

[RFC] Obtaining Management Buy-in for Mainline Development

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Agenda

- Introduction
- Customer Perspective
- Management Perspective
- Conclusion – “Selling” Mainline to Management



Purpose

- This presentation seeks to give engineers the tools and skills required to push for mainline development methodology inside of a business environment.
- During this presentation you will learn to:
 - Define today's customers
 - Define mainline in terms management can understand
 - Show mainline benefits from the customer and management perspective
 - Define what you need from management to be successful
- The goal is that you can use this presentation (with some modification) to drive mainline development within your own company

The “Ideal” Customer

- Takes whatever code you provide them
- Adds their components
- Never comes back to you with issues
- Given a data sheet they will/can implement their required software without you
- They don't ever update their code or expect new features to be delivered
- They do all the productization and quality control themselves
- Do not expect more than beta quality code from you

If you have this customer please give us their contact information

The Real Customer

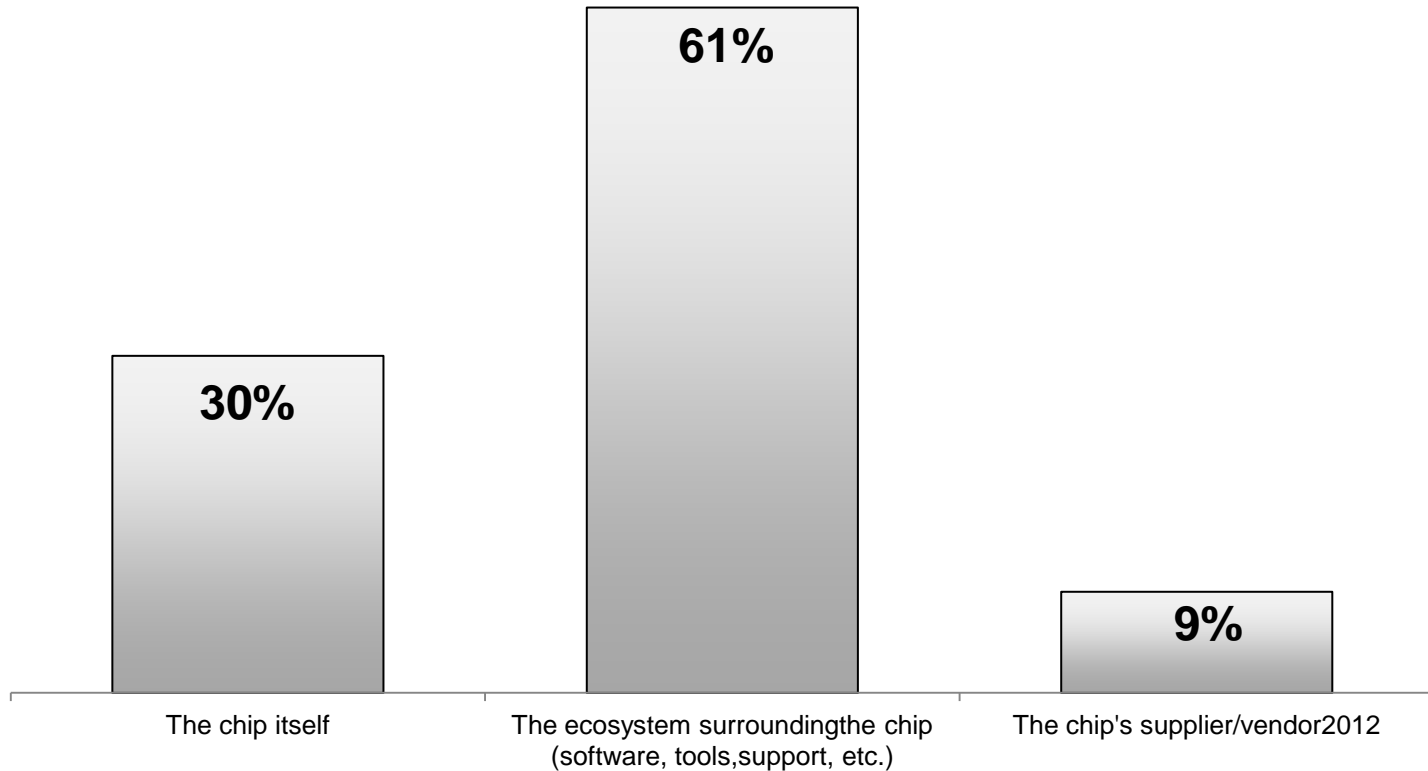
- Expects high quality code to be delivered that enables the required features, not just a data sheet
- Expects to be able to get new features that are available upstream
- Expects continued and iterative development
- Expects support of the code delivered to them for some period of time
- Customers are becoming more SW savvy and are demanding to see plans for how you will support the above.



Customer Perspective

The ecosystem matters!

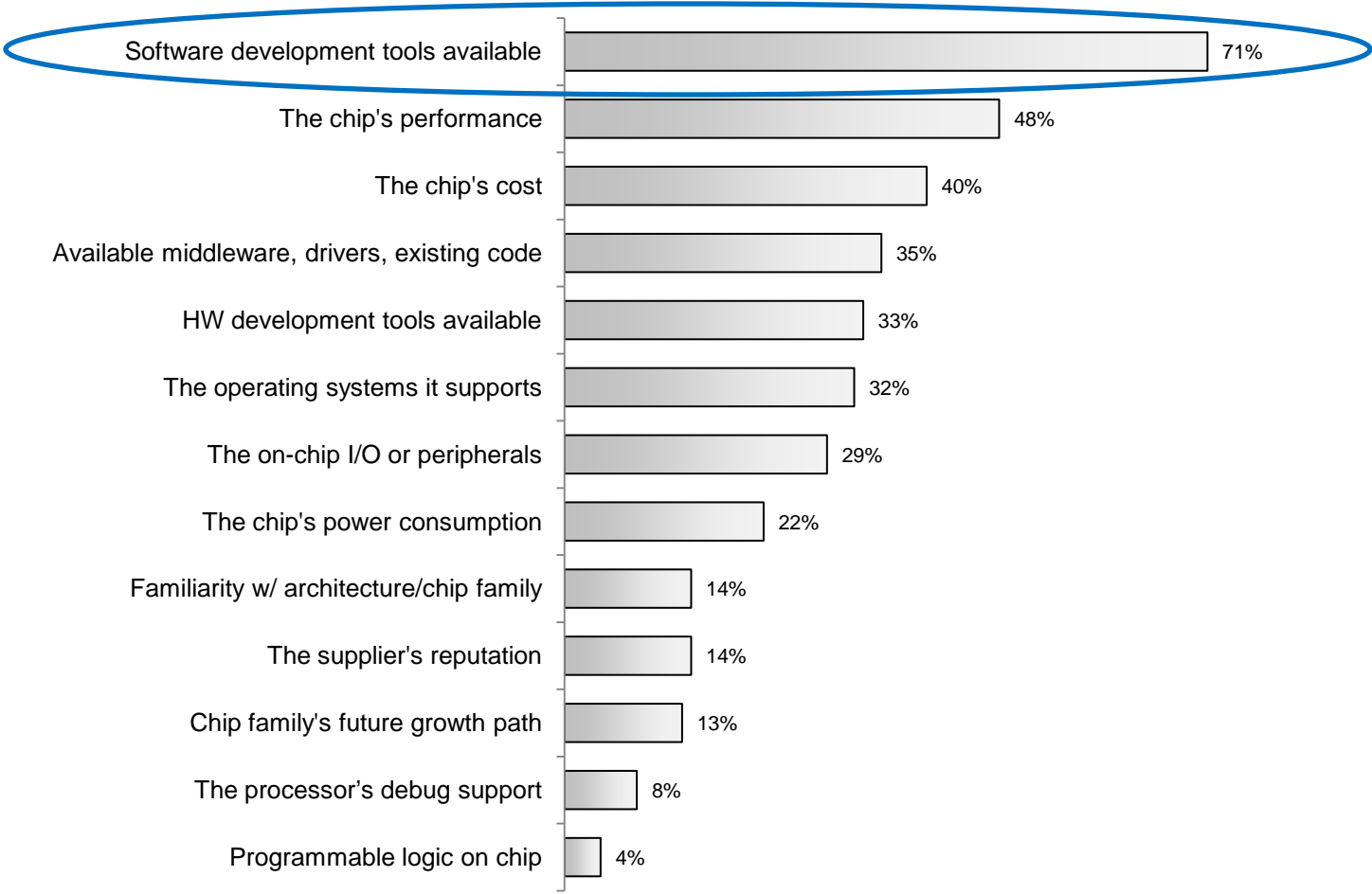
What's most important when choosing a microprocessor?



