aircraft products and parachutes; presentation of aircraft flight characteristics – both in-country and abroad, training of test and trial pilots, testing of naval equipment and weapons, war-time naval construction, warships resistivity and propulsion, ships` physical fields, underwater armaments, optics and electronics, electronic reconnaissance and jamming, electronic counter-measures, telecommunications, radar and computer engineering, laser engineering, sensors, automation, information technology, electric power supply sources and energy electronics, chemical and nuclear protection, civil engineering and protective structures, explosive substances and specific materials, corrosion protection and metrology.

In conformance with the orientation of the State Authorities aimed at access to the European Integration, TOC has commenced the processes of mastering new methods of testing the engineering products that are based on European Directives and the New Approach World Standards. In this way, use has been made of surplus defense capacities so as to be dedicated to the needs of assessment of conformance of the defense materiel – thus establishing a useful link between military and civilian standards and applications. By being accredited to test and certify technical products, the Technical Test Centre has been gaining qualifications, both in-country and abroad, to act as an impartial, objective and competent institution capable of assessing the conformance – primarily of defense products, but also of the civilian ones that have not been covered by the other, similar civilian establishments.

Out of the numerous test assignments, either those completed, or being in progress, the main ones are: final testing of soldiers` uniform, M-3 mask, M21 rifle, 30mm ammunition, 40 mm mortars, NEVA rockets, pyro-cartridges, new FAP made vehicle, system for protection of M84 Tank engine against improper start-up civil engineering machines (trench digger and loader), G-4 training and combat aircraft, G-2000 missile; in the Republic of Montenegro ships are being tested that once belonged to Serbian and Montenegro Navy and which, after being sold, are overhauled for the needs of Egypt.

# TRZ ČAČAK TRZ ČAČAK

TRZ (Tehnički remontni zavod) je institucija Vojske Srbije čija je osnovna aktivnost tehničko održavanje i generalni remont borbenih sredstava sa njihovim odgovarajućim sistemima, kompletima mašina i uređajima.

Osnovan je 1925. godine u Čačku.

TRZ (Technical Overhauling Institution) is the instituti on of the Army of Serbia whose basic activity is technical ma intenance and general overhauling of combat technology including corresponding systems, set of machines and devices.

It was founded in 1925 in the city of Čačak.

## Remont

• Oklopna vozila : oklopna vozila guseničari (tenkovi, oklopni transporteri i vozila guseničari, samohodna oruđa topovi i haubice) i oklopna vozila točkaši (oklopljeni automobili i transporteri, specijalni automobili (komandna vozila))

• Neoklopljena vozila (TRZ vrši opravku i tstiranje sistema prenosa, sistema za upravljanje, kočionog sistema, sistema elastičnog vešanja i dr.)

• Artiljerijska oruđa (protivavionski topovi, protivtenkovski topovi, tenkovksi topovi , topovi haubice, haubice minobacači) i streljačko naoružanje (pištolji,Automati, mitraljezi i puškomitraljezi, puške i karabini, ručni bacači, beztrzajni topovi, minobacači 82) i dr.

• Sredstva veze i elektronika

• Instrumenti (optički i optoelektronski) – Zamena i čišćenje optičkih elemenata, otklanjanje paralakse končanice, podešavanje položaja pokretno-nepokternog okulara

## Overhaul

• Armored vehicles : caterpillar-type armored vehicles ( tanks, armored transporters and caterpillar type vehicles, automotive weapons guns and howitzers) and armored wheel-type vehicles( armored automobiles and transporters, special automobiles (commanding))

• Unarmored vehicles (TRZ performs repair and testing of power transmission system, steering system, braking system, elastic suspension system etc.)

• Artillery weapons (antiaircraft cannons, antitank cannons, tank cannons , cannon howitzers, howitzers mine-throwers)and firing arms (pistols,automats, machine guns and light machine guns,rifles and carbines, hand throwers, recoilless cannons, mine-throwers 82) etc.

• Means of communication and electronics

• Instruments (optic and opt electronic)- Replacement and cleaning optical elements, eliminating parallax of reticle, adjusting position of movable-unmovable ocular


u odnosu na končanicu, podesivi domet (mogućnost dioptrijskih podešavanja) okulara, eliminisanje iskrivljenja slike, eliminisanje neparalelnosti optičkih osa, eliminisanje devijacije optičke ose u odnosu na vertikalnu ravan.

- Hidraulični uređaji
- Rakete (Rakete domaćih i inostranih proizvođača sa poluautomatskim ili automatskim navođenjem, ispitivanje raketnih sredstava, trenažeri, bacači raketa, indikatori svetlosnog povezivanja, kao i specjalni sistemi za pešadijska vozila.

