LTSI Project update

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Embedded Linux Confenrece

Key activities of LTSI
Long Term Support Initiative

- ☐ Provide a industry managed kernel and maintain Long term based on LTS

- ☐ Provide a common place for embedded industry to share information: Mailing list, Workshop …

- ☐ Provide place to support upstream activity : Help industry developer

LTSI: Industry managed kernel

- LTSI defines common kernel every year and maintains for 2 years

- LTSI adopts community Long term kernel as a base. Therefore, bug/security fixes from upstream are applied.

- LTSI kernel = long term + additional patches

- After 2 years term finished, possible to take over maintenance for longer term

LTSI: Common place

- LTSI provides the place to share information and experience among industry
  - Mailing list to share problem and discuss how to solve
  - Open Workshop to share status
  - Closed meeting for more deeper F2F discussion
- Share the information will reduce the development cost
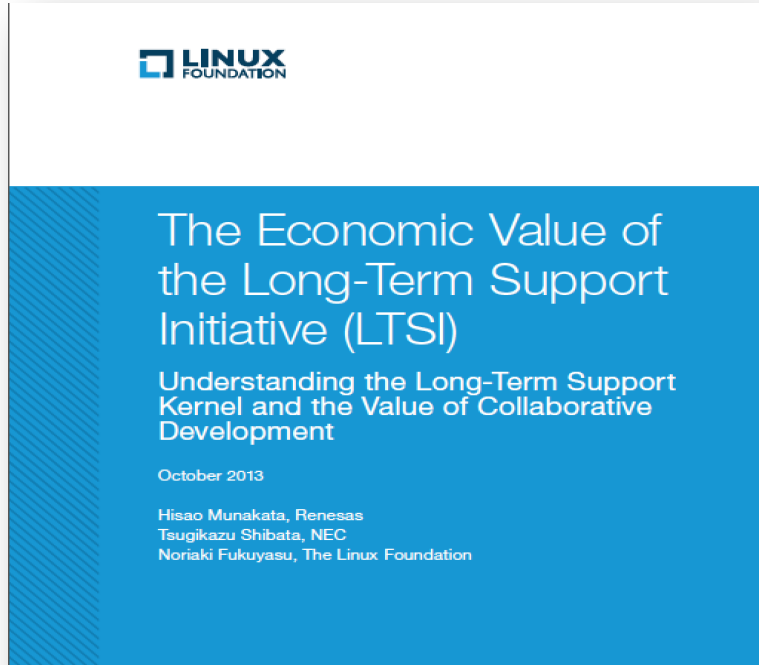
LTSI: Support upstream activity

- Developer in the embedded industry may wanted to know how to work with community
- LTSI provides help upstream activities
  - Provide suggestion, review and discussion for proposed patches to be merged
  - Many of discussion under way
- Merging patches to upstream is also reduce the cost of each companies

LTSI history

- Established 2011 in Prague
- Yearly release pace :
  - 2011: 3.0
  - 2012: 3.4
  - 2013: 3.10
- LTSI = LTS + Industry demanded patch (Back ports from the newer version)
  - We have gathered great number of patches from Intel, Toshiba, Renesas and others

White paper: Economic value of LTSI

The Economic Value of the Long-Term Support Initiative (LTSI)

Understanding the Long-Term Support Kernel and the Value of Collaborative Development

October 2013

Hisao Munakata, Renesas
Tsugikazu Shibata, NEC
Noriaki Fukuyasu, The Linux Foundation

Maintenance cost of single LTS version is about 3M$

http://www.linuxfoundation.org/publications/ workgroup/value-of-ltsi

Case of Android

- 6 month release cycle to 12-18 month
- All the non upstream patches merged into mainline and then becomes no dependency on kernel version
- ICS : 3.0, Nexus 4=Jelly bean: 3.4

  Nexus5=Kitkat: 3.4
- LTSI is keep sync with Google Android

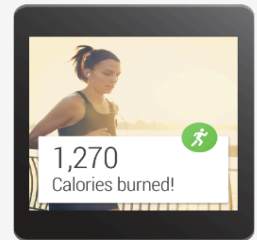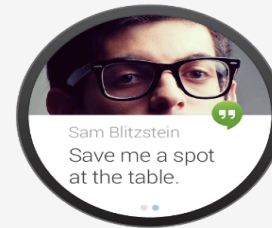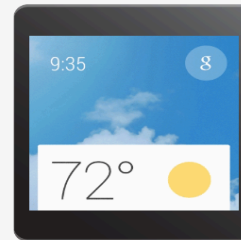# Case of Google's move

- Open Automotive Alliance (Established: 2014/2)

  - With Audi, GM, Honda, Hyundai, NVIDIA

  - Bring the best of Android into Automotive
  - Try to enable better integration between Cars and Android devices
  - By end of 2014

- Android ware (Announced 2014/3)

  Information that moves with you Small, powerful devices, worn on the body. Intelligent answers to spoken questions.

Automotive Grade Linux

- Established 2012, Toyota, Nissan, Jaguar Land rover and many of Tier one companies

- Announcement of reference platform already there with specification and binary based on Tizen IVI

- Expected life time will be around 10 years

Automotive Grade Linux (AGL) is an open collaboration between contributors from the Automotive Industry, the Communications Industry, Semiconductor Industry, Academia, Community and others, combining open source components into a core operating system software stack suitable for automotive applications.

Case of Social Infrastructure Solution

- Increasing requirements and possibility for Social infrastructural service
  - Arena solution for sports event
    - Major time, distance../ provide personal infor/ deliver live view with high density resolution
  - Control system for social infrastructure
    - Dam/Power plant/traffic control/train control
  - Adoption for more critical potion being considered
- Very long term lifetime: run over 10 years
- Real time-ness maybe important in some case
- Reliability is one of key aspects

Case of Internet of Things

- There will be nearly 26 Billion devices on IoT by 2020 (Gartner, 2013/12)

- IoT supposed to connect devices to the Internet and works automatically without human operation
  - Connection to the internet
  - Automated operation to filer and transfer data from sensors

- Linux is most suitable for IoT
  - Be able to handle variety of devices

Embedded Linux in next few years

- Possibility of "Embedded" Linux adoption is expanding with increasing use case of new business opportunity

- Stable and reliable Linux eco system is fundamental portion now and the future

THANK YOU

How you can participate LTSI

- Follow on Twitter account:

  @LinuxLTSI

- Web:

  http://ltsi.linuxfoundation.org

- Mailing list:

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

- Git tree :

  http://git.linuxfoundation.org/?p=ltsi-
  ernel.git;a=summary

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

LONG TERM SUPPORT INITIATIVE