



LTSI Status update

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LinuxCon North America

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Agenda

- Background
- History
- LTSI kernel
- How you can use LSTI
- Next step
- Joining LTSI

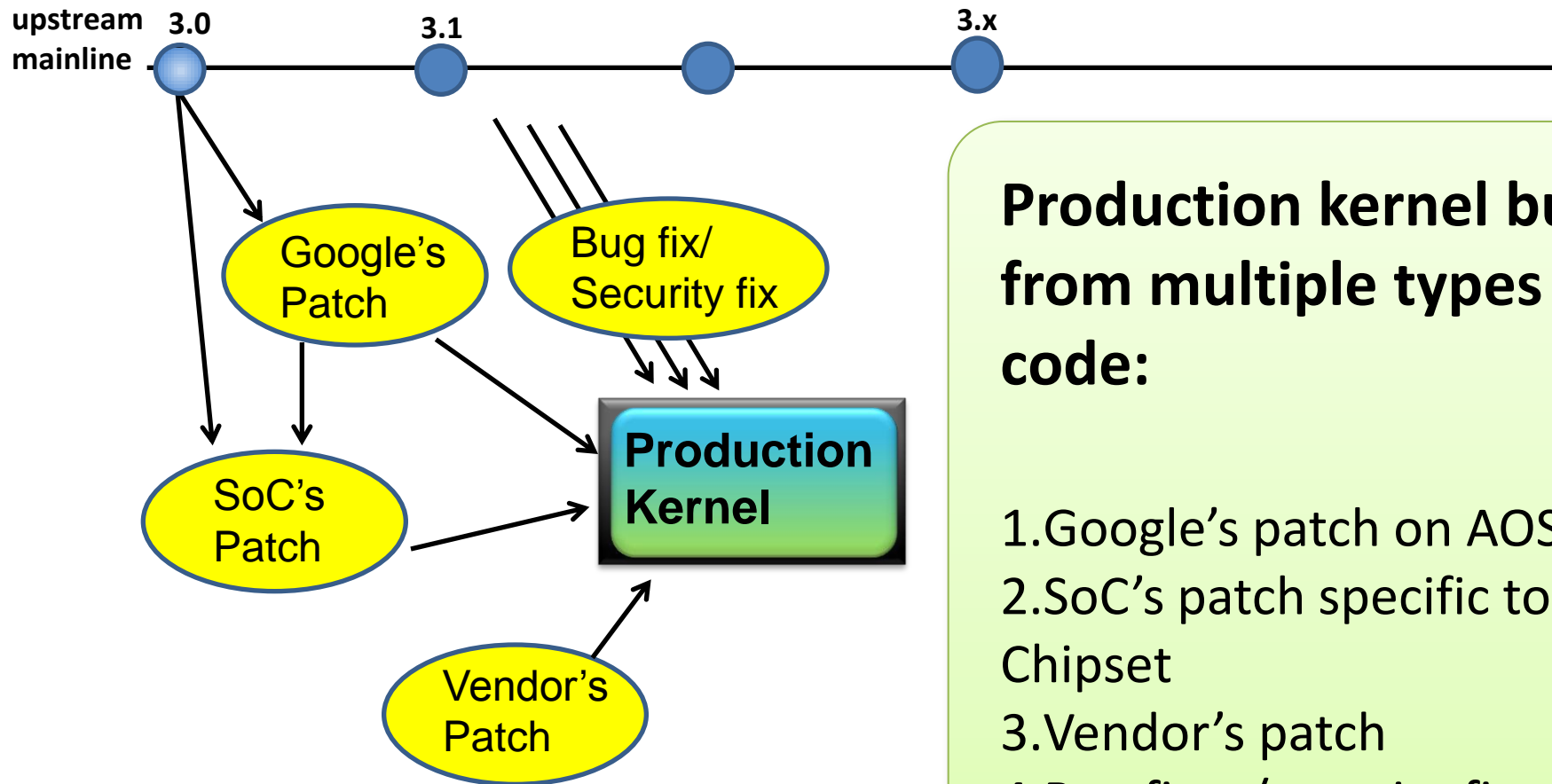
Initial discussion in CEWG

- Back in early 2011 at CE Working Group, Consumer Electronics companies were discussed their situation
 - We are using Linux for many of devices
 - We expected that using Linux will give us better environment at some part
 - However, there are some issue

Embedded Linux industry is:

- Using different kernel for each vendors
- Not depending on distro
 - Deep customization, No killer middleware ...
- Heavily depending on SoCs
 - Because of SoC specific code
- Not so much participation to the community
- Android is being adopted and becoming a key component

Case of Building an android product



Production kernel build from multiple types of code:

1. Google's patch on AOSP
2. SoC's patch specific to Chipset
3. Vendor's patch
4. Bug fixes/security fixes in upstream

4 way merging process is really hard for manufacturers

Android release cycle

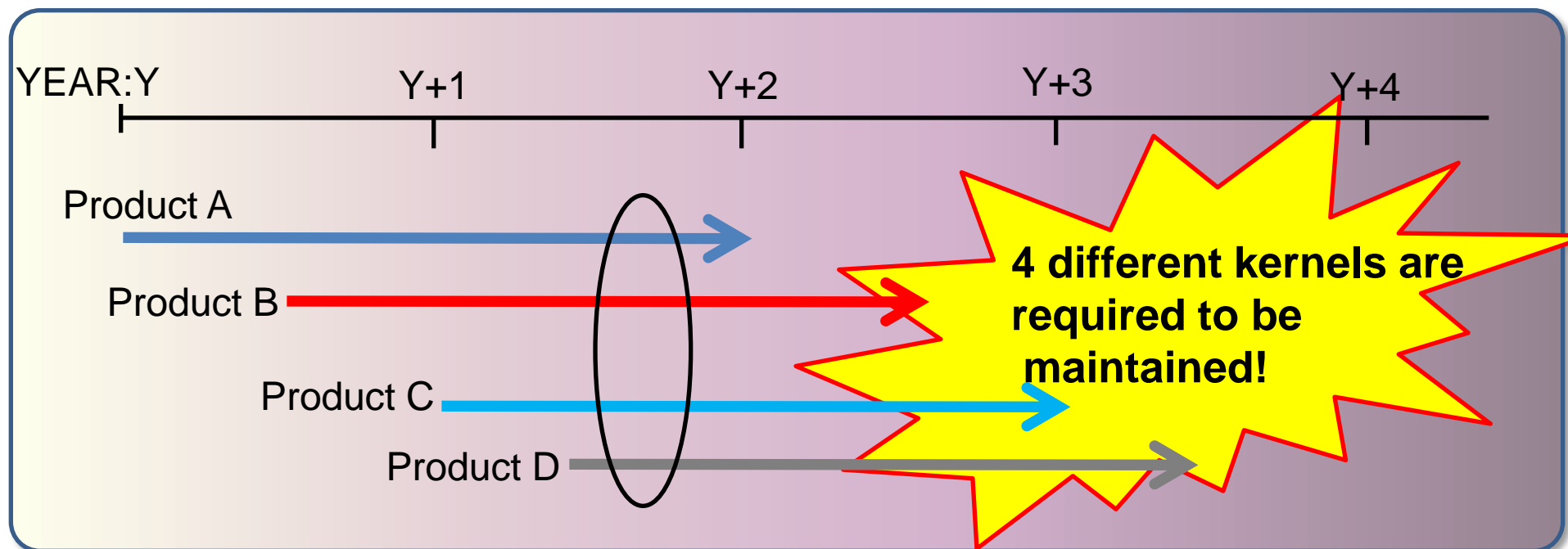
- Android is released about every 6 month
- Every time using latest kernel version

Android Version	Code Name	Kernel version	Release Date	Days
1.6	Donut	2.6.29	15,Sep, 2009	41
2.0	Éclair	2.6.29	26,Oct. 2009	206
2.2	Froyo	2.6.32	20,May. 2010	200
2.3	Ginger Bread	2.6.35	6,Dec. 2010	78
3.0	Honey Comb	2.6.36	22,Feb.2011	265
4.0	Ice Cream Sandwich	3.0	14,Nov.2011	

Stay same kernel at least a year could be great!

Manufacturer's product timeline

- 6 month release cycle means 4 of different kernels need to be maintained in 2 years
- A product life time is about 2 years



Industry would like to use same kernel with reasonable lifecycle as a common ground

LTSI (Long Term Support Initiative)

- Provide industry managed kernel and maintain Long term stably
- Provide common place for embedded industry
- Provide place to support upstream activity