- Elektro agregati, agregati i instalacije
- Uređaji za gašenje vatre i uređaji visokog pritiska

Razvoj TRZ predstavlja stalni proces kome se poklanja posebna pažnja. U tekućim uslovima tehnološke i stručne opremljenosti, aktivnosti razvoja usmerene su na sledeće:

- Započinjanje generalnog remonta novih tehničkih sredstava u Vojsci Srbije
- Modifikacija i modernizacija sredstava
- Projektovanje i postavljanje novih tehnoloških linija i modernizacija postojećih
- Proizvodnja tehnoloških projekata za remontna odeljenja i za sam Zavod
- Pružanje tehničke pomoći prilikom uspostavljanja rada određenih objekata ili tehnoloških linija
- Započinjanje proizvodnje rezervnih delova
- Započinjanje rada na novim projektima Zavoda (vojna oprema i nastavna sredstva)
- Obuka osoblja za održavanje TMS organizovanjem specijalnih kurseva obuke

Ponuda TRZ obuhvata razne vrste mašinske obrade, proizvode (rezervne delove, male lovačke ašove na rasklapanje, digitalni endoskop DE-07, nastavna sredstva) i usluge inženjeringa.

comparing to reticle, adjusting range (possibility of dioptrically adjusting) of ocular, eliminating picture distortion, eliminating unparallel optical axes, eliminating deviation of optical axis from vertical plain.

- Hydraulic devices
- Missiles (Missiles of domestic and foreign producers with semiautomatic or automatic guidance, testing rocket means, trainers, rocket throwers, light interference indicators, as well as special systems for infantry vehicles.

- Electro aggregates, aggregates and installations
- Fire extinguishers and high pressure

The development of TRZ is a continuous process to which special attention is being given. In current conditions of technological and personnel qualification the activities on development are directed toward:

- Starting of general overhauling of new technical means in the Army of Serbia
- Modification and modernization of the means
- Projecting and setting new technological lines and modernization of the existing
- Production of technological projects of overhauling departments and of the Institution itself
- Giving technical help while putting certain objects or technological lines in operation
- Starting production of spare parts
- Starting new products of the Institution (military equipment and teaching aids)
- Training of the personnel for TMS maintenance by organizing special training courses

Also in TRZ's offers a various kind of machining, products(Spare parts, little spades hunting carbine, digital endoskope DE-07, teaching aids) and Engeneering services.

# TEHNIČKI REMONTNI ZAVOD KRAGUJEVAC

# THE TECHNICAL REPAIR FACILITY KRAGUJEVAC

Tehnički remontni zavod Kragujevac (TRFK) je specijalizovana vojna ustanova sa savremenom opremom i mašinama, u sastavu Ministarstva odbrane Republike Srbije, sa veoma razvijenom tehnologijom i 60 godina iskustva u izvođenju generalne opravke i tehničkog održavanja ubojnih sredstava (UbS) za potrebe oružanih snaga. Kroz kontrolna ispitivanja i ispitivanja hemijske stabilnosti baruta vrši se nadzor kvaliteta uskladištenih UbS, od municije za lično naoružanje preko artiljerijske municije svih kalibara, mina i granata svih vrsta, do nevođenih raketa za višecevne lansere, a na osnovu dobijenih rezultata predlaže se i realizuje njihovo održavanje.

Pored toga, TRFK proizvodi UbS za sekundarnu upotrebu: vežbovnu, manevarsku, školsku i ispitnu municiju.

## Sadržaj ponude:

- Održavanje UbS na odredištu/instalaciji klijenta
- Remont UbS postavljanjem pokretnih radionica
- Raščišćavanje mesta masovnih eksplozija
- Proizvodnja elemenata UbS i alata i opreme za održavanje UbS: U saradnji sa Vojno-tehničkim institutom, TRFK je ovladao proizvodnjom serija elemenata UbS (gas generator za zrna kal. 130 mm i 155 mm, proizvodnja delova ručne bombe, pojačivača detonacije za granate kal. 82 mm i 120 mm (od dinamita i flegmatizovanog heksogena), proizvodnja pakovanja za mikro pakovanje (upaljač, bomba, detonator))
- Inženjering vezan za održavanje UbS
- Projektovanje i proizvodnja alata, opreme i mašina za održavanje UbS
- Transfer tehnologije, tehnička pomoć i supervizija

The Technical Repair Facility Kragujevac (TRFK) is a specialized military facility with up-to-date equipment and machinery within the complement of the Ministry of Defense of the Republic of Serbia, with highly developed technology and 60 years of experience in operations on general repair and technical maintenance of live ordnance (LO) for the requirements of armed forces. Through control tests and testing of chemical stability of powder, the quality of stored LO is monitored, ranging from the ammunition for small arms through artillery ammunition of all calibers, mines/grenades of all kinds, to unguided rockets for multiple rocket launchers and, on the basis of the results obtained, their maintenance is proposed and realized.

Additionally, TRFK manufactures LO for secondary purposes: drill, blank, practice and test ammunition.

