SFO15-104:
The Reference Platform Lead Project

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Presented by

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Event

SFO15

Linaro connect — San Francisco 2015

Agenda

- **What is the Reference Platform Lead Project**
- What hardware is it delivered on
- Questions so far
- Discussion and input

Goals for the Proposed Project*

- Reference software for 96Boards products for use by member product teams and the community to reduce engineering effort and time to market for derivative products
- End to end open source use cases from Bootloader to Application using a set of "building blocks"
- Easy to "port" onto other (non-96Boards) products
- Upstream support for 96Boards products

*Project is in discussion at Linaro TSC

Nomenclature

- ## Reference Platform Build (RPB)

  - An end to end open source software implementation delivered on a reference 96Boards hardware product.
    Example: Bootloader, kernel and AOSP delivered as an RPB on HiKey
    Example: UEFI/ACPI, CentOS and Hadoop delivered as an RPB on HuskyBoard

- ## Component

  - A software building block or component that is used to create an RPB.
    Examples: A Debian 8.0 "Jessie" distribution user space build, OP-TEE, an OpenStack build

First Proposed Release - 15.10

Components	CE	EE
• Bootloader Software	✔	✔
• Kernel	✔	✔
• Distribution(s)		
• Debian	✔	✔
• AOSP	✔	
• CentOS		✔
• Additional software		
• OPTEE	✔	
• OpenJDK	✔	✔

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15.10 Proposed Release Deliverables

- Binary images for supported 96Board(s)
- Documentation on how to build the images from source code
- Additional Documentation
- Board running release in Linaro CI lab
- Release Test & QA report

96Boards

Proposed 15.10 Specification

- The Lead Project is under discussion at the Linaro TSC
- The proposed 15.10 specification is here for Linaro members and will be made open if the Project is approved
- Additional functionality and board support will be made available on a quarterly basis

96Boards

Future Plans/Ideas

- U-Boot
- Yocto/OpenEmbedded
- Big Data use case RPB (LEG)
- Secure media DRM RPB (LHG)
- Robotics or UAV targeted RPB (96Boards)

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What Hardware is it provided on

- 96Boards CE and EE Boards
    - May need member landing team or engineer support
    - Will utilize deliverables from Linaro teams
        - Examples: OP-TEE, bootloader, KVM etc.
- Members and the Community can port to other boards
    - For example a similar member product, RPi etc.
    - We are looking at hosting 3rd party RPBs on the 96Boards site
        - Community RPBs for 96Boards
        - RPBs ported to non-96Boards

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Isn't this a Linaro Distribution?

- ## Definitely not
  - For mobile/embedded initial reference platform builds (RPBs) of OE/Yocto, AOSP and Debian are planned
  - For enterprise the builds will use the distribution "out of the box" for ARMv8 - e.g. Debian, CentOS, RedHat DP etc.
  - A set of user space packages has to be selected for each RPB - this will depend on the use case and will tend to be the minimum for the use case allowing users to then add additional packages/features as needed.