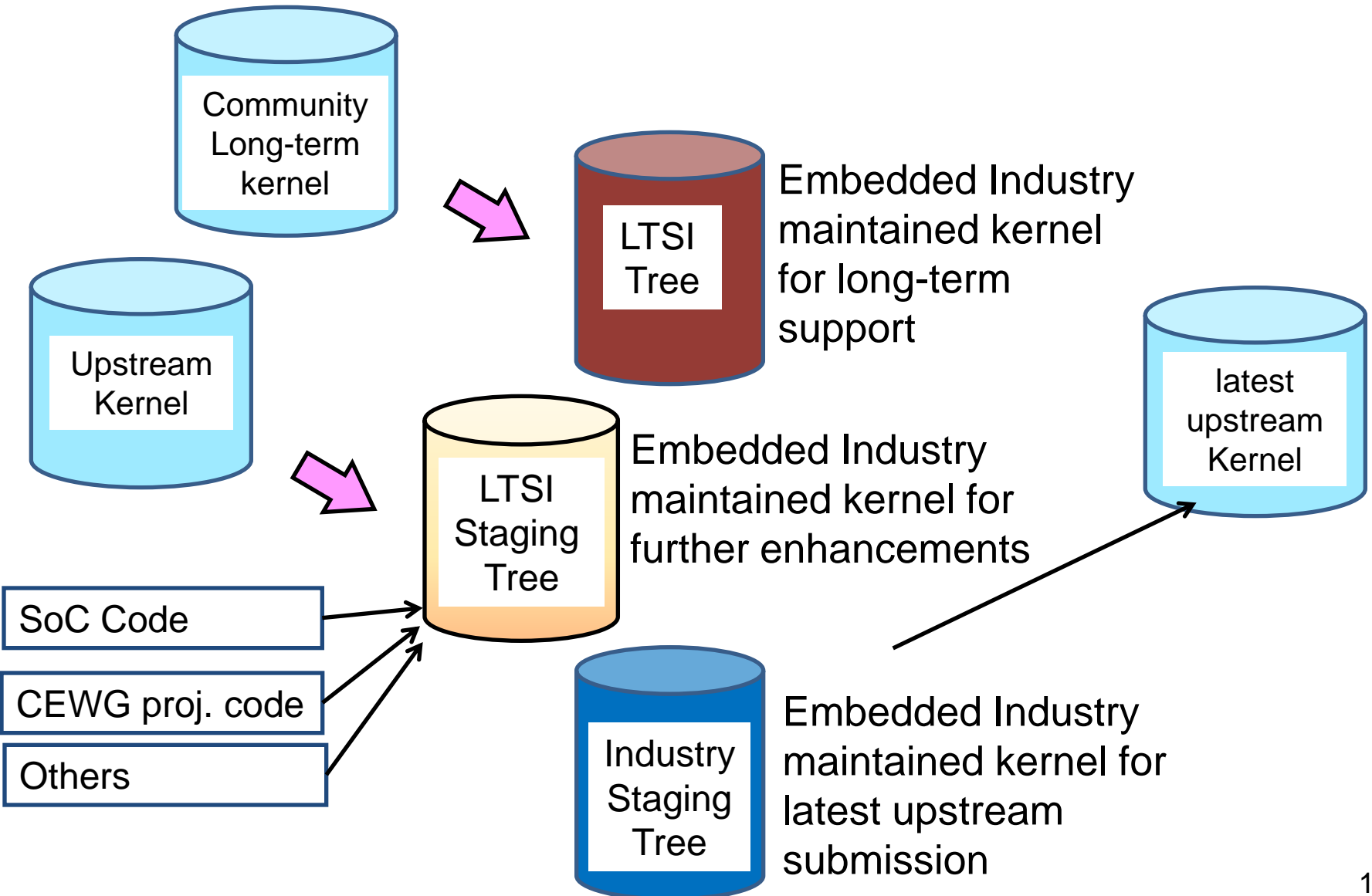


LTSI: Industry managed kernel

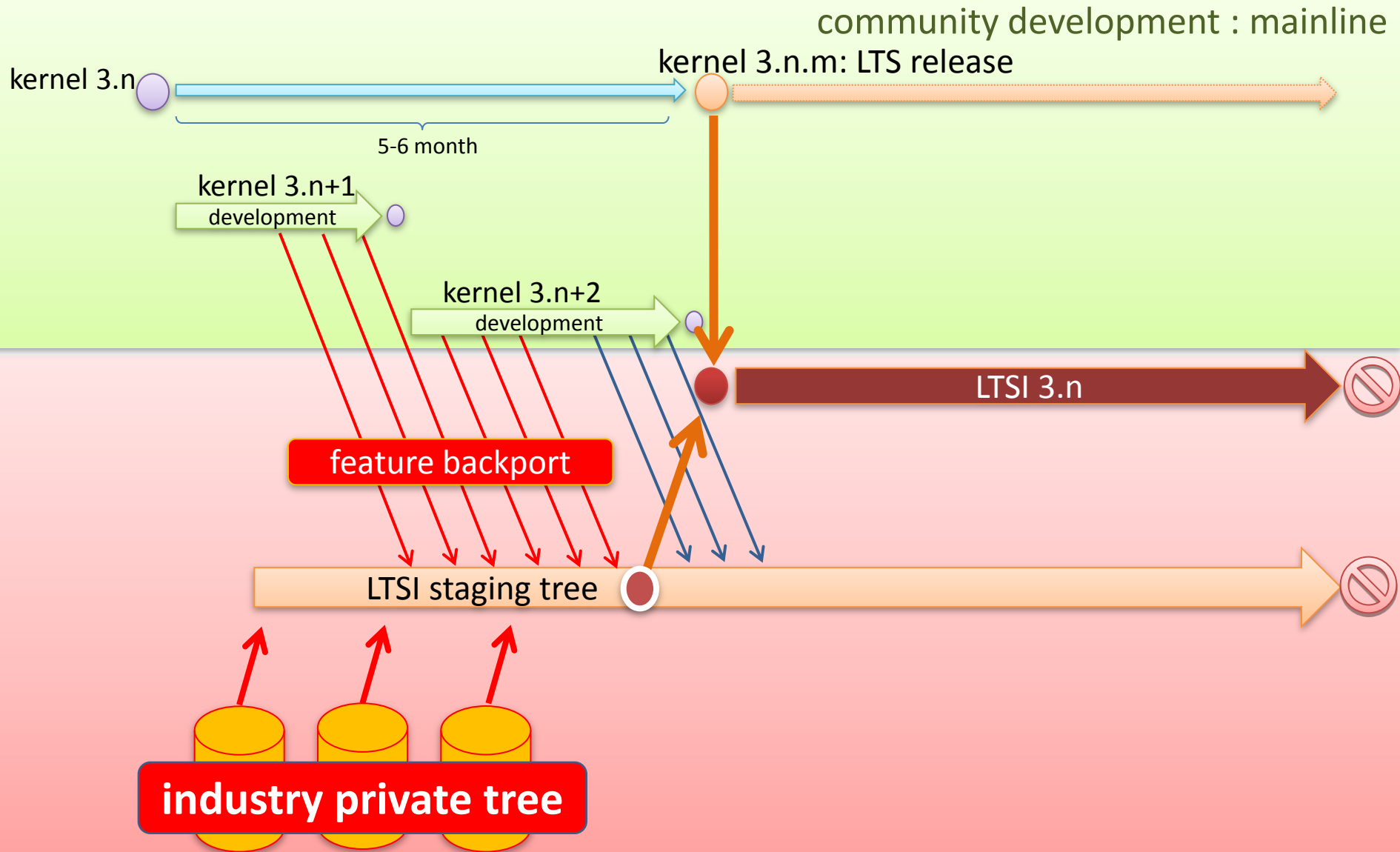


- LTSI maintains common Linux Kernel for Embedded for a reasonable life time
- LTSI defines common kernel every year. Kernel 3.0 is the 1st version
 - By using community LTS as a base, bug fixes from upstream will be automatically included
- Many companies are interested in using LTSI