Source: 2012 Embedded Market Survey, UBM / EE Times Group

Software & tools are most important

What are the most important factors in choosing a processor?



Source: 2012 Embedded Market Survey, UBM / EE Times Group



What is the Customer Thinking?

- **What issues are all customer's looking to address?**
 - Ability to Innovate
 - Time to Market



Ability to Innovate

- When you buy a new car what features do you expect to just work?
 - Power windows, door locks, windshield wipers, the radio, the car to simply start
 - These are commodity requirements
- Today's new features are tomorrow's 'commodity' requirements
 - Would you buy a new car today without power steering?
- Customers have the same expectations for the Linux kernel
 - They simply want the commodity support to just work

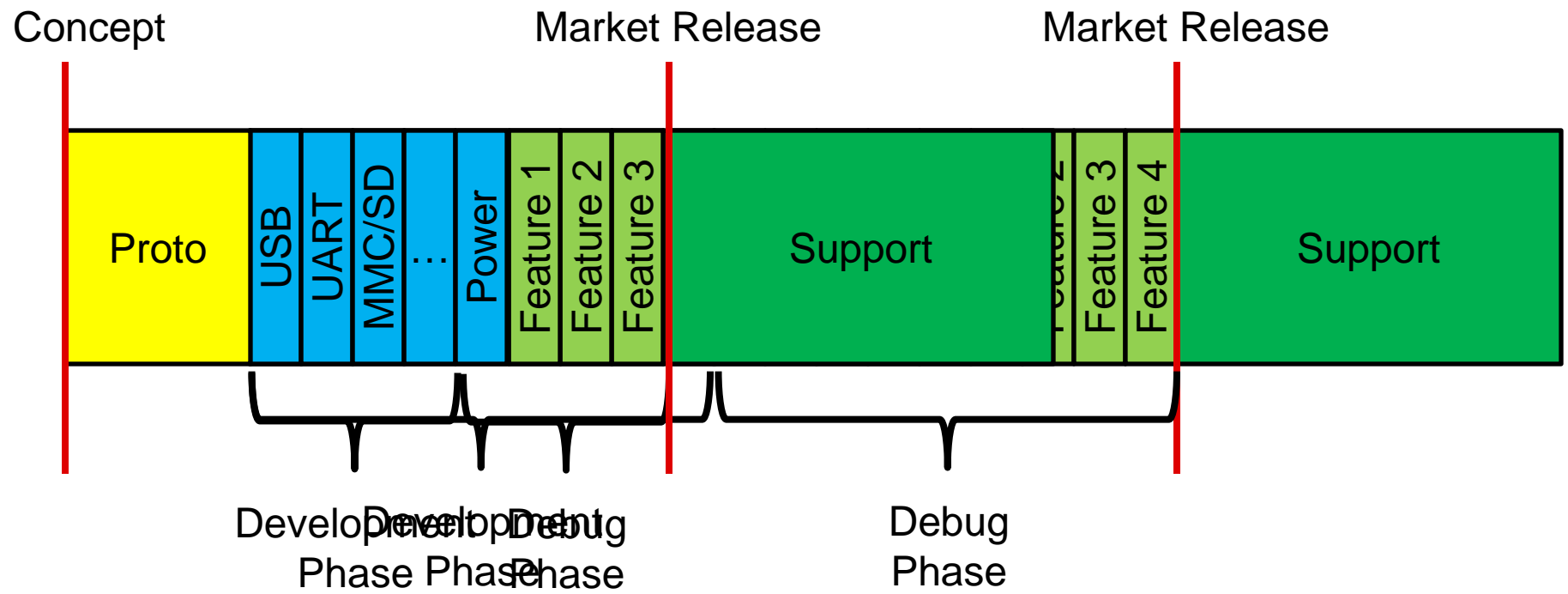
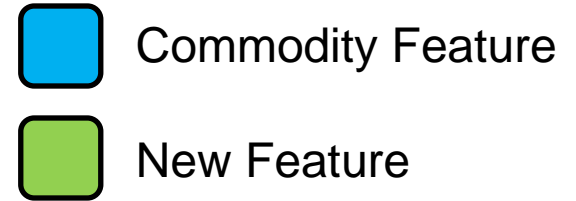
**They want to innovate creative applications & products
NOT develop and debug commodity support**

Time To Market

1. Take the 'Commodity' Development and Debug off the table

2. Pull in Development and Debug Phases

3. Release to Market Sooner



Management Perspective



The “Problem”

- Senior Management often does not understand mainline or upstream development
 - Your technical manager may understand but many times you need to talk to higher level managers for resources
- Managers like control, schedules, predictability
 - Mainline usually involves working with projects that you do not directly “control”

You have to show them how they can still control their product while investing in mainline

What is Management Thinking?

- **How is mainline support going to address the following issues:**
 - Operational Efficiency (ROI)
 - Increasing Quality & Robustness
 - Reducing Customer Support
 - Reducing Time to Market (TTM) – customer's and ours

“Selling” Mainline to Management

7 Important topics you must address...

1. Where do we want to go?
2. Scope of Mainline
3. Definition of Mainline
4. Challenges without Mainline
5. Mainline Development
6. 12 months from now...
7. What do we need to succeed?

Determining a Successful Outcome:

“Why aren’t we doing this today?”

Where do we want to go?

- How do we plan on improving the quality & robustness of our Linux software this year?
- How do we plan to scale our Linux software to:
 - Support 10,000 customers,
 - 10s of devices,
 - New reference designs
- 12 months from now, what can our customers expect from our Linux software?
 - Are our Customers happy today? Field Application Engineers, Sales?