## Scope of the offer:

- LO Maintenance at the client's site/installation
- Overhaul of LO by setting up mobile workshops
- Clearing of places of mass explosions
- Manufacture of LO elements and tools and equipment for LO maintenance: In cooperation with the Military Technical Institute, TRFK has mastered the manufacture of a series of LO elements ( gas generators for 130 mm and 155 mm rounds, manufacture of the elements of hand bomb, detonator boosters for 82 mm and 120 mm grenades (of TNT and phlegmatized hexogen), manufacture of packaging for micro packing (fuse, bomb, detonator))
- Engineering in the activity of LO maintenance
- Design and manufacture of tools, equipment, and machines for LO maintenance
- Technology transfer and technical assistance

# 14. OKTOBAR KRUŠEVAC

14. OKTOBAR KRUŠEVAC

IMK "14.oktobar" AD (Mašinska industrija 14. oktobar iz Kruševca, Akcionarsko društvo) je jedno od najstarijih preduzeća za obradu metala osnovano još 1923. godine, radi remonta i proizvodnje železničkih vagona i gvozdenih konstrukcija.

## Program proizvodnje vojne opreme danas

Danas Fabrike IMK „14.oktobar" AD mogu da ponude Vojsci Srbije i svakom drugom korisniku sledeće proizvode:

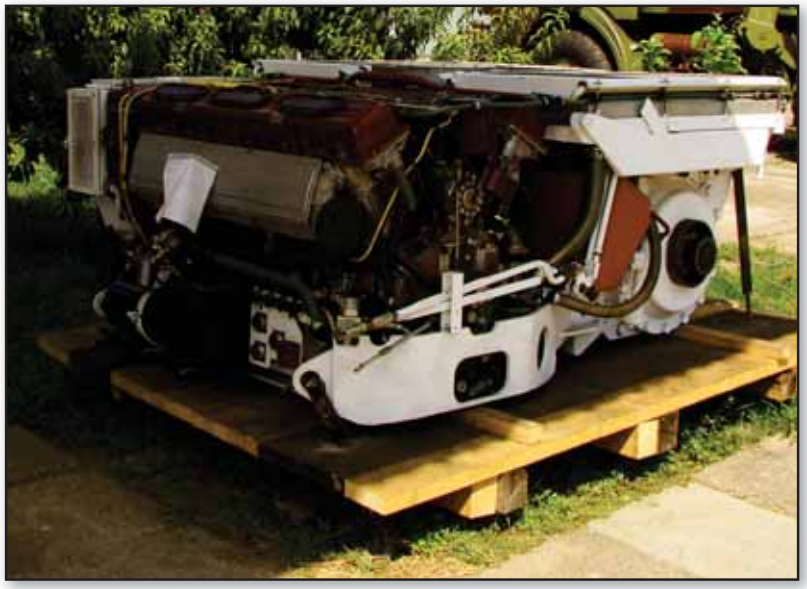
- Inženjerijske građevinske mašine, uključujući i oklopljene varijante
- Proizvodnju košuljica i čaura za municiju od 100mm, 105 mm, 122 mm i 125 mm
- Višecevni raketni sistem 128 mm Plamen-S. Sistem je projektovan modularno tako da omogućava ugradnju lansirnih platformi OGANJ sa 24 odnosni 32 cevi, umesto platforme PLAMEN, na univerzalni gornji nosač
- Proizvodnja transmisija za tenkove koje pokreću motori od 780 KS (534 kW), 1.000 KS (735 kW) i 1.200 KS (882 kW): Transmisija planetarnog tipa sa sedam brzina za kretanje unapred i jednom za rikverc, za ugradnju u tenkove serije T-64, T72, T80, T90, M84 i M84A, kao i za modernizaciju drugih tenkova
- Modernizacija oklopnih transportera istočnog i zapadnog porekla ((BTR-50, OT-62, BMP-1, BMP-2, BY-501, M-113 i drugi, težine do 18 tona) ugradnjom pogonske grupe PG-400
- Balistička zaštita vozila: automobili, džipovi i kamioni do IV nivoa zaštite prema NATO standardima

IMK "14.oktobar" AD /14th October Machinery Plant of Kruševac, Joint Stock Company is one of the oldest metal-machining enterprises in Serbia established back in 1923 for the purpose of overhaul and manufacture of railway carriages and iron structures.

## Defense materiel production programme today

At present, IMK „14.oktobar" AD Plants can offer both to the Army of Serbia and to any other users, the following products:

- Civil engineering machinery, including armored versions
- Manufacture of artillery and tank ammunition jackets and cartridge cases – calibers 100, 105, 122 and 125 mm
- Production and finalization of Plamen-S multiple-rocket system. The system is modularly designed in the manner that enables fitting of 24- or 32-barrel OGANJ launching pads, instead of Plamen pad, on the universal upper carriage.
- Manufacture of transmissions for Tanks powered by engines of 780 HP (534 kW), 1.000 HP(735 kW) and 1.200 HP (882 kW): Transmission of planetary type with 7-forward shift gears and one backward shift gear, intended for fitting into T-64, T72, T80, T90, M84,M84A Tanks, as well as for upgrade of other MBTs.
- Upgrade of armoured transporters of Eastern and Western origin (BTR-50, OT-62, BMP-1, BMP-2, BY-501, M-113 and others, weighing up to 18 tons) by mounting PG-400 power plant
- Vehicles ballistic protection of cars, jeeps and trucks up to level IV based on NATO standards



# MOMA STANOJLOVIĆ


# MOMA STANOJLOVIĆ

Počeci srpske avijacije i vazduhoplovnih snaga datiraju još od 1912. godine kada je osnovana Komanda Ratnog vazduhoplovstva u Nišu. Godine 1916. osnovana je Avionska eskadrila na ostrvu Krf. Iste godine radionica za opravku aviona je preseljena u Mikru u blizini Soluna.