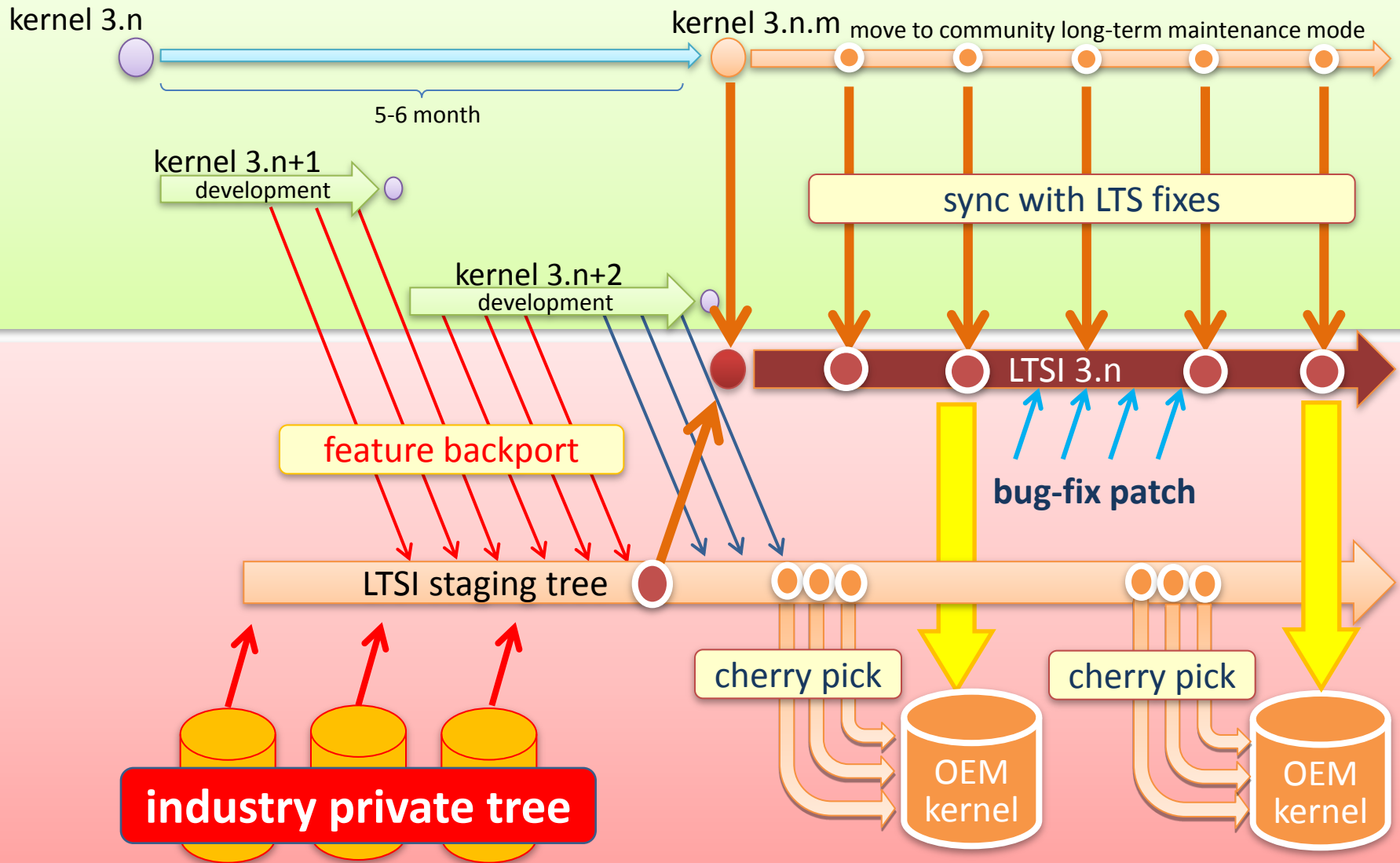
LTSI kernel trees



LTSI creation process



LTSI maintenance process



LTSI: Common place



- LTSI provides the place to share the information and experience among industry
 - Mailing list to share problem and discuss how to solve . Discussion to include features into LTSI
 - Open Workshop to share status among the industry
 - Close meeting : Industry Contact Meeting for more deep F2F discussion among the industry people
- Many companies are interested in using LTSI



LTSI Releases

LTSI git trees.

- [Current LTSI Staging Tree: 3.0.20](#) ([ltsi-staging-trunk/3.0.20/mirror-prod/line](#))

[more releases](#) ([download/releases](#))

Events

Learning, collaborating, developing.

Upcoming:

- [LinuxCon Japan](#) ([http://www.linuxfoundation.org/embedded/linuxcon-japan](#))
Jun 6, 2012 - Jun 8, 2012
Yokohama, Japan
- [LinuxCon North America](#) ([http://www.linuxfoundation.org/embedded/linuxcon](#))
Aug 29, 2012 - Aug 31, 2012
San Diego, CA
- [Embedded Linux Conference Europe](#) ([http://www.linuxfoundation.org/embedded/linux-conference-europe](#))
Nov 5, 2012 - Nov 7, 2012
Barcelona, Spain

Past:

Participating Organizations

See who is involved in LTSI.



A list of participating organizations in LTSI, each with a logo and a URL. The list includes:

- [FUJITSU](#) ([http://www.fujitsu.com](#))
- [HITACHI](#) ([http://www.hitachi.com](#))
- [hp](#) ([http://hp.com](#))
- [IBM](#) ([http://www.ibm.com](#))
- [intel](#) ([http://www.intel.com](#))
- [montavista](#) ([http://www.montavista.com](#))
- [NEC](#) ([http://www.nec.com](#))
- [NVIDIA](#) ([http://www.nvidia.com](#))
- [Panasonic](#) ([http://www.panasonic.com](#))
- [Qualcomm](#) ([http://www.qualcomm.com](#))
- [QUIC](#) ([http://www.qualcomm.com](#))
- [RENEASAS](#) ([http://www.renesas.com](#))
- [SAMSUNG](#) ([http://www.samsung.com](#))
- [SONY](#) ([http://www.sony.com](#))
- [TOSHIBA](#) ([http://www.toshiba.com](#))
- [TI/EXYNOS](#) ([http://www.ti.com](#))
- [WIND RIVER](#) ([http://www.windriver.com](#))