The Scope of Mainline

- Mainline applies to all 3 primary components of our Linux solution
 - Uboot denx.de
 - Linux kernel kernel.org
 - Filesystem OpenEmbedded/Yocto
- Each has its own *mainline* consisting of well documented development flows, release schedules, git trees & maintainers

Defining Mainline


Mainline - *the ability to provide our customers a stable release from the community*

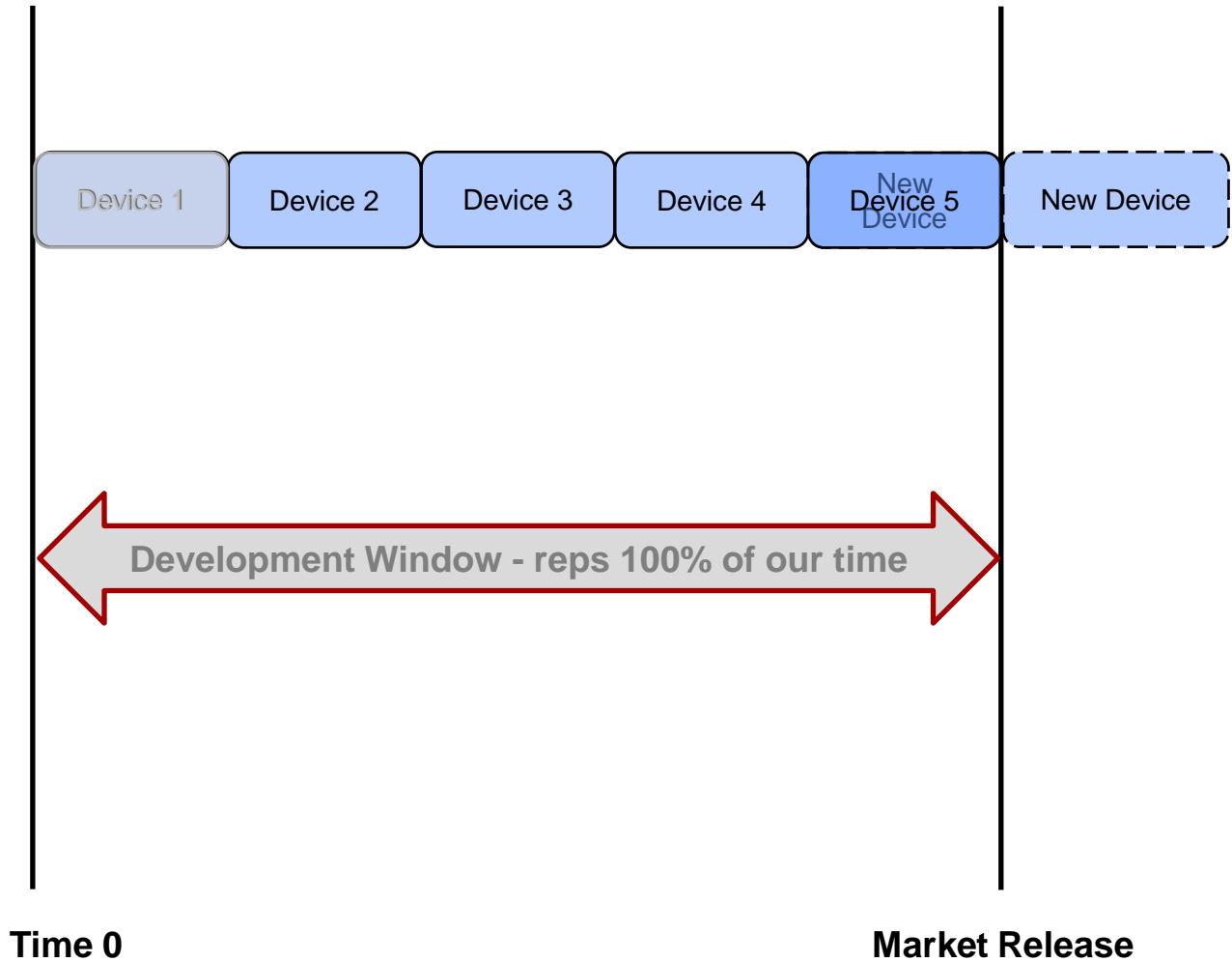
“Can I go to kernel.org, pull the latest stable release and expect your device to support basic ‘commodity’ features?”

If this answer is “No”, then you are NOT mainline!