Danas, lepeza aktivnosti koje obavlja Zavod Moma Stanojlović obuhvata: remont, proizvodnju i usluge.

Vazduhoplovni remontni zavod Moma Stanojlović ima sopstveni proizvodni program koji obuhvata remont supersoničnih aviona kako što su: "MiG-21" i "MiG-29"; mlaznih aviona: "Super Galeb", "Galeb" i "Orao"; kargo aviona "An-26", "An-2"; klipnih aviona "Utva-75"; lakih helikoptera "Guzzle" i "Mi-2"; i kargo helikoptera "Mi-8/17".

Zavod može da vrši sve vrste radova na remontu klipnih motora.

Pored remonta letelica, motora i protiv-avionskih vozila, sledeći segmenti remonta obuhvataju opravku opreme za radio navigaciju, foto opreme i letačke opreme za koju se vrši defektacija, remontovanje i testiranje u specijalizovanim radionicama. Posle opravke, motori i reduktori svih tipova aviona i helikoptera se testiraju na ispitnim stanicama, a dobijeni rezultati se overavaju posle čega sledi njihova ponovna ugradnja u letelice.

Zajedno sa motorima, moraju se pregledati, remontovati i testirati svi pribori i sklopovi letelica. što obavljaju visoko stručni inženjeri i tehničari, koristeći savremene uređaje (od kojih su veliki broj proizveli sami stručnjaci zavoda).

Što se tiče proizvodnje kao podrške remontu, Zavod proizvodi gumene proizvode (koji se rade hidrauličnim vrućim presama). Zavod takođe proizvodi gumene i gumirane proizvode – u kombinaciji sa drugim materijalima: guma-metal, guma-platno ili guma-plastika.

Mašinskom obradom Zavod proizvodi rezervne delove – proizvedene od metala i drugih materijala, specijalne alate i stege potrebne za remont i proizvodnju. Remontni zavod Moma Stanojlović proizvodi sinterovane frikcione elemente za spojnice i kočnice napravljene od metalkeramičng bakra ili materijala napravljenih na bazi gvožđa. Zavod proizvodi sinterovane kočione komponente na bazi gvožđa za avione (MiG- 21, AN-26, ORAO, MiG-29, Canadair, Dornier) i gusenična motorna vozila za radarske sisteme.

Zavod takođe proizvodi sinterovane kočione komponente na bazi bakra za spojnice i kočnice koje rade ili kao suve ili kao uljne spojnice za tenkove T72/M84, spojnice za teška transportna vozila, spojnice za rudarske i građevinske mašine, spojnice za autobuse (Vislonov menjač), frikcione elemente za tramvajske parkirne kočnice, frikcione elemente za traktorske spojnice, spojnice za viljuškare i spojnice za kultivatore.

The beginnings of Serbian aviation and air force date back from 1912 when the Air Force Command was established in the town of Niš. In 1916, Aeroplane Squadron was founded on the Corfu Island. That same year the Aeroplane Workshop moved to Mikra in the vicinity of Thessalonica.

The range of activities in which Moma Stanojlović Depot involves: overhaul, production, and services.

Moma Stanojlović Air Force Depot has in its production programme that includes supersonic aircraft overhaul such as: "MiG-21" and "MiG-29"; jet aircraft: "Super Galeb", "Galeb" and "Orao"; cargo aircraft "An-26", "An-2"; piston aircraft "Utva-75"; light helicopter "Guzzle" and "Mi-2"; and cargo helicopter "Mi-8/17".

The Depot is capable of performing all kinds of piston engine overhaul operations.

In addition to overhaul of aircraft, engines and anti-aircraft vehicles the following segments of overhaul includes repair of radio-navigation equipment, photo-equipment and flying equipment that is being trouble-shot, overhauled and tested in specialized workshops. After repair, engines and reducing gears for all types of aircraft and helicopters are tested on test stations with the results obtained being certified whereupon they are fitted back into aircraft.

Together with engines, all aircraft accessories and assemblies have to be inspected, overhauled and tested.wich is performed by highly skilled engineers and technicians using advanced devices (the large number of which being manufactured by the Depot's specialists themselves).

In the field of production as support to overhaul, Depot manufacture rubber products (these are made on hydraulic hot presses).It allso manufacture both rubber and rubberised products – in combination with other materials: rubber-metal, rubber-cloth or rubber-plastics

In the field of machining, it manufactures spare parts – made of metal and other materials, special tools and fixtures required for overhaul and production.