**Participating Organizations
to LTSI**

<http://ltsi.linuxfoundation.org/>

LTSl: support upstream activity



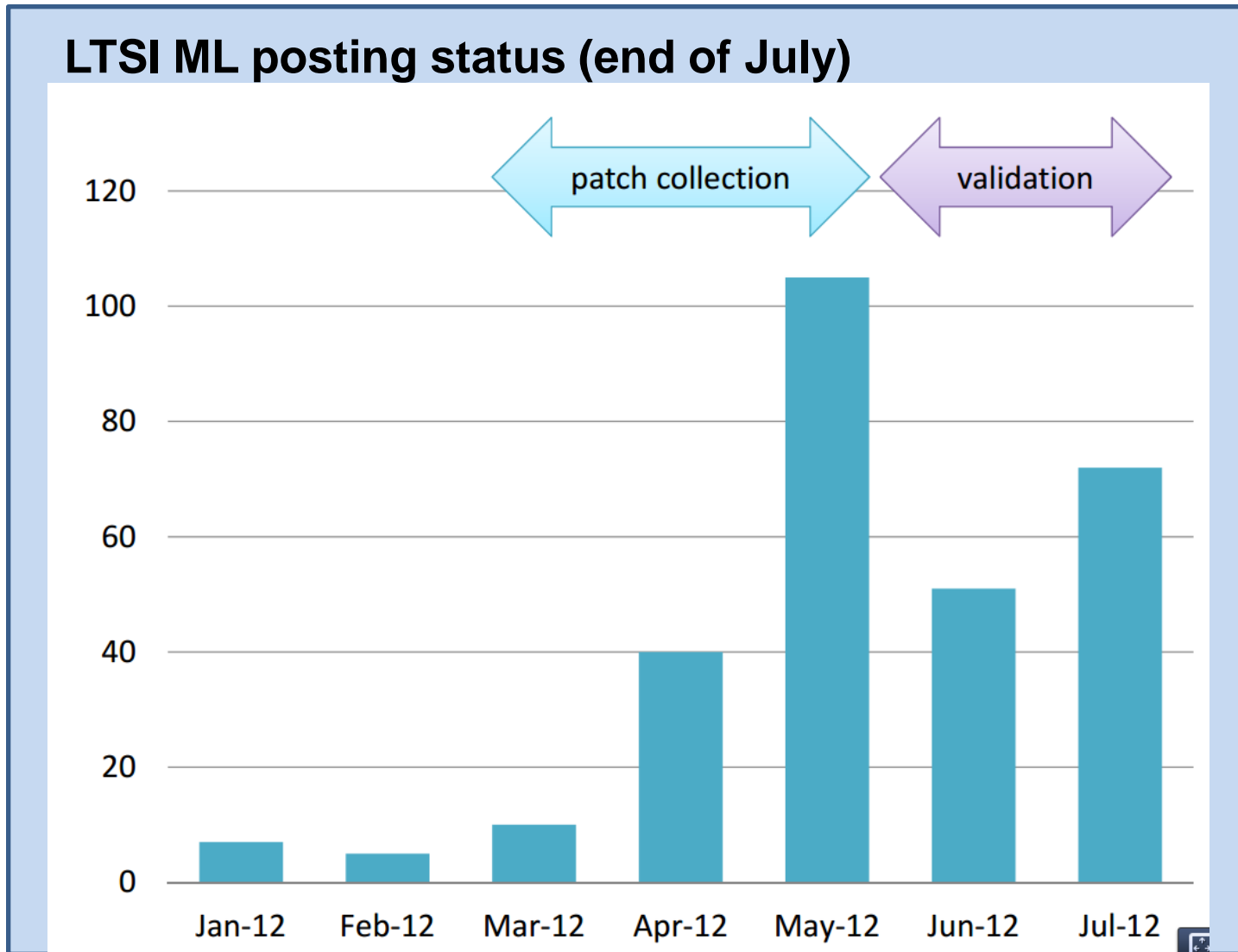
- Many of developer in the embedded industry need to know how to work with community
- LTSl will provide help their upstream activities
 - Give suggestion how their patches can be merged into upstream
 - Review and discussion for proposed patches to be merged
 - Many of discussion under way
- Upstream activities for the embedded industry is beneficial for the company

History

- 2011.10.26 LTSI project lunched
- 2012.02.16 LTSI 3.0 merge window opened
- 2012.05.31 LTSI 3.0 merge window closed
- 2012.06.08 1st Industry Contact Meeting ICM @Yokohama
- 2012.07.30 LTSI 3.0 code released
- 2012.08.29 Workshop @San Diego

Current Status

- LTSI3.0 kernel had been released end of July



LTSI 3.0 extra stuff



- More than 800 extra industry demanded patches included on 3.0 LTS kernel

Extra stuff added on top of community 3.0-LTS

- patches.android
- patches.ltsi
- patches.lttng
- patches.pramfs
- patches.runtime_pm
- scripts
- patches.armadillo800eva

FAQ of LTSI



- Q: How we can use LTSI 3.0?
- A: LTSI 3.0 includes extra staff + sync with community LTS. So, that will become one of referenced kernel.
- A: LTSI has a mailing list. You can share the experience and the problem about 3.0 kernel for embedded.

FAQ of LTSI



- Q: Until when LTSI 3.0 will be maintained?
- A: LTS of 3.0 kernel will be ended in July 2013. LTSI 3.0 will also be finished at the same time
- Q: Why LTSI picked 3.0 kernel?
- A: Many of key embedded project decided to use 3.0 kernel as long term such as Android
- Q: What version does LTSI will pick for next step.
- A: 3.4 kernel is the next version.