Challenges without Mainline

- Customer Support & New Device Development

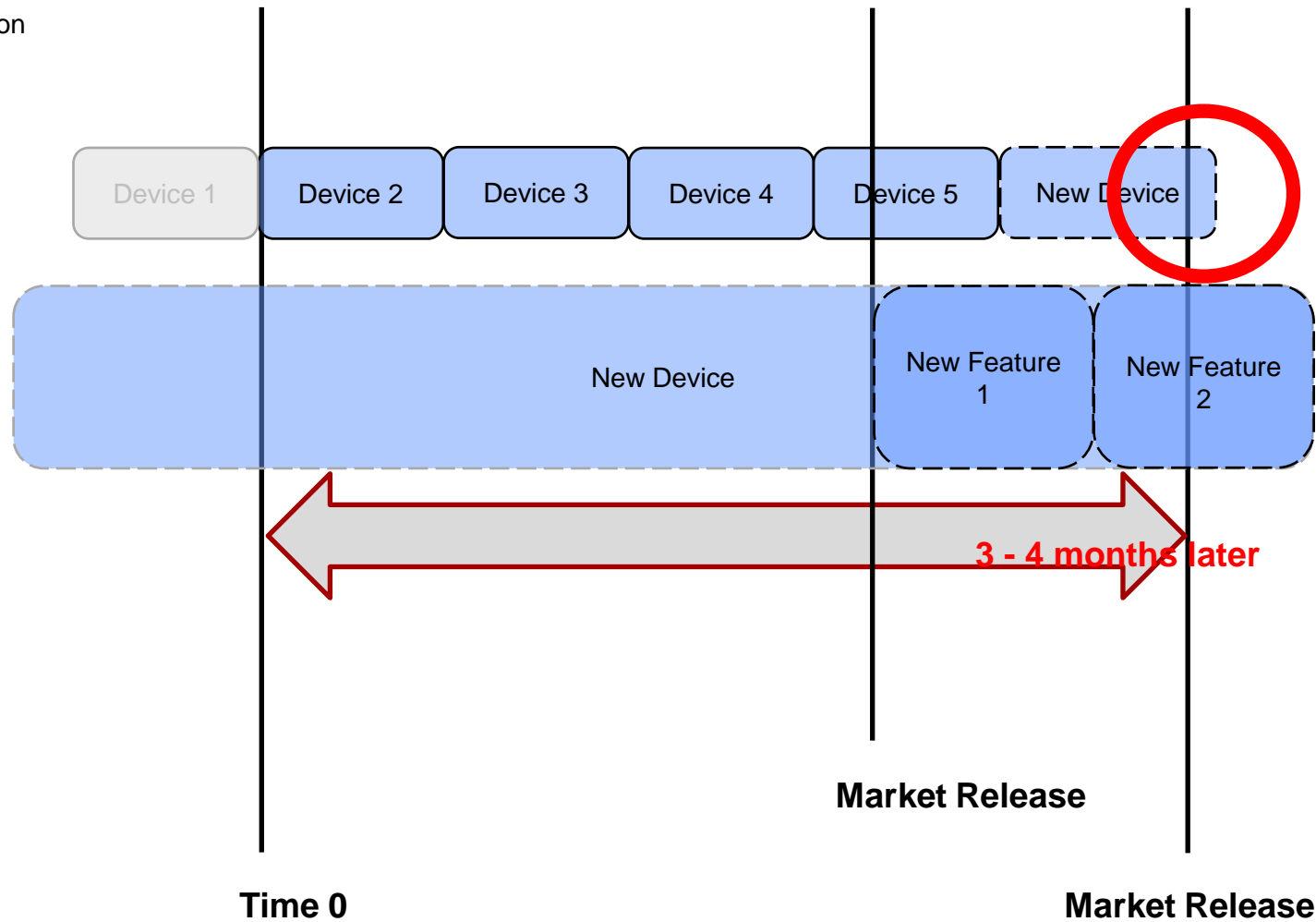
 Our Linux Solution



Challenges without Mainline

- Customer Support & New Device Development

 Our Linux Solution

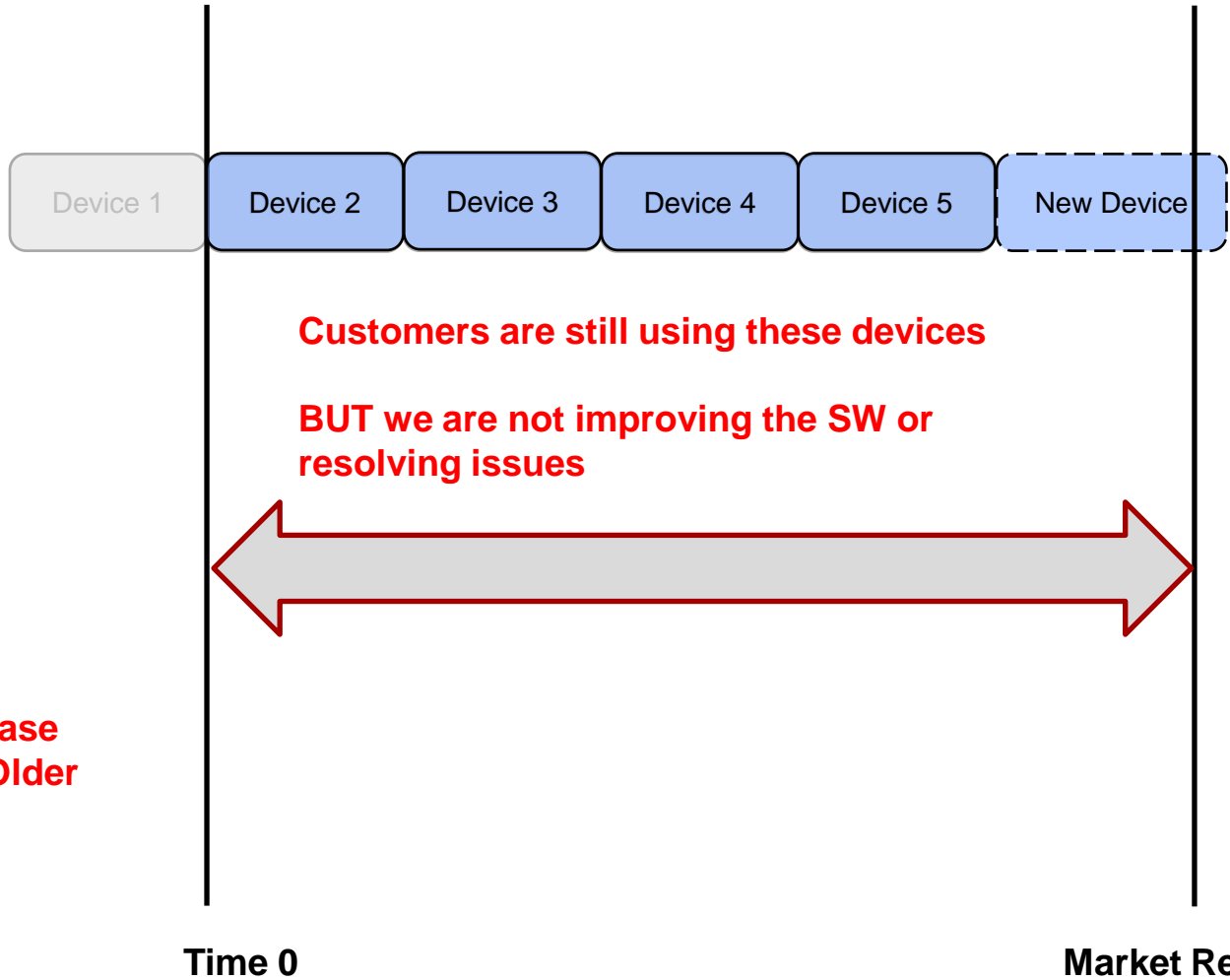




Challenges without Mainline

- Customer Support & New Device Development


 Our Linux Solution



Available Choices:

1. Push Market Release
2. Drop Support of Older Devices

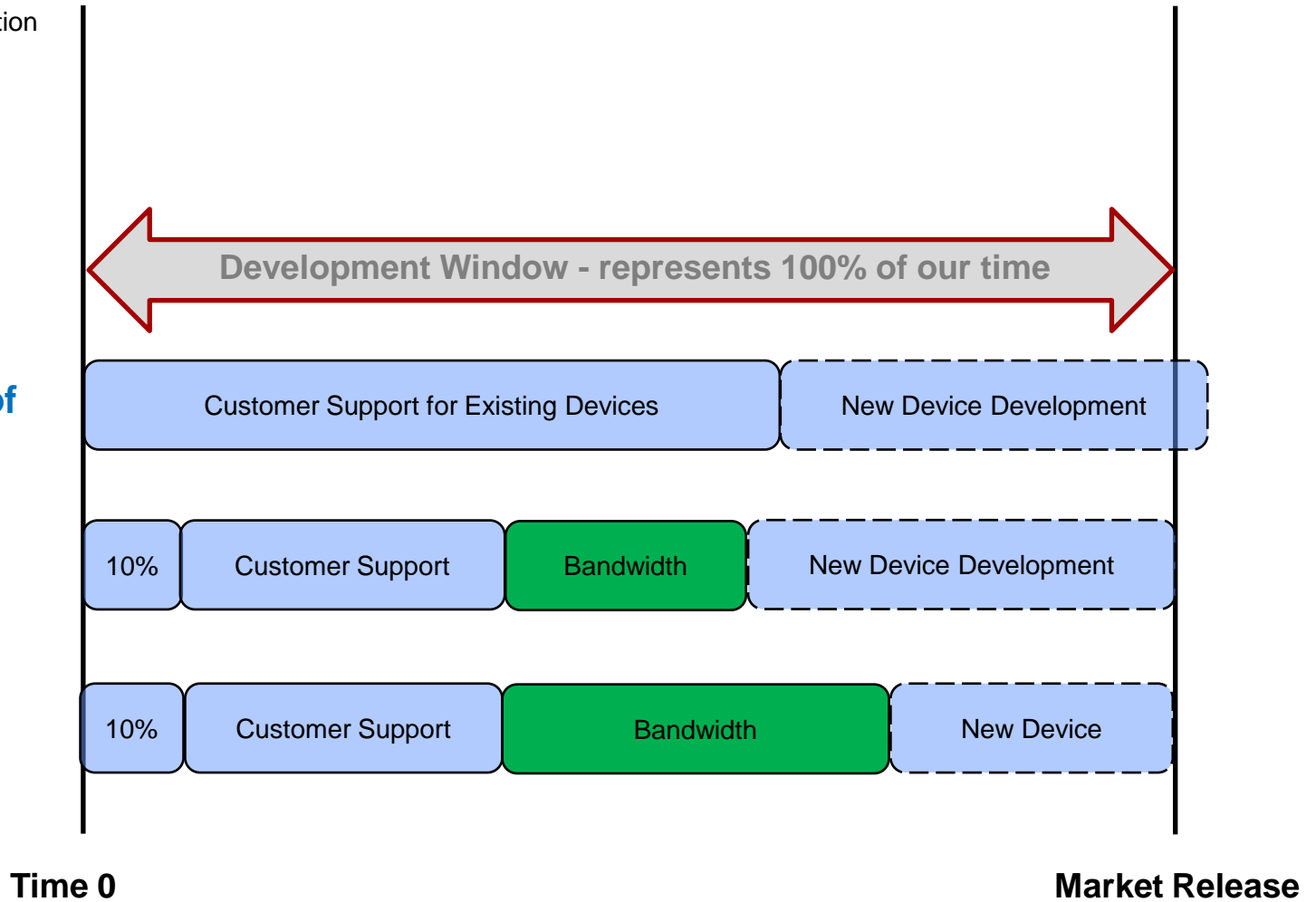
Operational Efficiency with Mainline

 Our Linux Solution

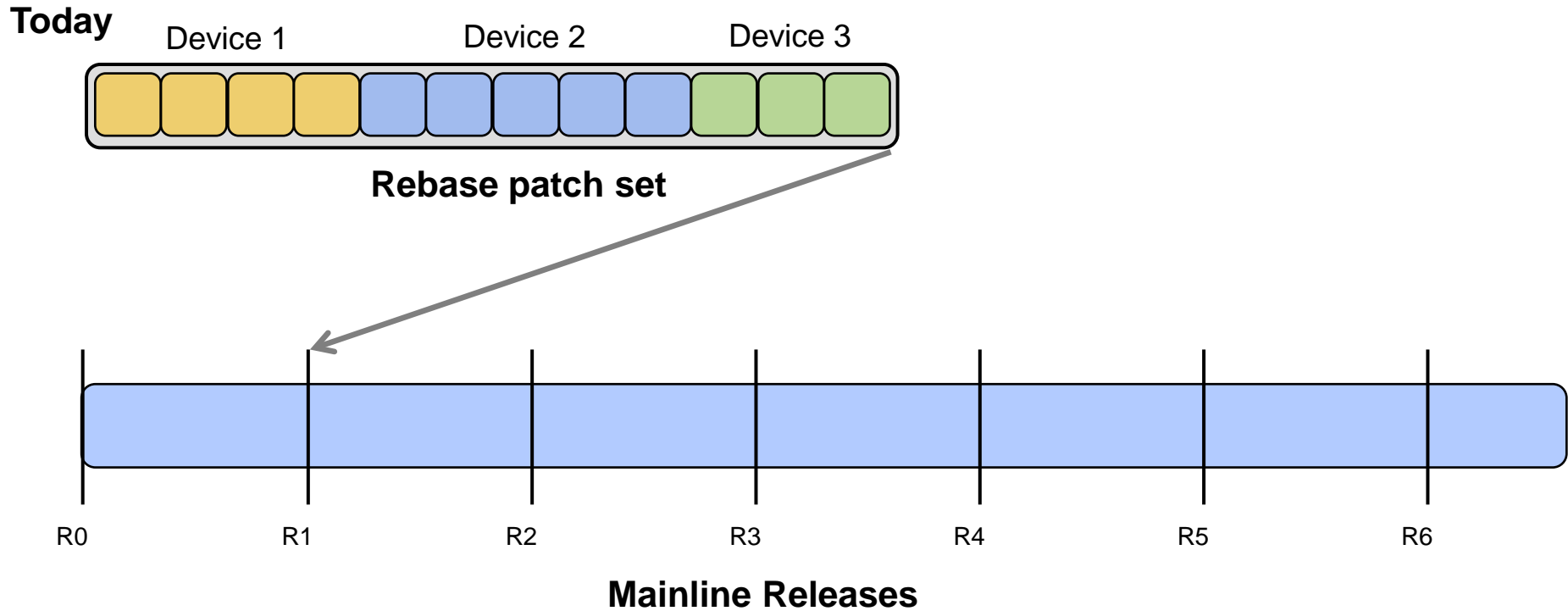
Two Benefits of Mainline:

Time to Market - Full entitlement of New Devices

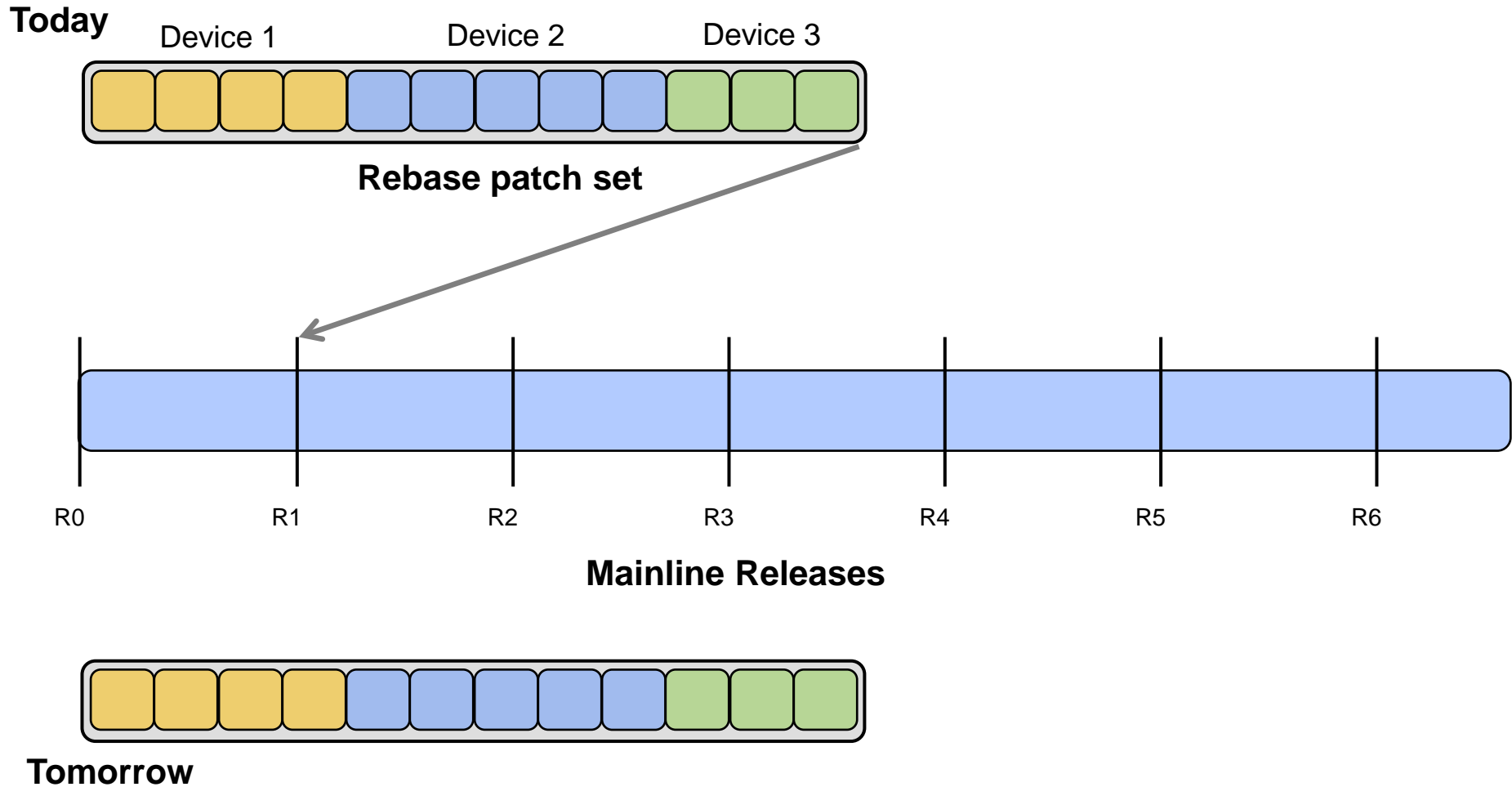
Incremental New Device Development



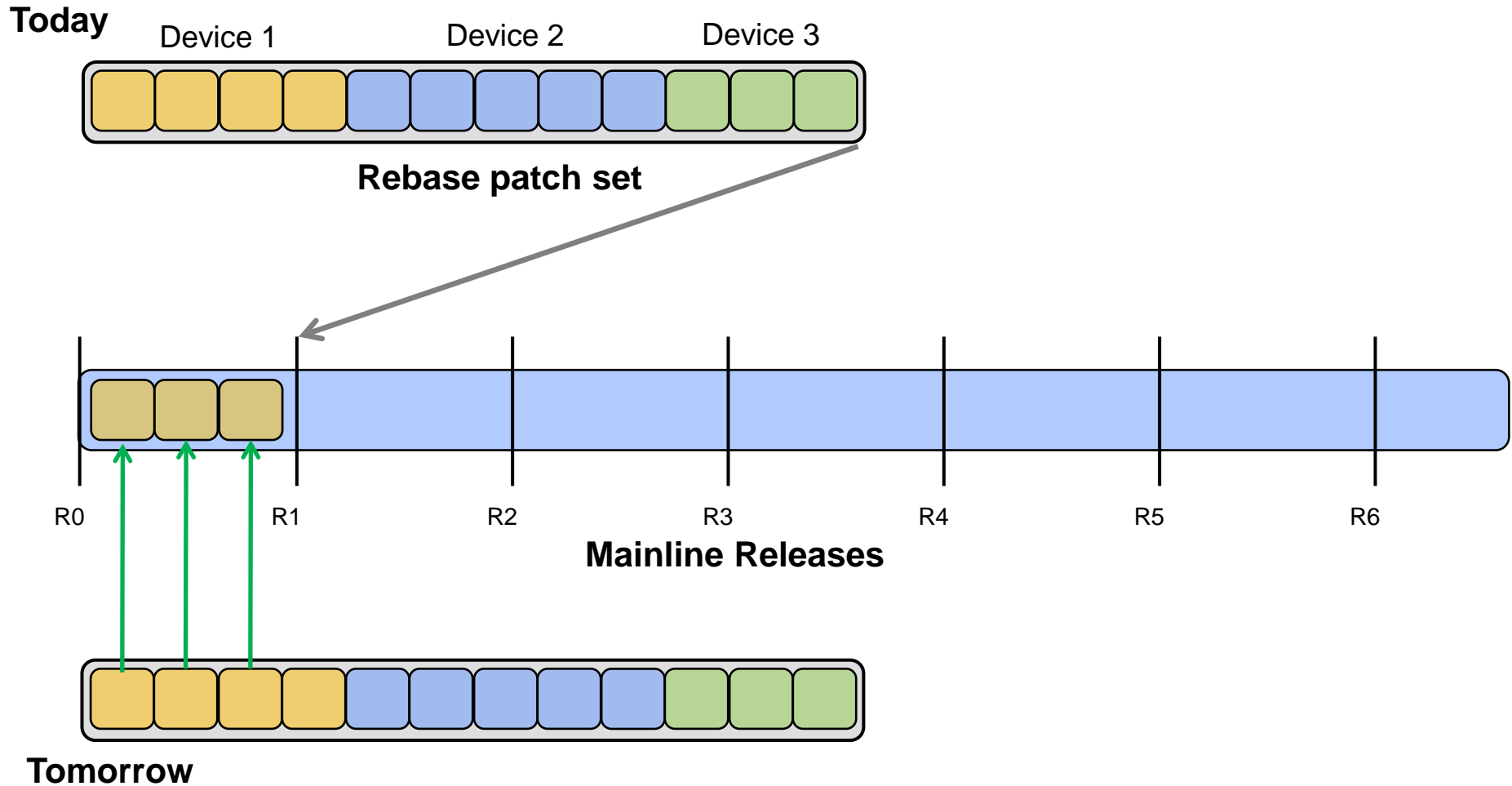
Bandwidth & Customer Support



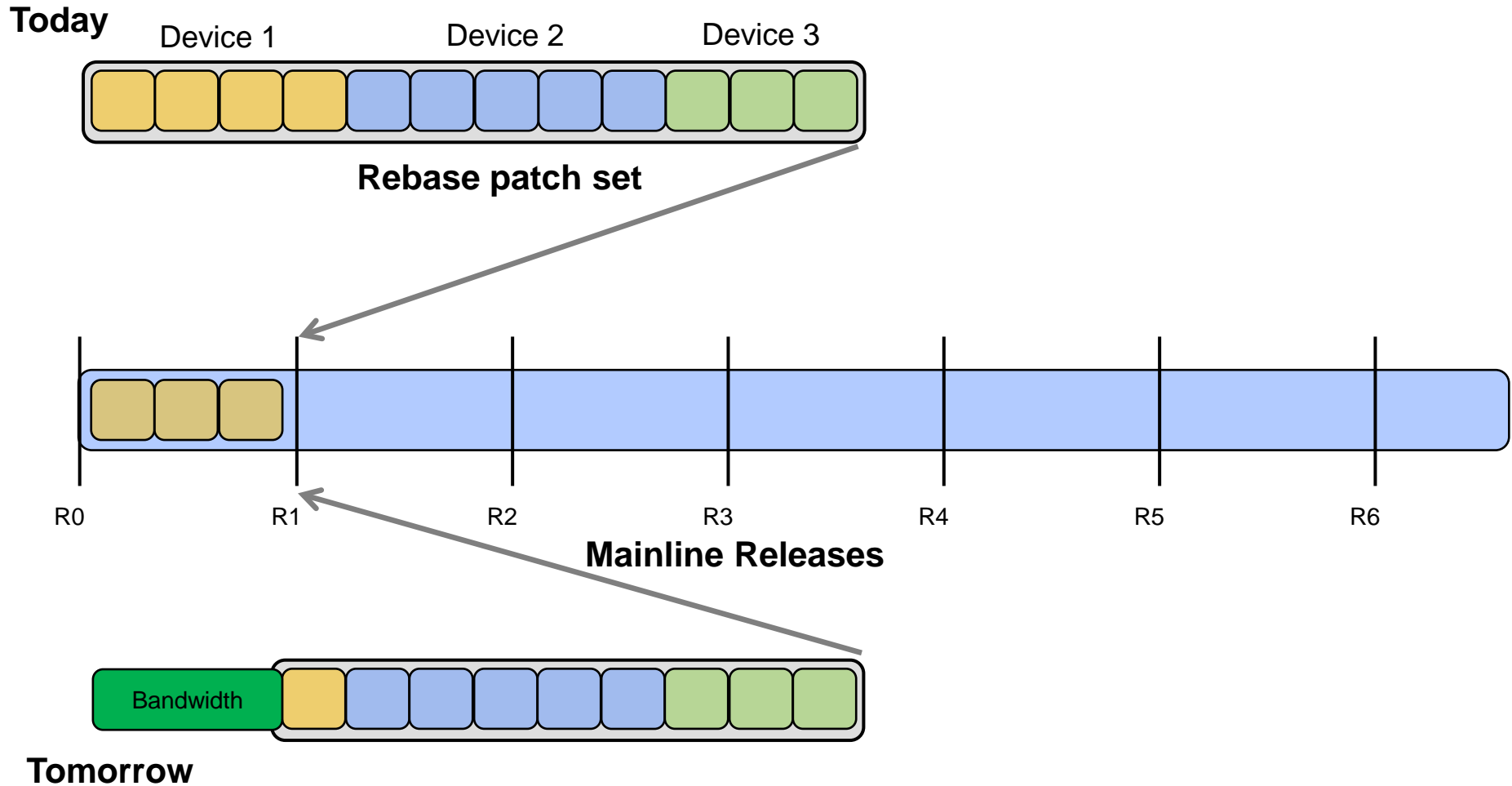
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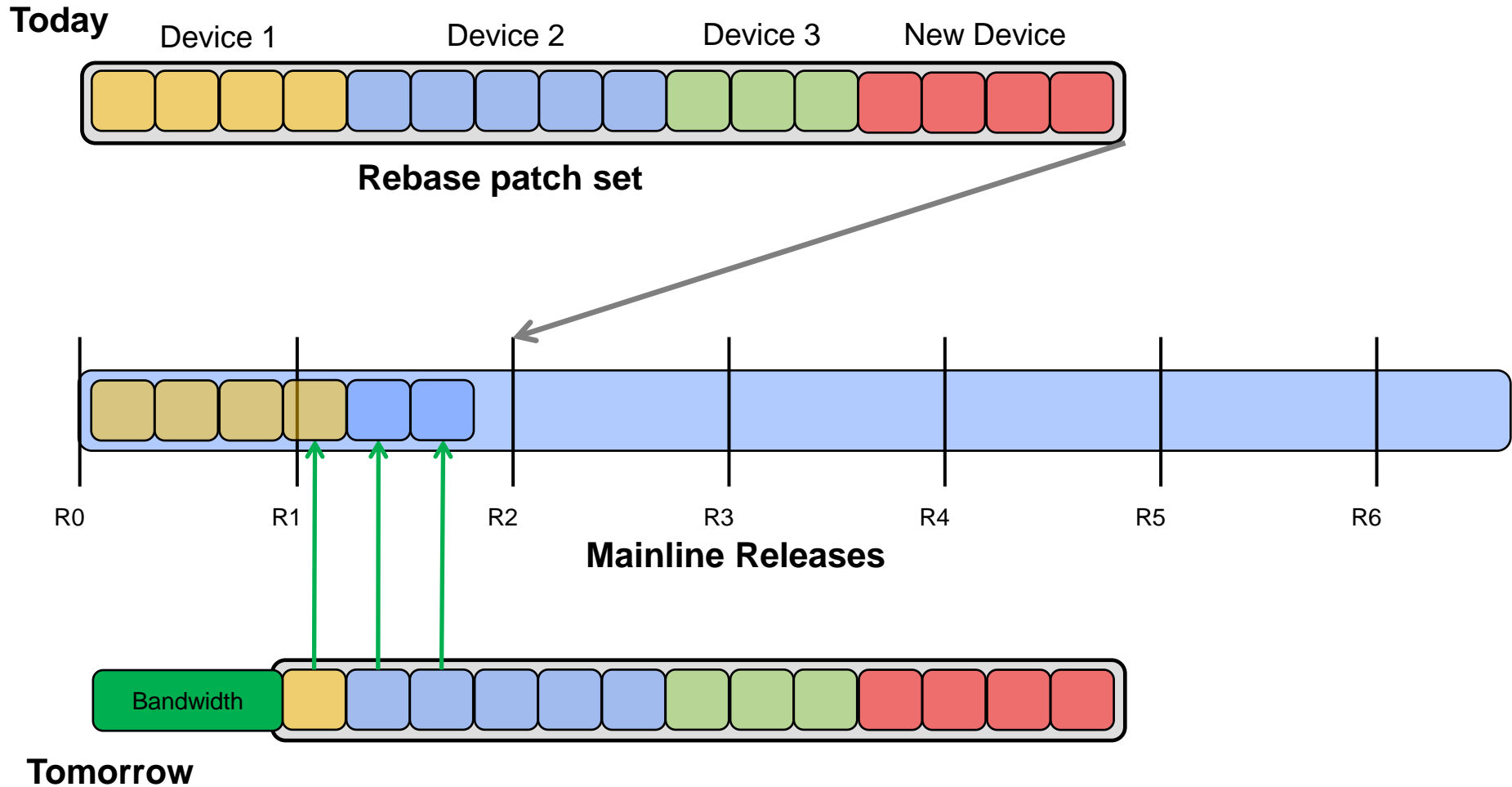
Bandwidth & Customer Support