Moma Stanojlović Air Force Depot manufactures sintered friction elements for couplings and brakes made of metalceramics copper or iron based materials. It manufactures iron-based sintered braking components for: aircraft (MiG- 21, AN-26, ORAO, MiG-29, Canadair, Dornier) and tracked motor-vehicles for radar systems. Also the Depot manufactures copper based sintered friction components for couplings and brakes that operate either as dry or in oil: couplings for T72/M84 Tanks, couplings for heavy-duty cargo vehicles, couplings for mining and construction machines,

Moma Stanojlović proizvodi termo-izolacione košuljice za motore VIPER (22- 6, 531, 632-41 i 633-41) i za motore za tenkove T72/M84). Košuljice se prave od prohroma otpornog na vatru i pune izolacionom vunom.

Zavod takođe može da proizvodi delove i sklopove od kompozitnih materijala. Neke od vitalnih avionskih komponenata čijom proizvodnjom je ovladano i koji se proizvode su rotorske lopatice za helikopter Gazela i lopatice za repni rotor helikoptera Mi8/17.

Radionice Zavoda vrše različite vrste procesa elektro-hemijske i hemijske obrade, farbanja i uklanjanja korozije upotrebom poliuretanskih boja, akrilnih farbi, nitro farbi, epoksi i alkalnih boja.

Hemijska laboratorija vrši ispitivanja raznovrsnih materijala primenom odgovarajućih procedura.

Metrološka laboratorija je sertifikovana za kalibrisanje električnih mernih instrumenata i drugih merača, specijalne opreme i uređaje specijalne namene.

U saradnji sa Vojno-tehničkim institutom, Mašinskim fakultetom, Institutom za fiziku, Elektrotehničkim fakultetom i preduzećima povezanim sa ratnim vazduhoplovstvom i avio industrijom, Zavod je projektovao i proizveo uređaj za prilagođavanje pilota na prostornu disorijentaciju, centrifuge sa ubrzanjem od 1 do maksimum 35 g, baro komoru, ispitne stolove za pumpe – za regulacju dotoka goriva, ispitne stolove za turbo-pribore, ispitne stolove za testiranje rotorskih lopatica/lopatica.

couplings for buses (Wilson gearbox), friction components for tram parking brakes, friction components for tractor couplings, couplings for fork-lift trucks and couplings for cultivators.

Moma Stanojlović manufactures thermal-insulation jackets for VIPER (22- 6, 531, 632-41 and 633-41) engines and for T72/M84 Tanks engines. Jackets are made of fire-resistant prochrome and filled with insulation wool.

Depot is also capable of producing parts and assemblies made of composite materials. Some of the vital aircraft components that have been mastered and manufactured are the main rotor vane for Gazelle helicopter and tail rotor blades for Mi-8/17 helicopter.

Depot's workshops are performing the various types of electro-chemical and chemical treatment processes,coloring and elimination of corrosion by the use of polyurethane dyes, acrylic paint, nitro paints, epoxy and alkyd paints.

Chemical laboratory conducts tests on various materials applying appropriate procedures.

Metrology laboratory has been certified to calibrate electric measuring instruments and gauges, special equipment and special-purpose devices.

In cooperation with the Military-Technical Institute, Faculty of Mechanical Engineering, Institute for Physics, Electric- Engineering Faculty and the enterprises related to air force and aviation industries, and Depot have designed and produced a device for pilot's adjustment to spatial disorientation, centrifuge with acceleration of from 1 g up to maximum 35 g, bar chamber, pump test benches –fuel flow regulators, turbo-accessories test benches, test benches for testing of vanes/blades.

# VOJNA AKADEMIJA BEOGRAD

# MILITARY ACADEMY BEOGRAD

Vojna akademija stoji kao dokaz snage srpske države 161 godinu i izražava želju srpskog naroda da ima svoje vojno obrazovanje kao stratešku komponentu u procesu formiranja i obrazovanja sopstvenog oficirskog kadra.

Glavni zadatak joj je da kreira identitet profesionalnog oficira – lidera, časnog, odanog, obučenog i pripremljenog za intelektualne i etičke izazove oficirskog poziva u službi otadžbine – Republike Srbije.

Vojna akademija ima 14 katedri:

- Katedra menadžmenta
- Katedra taktike
- Katedra društvenih nauka
- Katedra naoružanja i opreme KOV
- Katedra naoružanja i opremanje artiljerijskih raketnih jedinica (ARJ) za PVD I VOJ protivvazdušne odbrane i nadzor
- Katedra prirodno matematičkih nauka

The Military Academy has stood as a proof of the Serbian state's strength for 161 years and expressed the wish of the Serbian people to have its military education as strategic component in the process of formation and education of its officers.

The main mission is to create identity of a professional officer – a leader, honorable, loyal, trained and prepared for intellectual and ethical challenges of an officer's vocation in service of the homeland - The Republic of Serbia.