3.4 kernel will be a next -longterm

Posted in LKML

Date: Mon, 20 Aug 2012 15:24:53 -0700

From: Greg KH <>

Subject: the 3.4 kernel tree will be -longterm

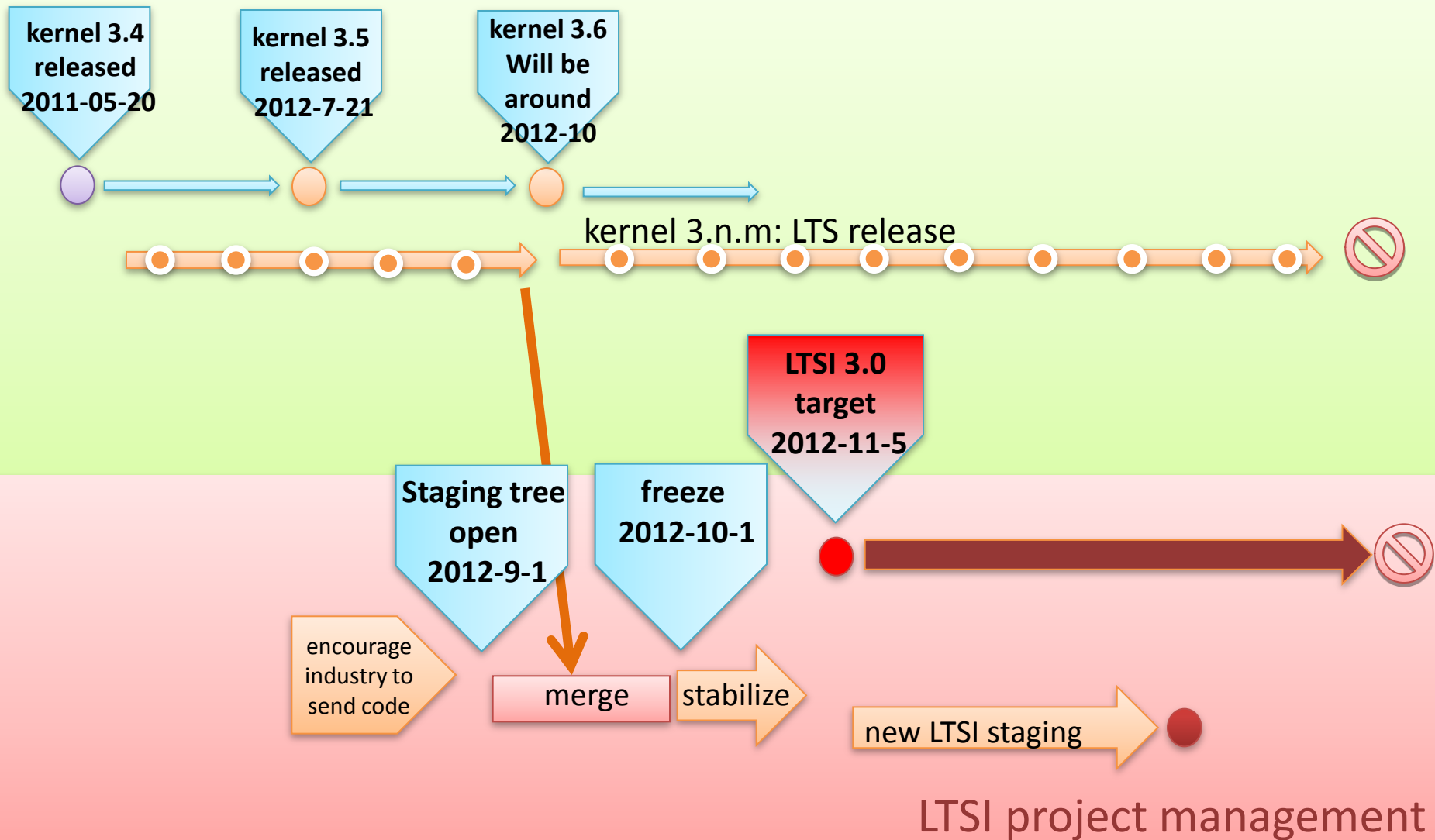
As I'm getting a few questions about this, and I realized that I never sent out an email about this, yes, the 3.4 kernel tree will be the next -longterm kernel that I will be maintaining for at least 2 years.

Currently I'm maintaining the following stable kernel trees for the following amount of time:

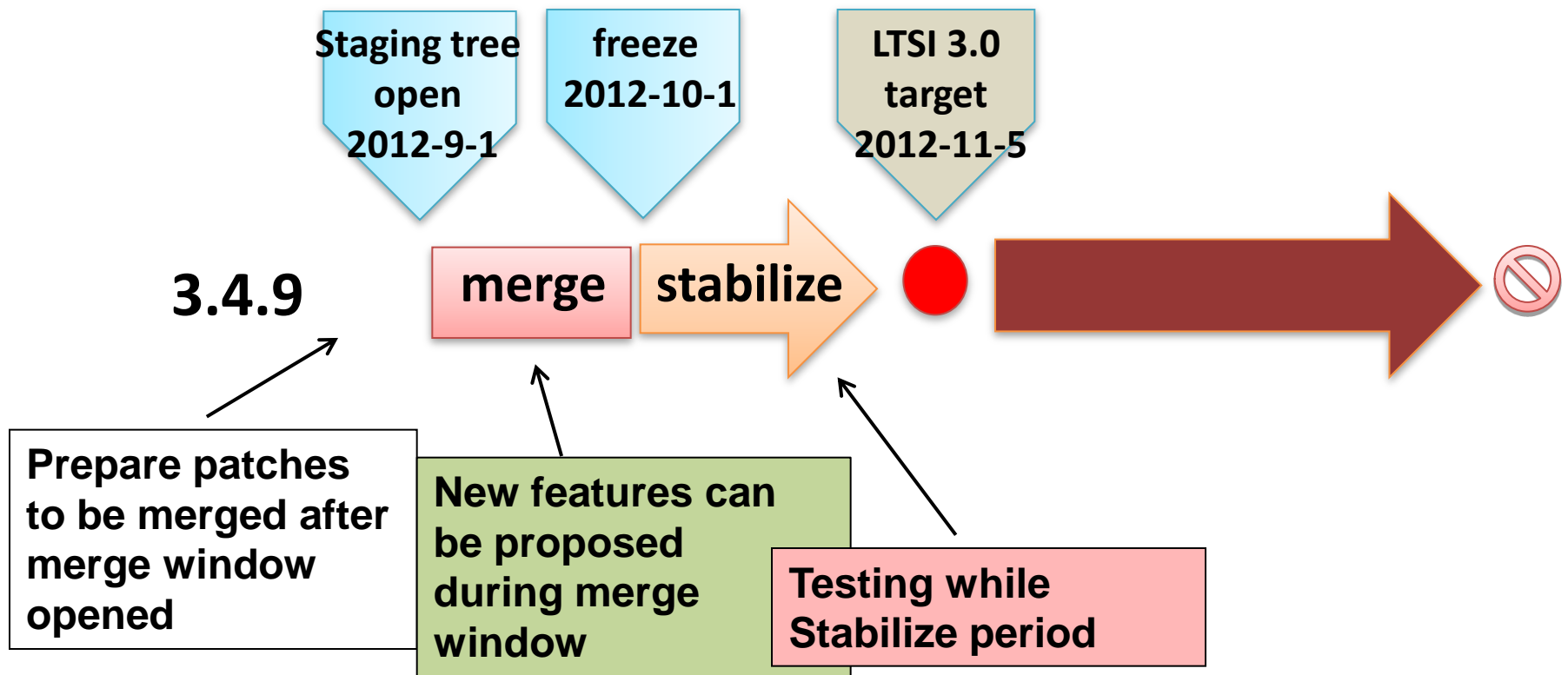
- 3.0 - for at least one more year

- 3.4 - for at least two years

LTSI 3.4 release plan



LTSI 3.4 release plan



What's next ?



- LTSI 3.4 staging tree will be opened early September
 - If your embedded product/project team is not yet decided next kernel version, you should consider to use 3.4. It will be maintained longer term.
 - If you wanted to include your in-house patches into LTSI, please prepare to send patch to LTSI
 - If you have any request to include new features not included in 3.4 kernel, please ask us. We will discuss about that in ML

What's next ?



- LTSI 3.4 staging tree will be closed at the end of September
 - You should finalize your patches to be included before end of September
 - Take care of your patches to not be removed by other patches
 - We also hope you to join the testing activities for October
- LTSI 3.4 is planned to release early November

How you can participate LTSI

- Follow on Twitter account:

@LinuxLTSI



LinuxLTSI

@LinuxLTSI

LTSI stands for Long-Term Support Initiative. A group of CE Working Group of the Linux Foundation to provide Long-Term and stable Linux for Industry

- Join mailing list:

<https://lists.linuxfoundation.org/mailman/listinfo/ltsi-dev>

Or send email with word 'help' as subject to:

ltsi-dev-request@lists.linuxfoundation.org

LTSI-dev -- A list to discuss patches, development, and other things related to the LTSI project

About LTSI-dev

English (USA)

To see the collection of prior postings to the list, visit the [LTSI-dev Archives](#).

Using LTSI-dev

To post a message to all the list members, send email to ltsi-dev@lists.linuxfoundation.org.

How you can participate LTSI

- Git tree can found:
 - <http://git.linuxfoundation.org/?p=ltsi-kernel.git;a=summary>
and can be cloned by doing:
`git clone git://git.linuxfoundation.org/ltsi-kernel`

git://git.linuxfoundation.org / [ltsi-kernel.git](http://git.linuxfoundation.org/?p=ltsi-kernel.git) / summary



[summary](#) | [shortlog](#) | [log](#) | [commit](#) | [commitdiff](#) | [tree](#)

commit re

description LTSI kernel patches
owner Linux Foundation public git account
last change Wed, 15 Feb 2012 06:03:52 +0000

SUMMARY

- **LTSI provides stable kernel.**
 - **Define a version in every year, maintain about 2 years**
 - **During 2 years, bug/security fixes are back ported from upstream**
- **LTSI kernel is for Industry, it includes ;**
 - **back ported features from upstream, important features for embedded, SoC code and industry changes**
- **LTSI is provide place to share the code, experiences and fixes**
 - **That can reduce your development cost**
- **LTSI supports mainlining industry's patch**
 - **Accept patches same as LTSI version with providing review and recommendations**
 - **Provide opportunity to share/learn upstream activities by the Industry Contact Meeting**

THANK YOU