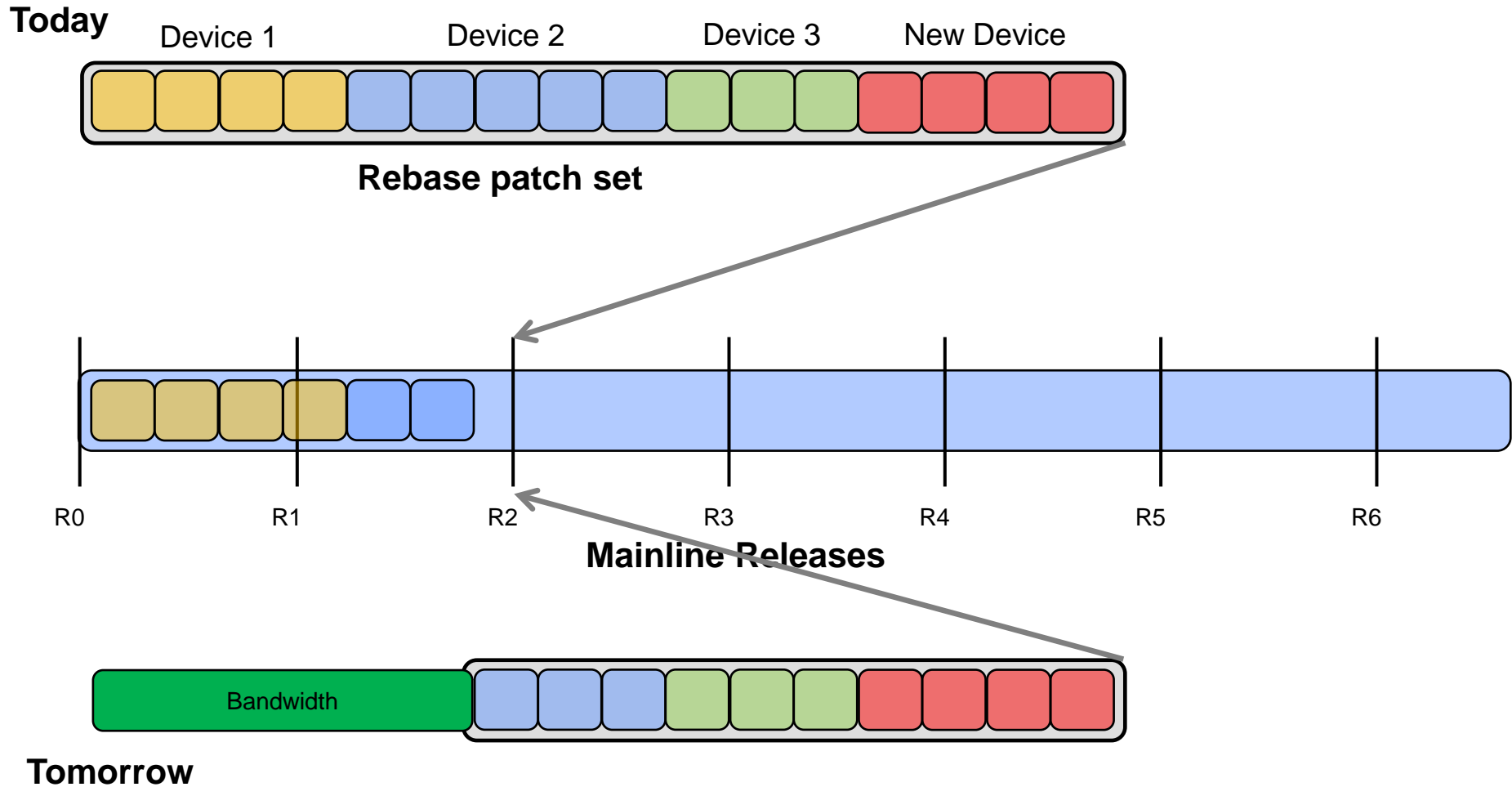
Bandwidth & Customer Support



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Bandwidth & Customer Support