Military Academy consists of 14 departments:

- Department of Management
- Department of Tactics
- Department of Social Sciences
- Department of Land Forces Armaments and Equipment
- Department of Artillery Rocket Units AD and Air Surveillance Armaments and Equipment
- Department of Natural and Mathematical Sciences

- Katedra za strane jezike
- Katedra vojno-mašinskog inženjerstva
- Katedra vojno-elektronskog inženjerstva
- Katedra vojnohemijskog inženjerstva
- Katedra vojnog vazduhoplovstva
- Katedra telekomunikacija i informatike
- Katedra logistike
- Katedra za fizičko obrazovanje

*Nivoi studiranja*

Sledeći nivoi studiranja su organizovani na Vojnoj akademiji:

- Osnovne akademske studije
- Diplomske akademske studije
- Postdiplomske akademske studije
- Postdiplomske specijalističke studije
- Škola rezervnih oficira
- Osnovna, primenjena i razvojna istraživanja važna za podizanje kvaliteta fakultetskog obrazovanja, obuke naučnog i predavačkog kadra i brifing za student na naučnim radovima.

Pored gore navedenih, u sistemu obrazovanja u okviru Vojne akademije takođe se nalazi srednjoškolska vojna obrazovna ustanova Vojna gimnazija.

- Department of Foreign languages
- Department of Military Mechanical Engineering
- Department of Military Electrical Engineering
- Department of Military Chemical Engineering
- Department of Military Aviation
- Department of Telecommunications and Information Science
- Department of Logistics
- Department of Physical Education

*The Levels of Studies*

The following levels of studies are organized in The Military Academy:

- Graduate Academic Studies
- Postgraduate Specialist Studies
- Postgraduate Master Studies
- Postgraduate Specialized Training
- The Reserve Officers School
- Basic, applied and developing researches important for raising of quality of degree-granting education, training of scientific and teaching staff and briefing students on scientific work.

Besides above mentioned, in the system of education at the Military Academy, it is also found secondary military education at The Military High School.

# MAŠINSKI FAKULTET BEOGRAD

# FACULTY OF MECHANICAL ENGINEERING

Mašinski fakultet je jedan od 31 fakulteta Univerziteta u Beogradu koji pripada grupi od devet tehničkih fakulteta. Najznačajnija misije fakulteta je briga za doprinos obrazovanju, učenju i istraživanju na najvišim nacionalnim i intenacionalnim niovima izvrsnosti a sa osnovnim evropskim vrednostima oblasti daljeg opšteg obrazovanja i istraživanja. Studenti imaju mogućnost biranja jedne od 21 katedre koje nudi ova organizacija.

## Katedra za oružne sisteme

Katedra za vojno mašinstvo osnovana je 1948. godine kao jedna od specijalističkih vokacija u okviru Mašinskog fakulteta.

Katedra je igrala značajnu ulogu posebno tokom faze formiranja vojnog industrijskog kompleksa i obezbeđivanja naučnog istraživačkog kadra u prethodnoj Jugoslaviji.

Katedra za vojno mašinstvo preimenovana je 2006. godine u katedru za oružne sisteme imajući u vidu potrebu da se što preciznije definiše predmet njene specijalizovane naučne aktivnosti i kao deo progresa reformisanja Univerziteta i njegovih tehničkih fakulteta prema međunarodnim standardima. Katedra za oružne sisteme nudi opsežno

The Faculty of Mechanical Engineering is one of the 31 faculties of the University of Belgrade, belonging to the group of 9 technical faculties. The most important Faculty's mission is concern to contribution to the pursuit of education, learning and research at the highest national and international levels of excellence and with European core values of the future common education and research space. Students have possibility of choosing one of the 21 departmants that this organisation offers.

## Weapon systems department

Department of Military Mechanical Engineering was founded in 1948 as one of specialist vocations within the Faculty of Mechanical Engineering.

The Department has played prominent role particularly during the phase of forming of the military-industrial complex and providing scientific research cadre in former Yugoslavia.

The Department of Military Mechanical Engineering was renamed in 2006 to Weapon Systems Department in keeping with the need to define more closely the subject of its specialized scientific activity and as part of reform process of the University and its technical faculties according to international standards.

obrazovanje u oblastima konvencionalnog naoružanja i raketnih sistema, kao i u glavnim naučnim i specijalističkim disciplinama neophodnim za razumevanje i istraživanje u okviru kompleksnih multidisciplinarnih projekata koji obuhvataju projektovanje municije, oruđa, eksplozivnih materijala, prateće opreme i dr.

## Katedra za vazduhoplovstvo

Katedra za vazduhoplovstvo je jedna od najstarijih katedri Mašinskog fakulteta.

Naučni, istraživački i razvojni rad kao i laboratorijski rad studenata organizovan je u okviru nekoliko specijalizovanih laboratorija u okviru Katedre za vazduhoplovstvo i Vazduhoplovnog instituta.

Specijalizovane laboratorije su klasifikovane na sledeći način:

- Laboratorija za strukturnu analizu
- Laboratorija za mlaznu propulziju
- Laboratorija za subsonična strujanja
- Laboratorija za supersonična strujanja
- Laboratorija za opremu letelica
- Laboratorija za računarsku simulaciju
- Laboratorija za mikropropulziju

Katedra je takođe učestvovala u projektovanju i izgradnji velikog broja domaćih komercijalnih i borbenih aviona (osnovni trenažni avion UTVA 75, takmičarska jedrilica visokih performansi VUK-T, trenažno-borbeni avion Galeb G-2 I Super Galeb G-4, borbeni avion ORAO i dr.).