What Resources are Needed

- The 96Boards team will rely on "components" from other Linaro teams - the Reference Platform will be coordinated by the 96Boards Tech lead
  - The 96Boards team is testing and documenting the RPBs on 96Boards platform(s)
  - Landing team output is used for HiKey, DragonBoard410c etc.
  - We have a 96Boards release manager and a Linaro documentation engineer dedicated to the lead project - we also re-use the resources already in place to create and test monthly releases of LCR, LSK etc.
  - We expect members to add engineers to the project for their own hardware - for example Qualcomm and HiSilicon engineers are already working on upstreaming for their 96Boards hardware
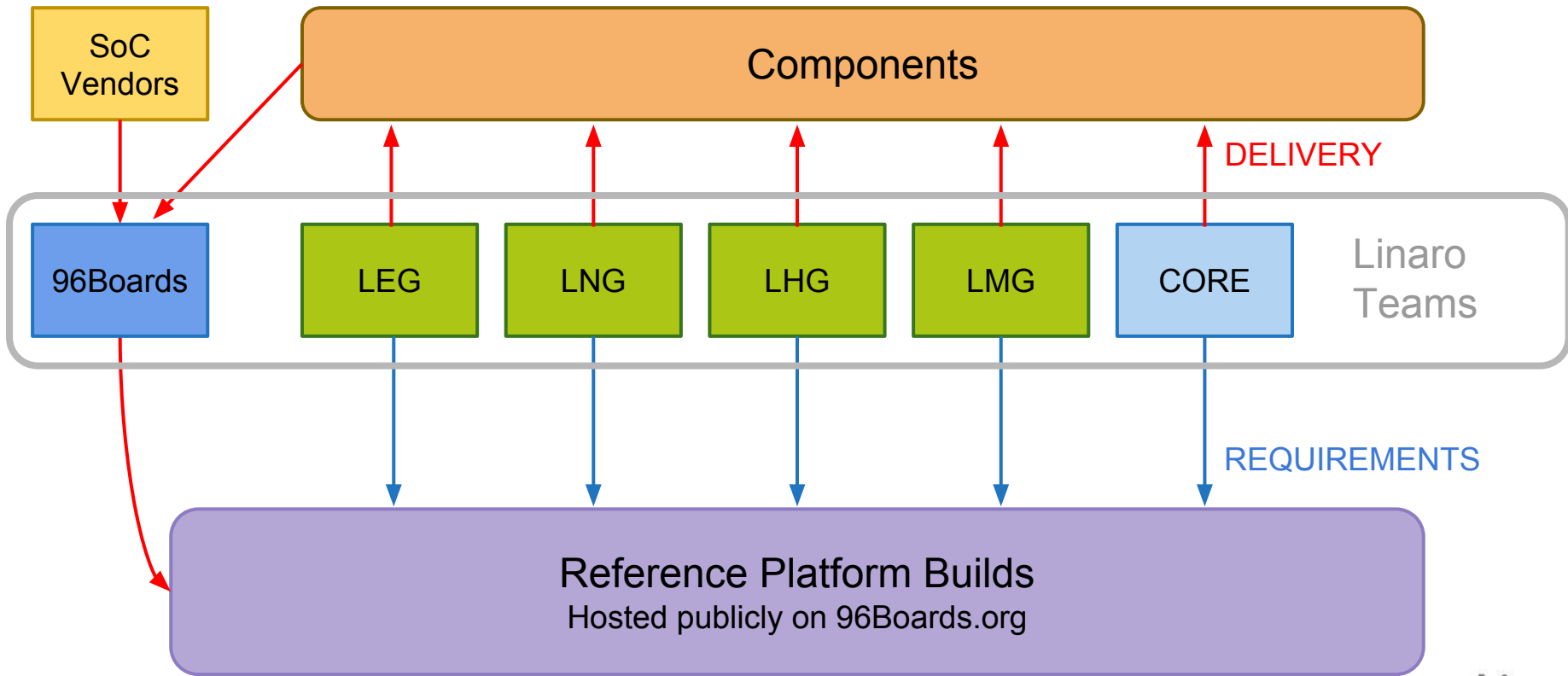
Focus should be on interfaces not builds

- The RPBs <u>will</u> be used to develop standardized interfaces - for example:
  - Access to GPIOs is different for every SoC. We will work with upstream libsoc.a to provide a simple applications library to enable any maker application to access the GPIOs on any 96Boards product using the same code
  - We will extend this to other interfaces - I2C, I2S, SPI etc.
  - Longer term we will tackle other interfaces such as CSI for cameras
- A goal is to document these components and builds so that they may easily be re-used by members and the community in their own products

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Interaction with Engineering and Segment Groups

- Segment Groups provide input into each release RPBs
  - e.g. LEG-SC may request a RPB of ACPI/UEFI, CentOS and Hadoop on the AMD 96Boards product with documentation on all non-upstream patches applied and specified performance benchmarks
  - e.g. LHG-SC may request an RPB using OE/Yocto and including the Comcast RDK packages on the Actions Semi Bubblegum 96Boards

Interaction with Engineering and Segment Groups

SoC Vendors

Components

DELIVERY

96Boards

LEG

LNG

LHG

LMG

CORE

Linaro Teams

REQUIREMENTS

Reference Platform Builds
Hosted publicly on 96Boards.org

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