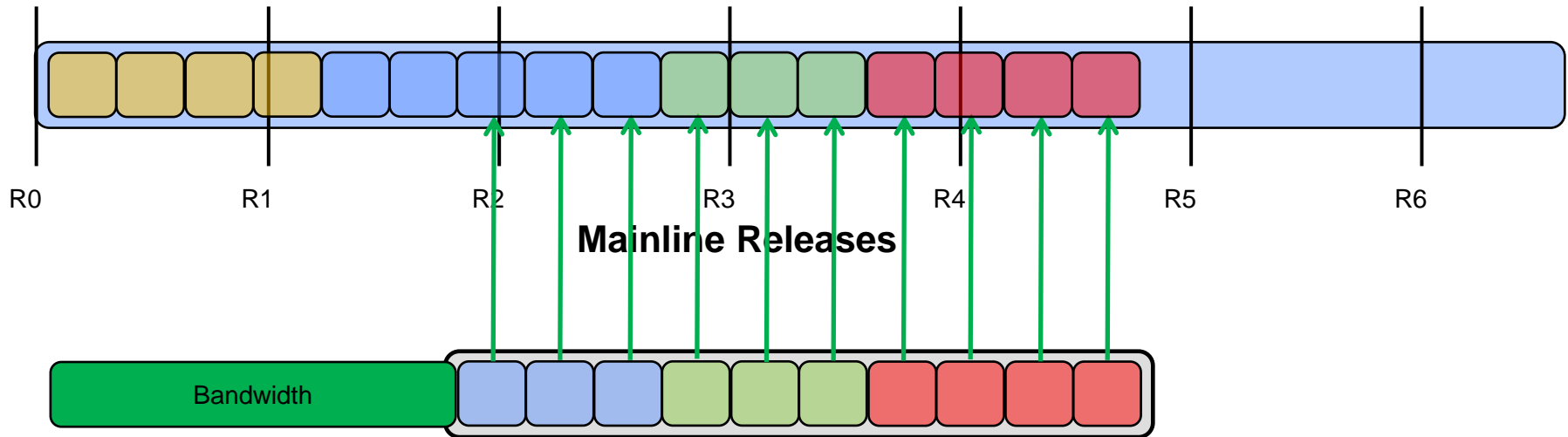


Bandwidth & Customer Support

Today



Rebase patch set



Tomorrow

12 months from now...

- True mainline support for our entire Linux solution across platforms
- “Just works” Linux
- Continued support of Existing Devices
- New Device development is incremental
- Easy board port to customer’s platforms
- Bandwidth to focus on more middleware/applications
- Potential to focus on Reference Designs



What Do We Need to Succeed?

Commitment from Management Team

- Realize this is a long term commitment that requires dedicated time & resources
- Allow us the time and dedication required to establish credibility with the mainline community and to generate momentum
- As real progress is made and other key contributors take interest in our mainline effort, let's make sure the door is open
- Promote our progress and commitment to mainline with customers. It becomes an incredible marketing tool!

Thank you



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BACK UP

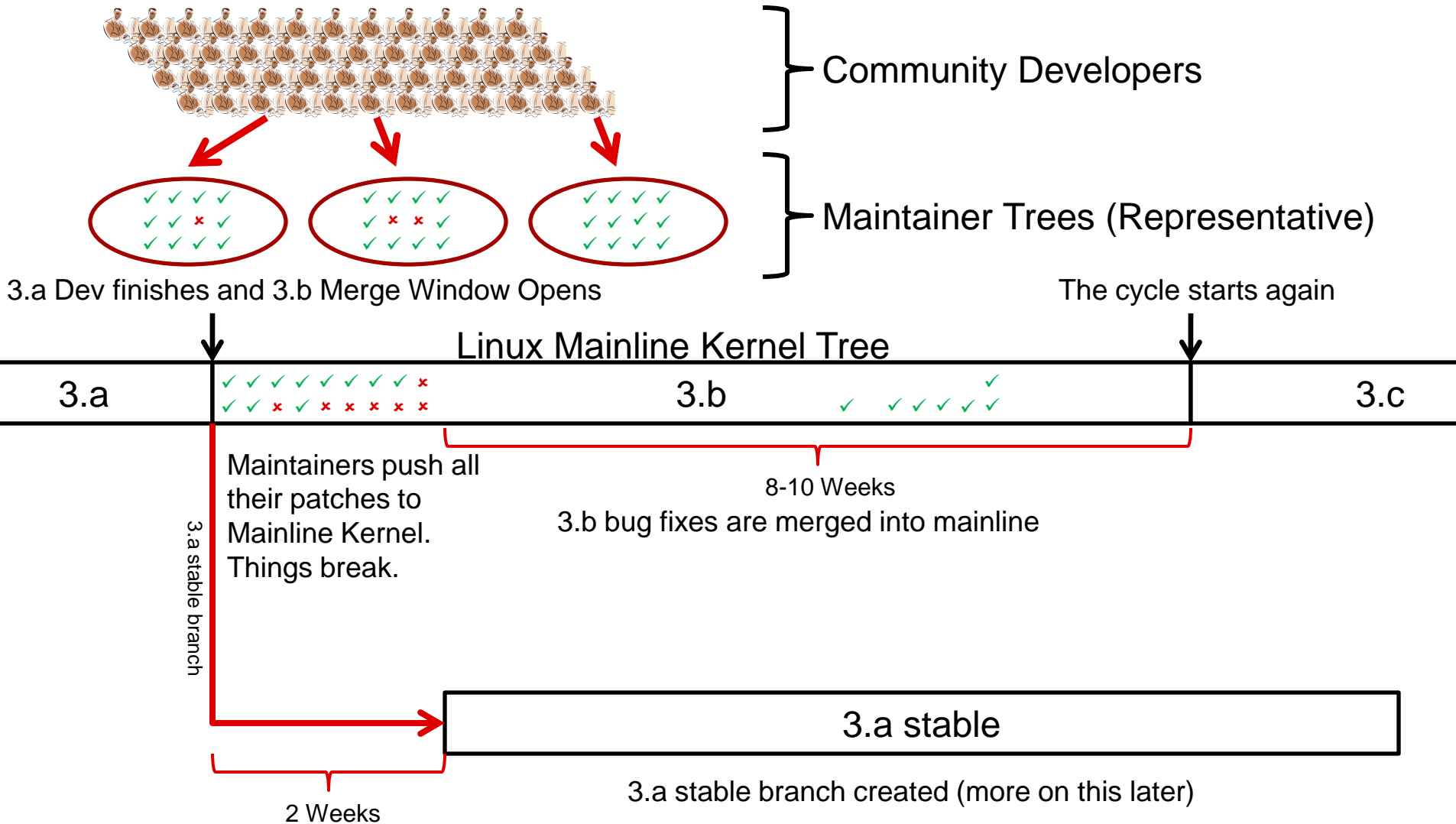
Developer's Perspective

- Infrastructure
- Integration Trees
- Testing
- Tracking Merge Windows
- Continuous Integration

Doesn't Mainline enable our competition?

- Does the assembly or interchangeable parts enable competitive auto manufacturers?
 - Yes
- One of two cases:
 - Our competition is not driving mainline as aggressive as we would like to in which case we can take the lead and use this as a differentiation tool
 - Our competition is already driving mainline meaning they can use it against us and we are forced to adapt to what they are doing
- Mainline = Commodity support
- By supporting mainline we are removing the burden of commodity support from our customers
- This allows our customers to innovate solutions instead of worrying about commodity support

Increasing Quality & Robustness



Stable Kernel Releases