Danas, Katedra za vazduhoplovstvo ostvaruje uspešnu saradnju sa mnogim institucijama u zemlji i inostranstvu; njeni naučni radovi se mogu naći u referentnim međunarodnim publikacijama i stalno je prisutna na važnim kongresima i profesionalnim okupljanjima vezanim za ovu oblast.

The Weapon Systems Department offers comprehensive education in areas of conventional weapon and rocket systems, as well as in chief scientific and specialist disciplines indispensable for understanding and research in complex multi-disciplinary projects involvingdesign of ammunition, weapons, explosive materials, associated equipment, etc.

## Aviation department

The Aviation Department is one of the oldest departments at the Faculty of Mechanical Engineering.

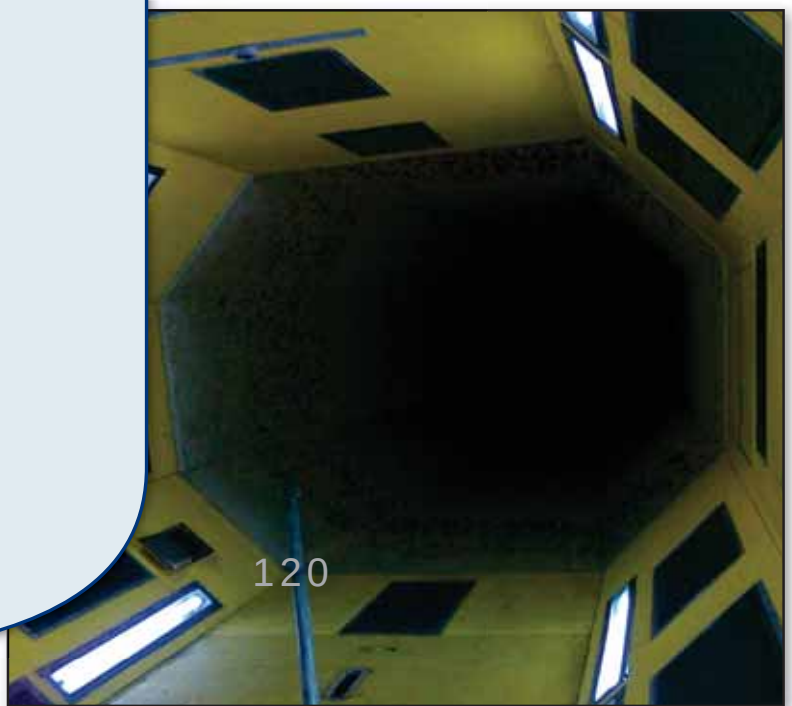
Scientific and R&D work as well as laboratory work for students is organized in several specialized laboratories within the Aviation Department and Aeronautical Institute.

These specialized laboratories are classified as follows:

- Laboratory for structural analysis
- Laboratory for jet propulsion
- Laboratory for subsonic streamline flow
- Laboratory for supersonic streamline flow
- Laboratory for airborne equipment
- Laboratory for computer simulation
- Laboratory for micro propulsion

The Department has also taken part in the design and construction of a large number of home-built commercial and fighter aircraft (basic trainer aircraft UTVA 75, high performance competition glider VUK-T, trainer-fighter aircraft Galeb G-2 and Super Galeb G-4, fighter aircraft ORAO, etc.).

Today, the Aviation Department has successful cooperation with many institutions in the country and abroad; its scientific papers may be found in the referential international publications and it is regularly present at important congresses and professional gatherings in its line of work.



# ELEKTRONSKI FAKULTET UNIVERZITET U NIŠU

# FACULTY OF ELECTRONIC ENGINEERING NIŠ

Krajem pedesetih godina prošlog veka porasla je potreba za specijalističkom obukom ljudi na univerzitetskom nivou. Grad Niš kao jedan od najvećih centara u Srbiji, sa razvijenom industrijom i raznovrsnim kulturnim, obrazovnim, medicinskim i drugim ustanovama, imao je veliku mogućnost za osnivanje univerziteta. Tako je 15. juna 1965. godine osnovan Univerzitet u Nišu. Dana 1. oktobra 1960. godine Elektrotehnički fakultet je formalno počeo sa radom, a Katedra za elektroniku je bila njegov deo. Dana 23. novembra 1968. oodine Katedra za elektroniku Elektrotehničkog fakulteta promovisana je u instituciju koja dodeljuje diplome – Elektronski fakultet.

Ovo repozicioniranje značilo je učestovanje na brojnim naučnim projekteima. Danas projekte finansiraju Ministarstvo za nauku i tehnološki razvoj, kao i EU, WUS Austrije stvarajući odlične prilike za rad od internacionalnog značaja i omogućavajući povezivanje sa stranim univerzitetima i organizacijama.

Istraživanja i razvoj projekata se vrši u okviru brojnih laboratorija na fakultetu među kojima se u pogledu realizovanih projekata vezanih za VO (Vojnu opremu) najviše izdvaja laboratorija za računarsku grafiku i geografske informacine sisteme (CG & GIS Lab) koja je specijaliziovana za razvoj GIS aplikacija i komandno informacionih sistema (KIS, C4I).

Najznačajniji korisnici projekata su: Ministarstvo odbrane, Vojska Srbije, Jugoimport SDPR J.P., Telekom Srbije, Elektrodistribucija, Republički Hidrometeorološki zavod, Ministarstvo unutrašnjih poslova, i sl, kao i organizacije i preduzeća na nivou lokalne samouprave – grad Niš i opština Vranje pre svega.

Sve ove akcije su u toku i u različitim fazama napredovanja.

Uspostavljanje ovih ustanova predstavlja izvanrednu priliku za rad na međunarodnoj, među-vladinoj platformi koja obezbeđuje direktne veze sa drugim zemljama, organizacijama i univerzitetskim katedrama.

By the end of 1950's, the need for people with a university-level specialist's training had increased. The town of Nis, as one of the bigest centers in the Serbia, with the developed industry and various cultural, educational, medical, and other institution, had a great possibility of establishing a uneversity.So, on the 15th of June 1965 the University of Nish was founded. On the 1st of October 1960, the Faculty of Engineering formally started working, and the Department of Electronic Engineering was a part of it. On the 23rd of Novembar, 1968 the Department of Electronic Engineering of the Faculty of Enginnering was incorporated as a degree-greating institution - Faculty of Electronic Engineering.

This repositioning includes taking part in numerous scientifi. Current scientific projects are funded by the Ministry of Science and Technological Development as well as by EU, WUS Austria thus allowing excellent opportunities to work on an international, intergovernmental platform that provides direct linkages to other countries, organizations, and university departments.

All research and project development is performed within many laboratories among which the most notable in the context of ME (Military Equipment) is the Computer Graphics and Geographic Information Systems laboratory (CG & GIS Lab) which is specialized for development of GIS applications as well as Command Information Systems (CIS, C4I).

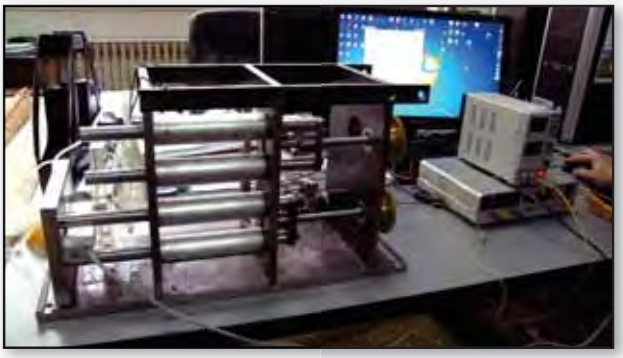
This laboratory serves a number of clients among which are: Ministry of Defence of Republic Serbia, Yugoimport SDPR , Telekom Serbia, Public Electric Power Supply Company (PD Jugoistok Nis), Rebulic Hidrometerological Service of Serbia, Ministry of Interior as well as local goverments of Niš and Vranje.

All these actions are ongoing and in different stages of progress.

Their establishment presents an excellent opportunity to work on an international, intergovernmental platform that provides direct linkages to other countries, organizations, and university departments.








Trenutno je preko 2000 studenata upisano na sledeće katedre:

- Katedra za automatiku
- Katedra za računarsku tehniku i informatiku
- Katedra za energetiku
- Katedra za mikroelektroniku
- Katedra za elektroniku
- Katedra za telekomunikacije
- Katedra za teorijsku elektrotehniku
- Katedra za merenja
- Katedra za matematiku
- Katedra za opšte obrazovne predmete

Currently there are over 2000 students enrolled at the following departments:

- Department of Automatic Control
- Department of Computer Science and Informatics
- Department of Power Engineering
- Department of Microelectronics
- Department of Electronics
- Department of Telecommunications
- Department of Theoretical Electrical Eng.
- Department of Measurement
- Department of Mathematics
- Department of General Education

## Komandno informacioni sistem (KIS)

Komandno informacioni sistem (KIS) predstavlja kombinaciju hardverskih i softverskih komponenti koje koriste najnaprednije tehnologija iz oblasti GIS (Geografsko informacionih sistema) i namenjen je da značajno poveća efikasnost tenkovske čete i pruži podršku za pripremanje i planiranje misije, donošenje odluka, organizaciju, generisanje izveštaja, komandovanje, određivanje ciljeva i sve ostale aktivnosti relevantne za borbene operacije.

## Battlefield Management System (BMS)

Battlefield Management System (BMS) is a hardware and software system that combines advanced GIS (Geographic Information System) technologies intended to greatly enhance situational awareness and give (tank platoon, and company) commander support in mission planning & preparation, decision making, organization, report issuing, command distribution, target acquisition and similar activities related to combat operations.

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