HKG18-412: AOSP/Android Workflow

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Disclaimer

I really don’t have much insight into internal workings.

Diagrams in this presentation are only simple models.

(Very much like the “Thomson’s model” of the atom.)
Internal/Private Repos: Product Focused

Public AOSP Repos: “Community Focused”
We love these teams!
(but they are rare)
Release Tags vs Master

Continuous Confusion
HiKey960 Support lands
Devboard Testing
What is a developer to do?

- “Stable” release tags don’t work
- AOSP/master breaks somewhat regularly

OR

https://www.flickr.com/photos/erichill418/15524069911/

OR

https://www.flickr.com/photos/oddharmonic/8314797483/
Known-Good Manifests
Known-Good Manifests

- Linaro generates Daily builds w/ pinned-manifest.xml data
  - Allows re-creation of the AOSP tree
- Do weekly manual testing on boards to validate stability
  - HDMI/WiFi/BT/USB/Audio functionality
  - Basic performance checks
  - No crash loops in logcat
- Publish pinned manifests that are validated as “good”
- Provides a AOSP/master based point for development, ideally without the stability pitfalls
known-good-manifests

Snapshots of "known-good" AOSP manifests for various devboards.
Where "known-good" means that basic functionality has been checked and it should be ok for development work.

To use:

1. Go to your already checked out AOSP TOPDIR
   - If you need help setting up a build environment and checking out the AOSP source, please refer to the AOSP instructions here:
     https://source.android.com/setup/requirements
   - Also review the instruction details specifically for devboards:
     https://source.android.com/setup/devices
2. Download the known-good manifest you wish to use. Manifests can be found under the board directories here:
   https://github.com/96boards/aosp-known-good-manifests/tree/master/known-good
   And the latest known-good manifest can be accessed via:
   https://github.com/96boards/aosp-known-good-manifests/tree/master/latest/\ cardboard\manifest
3. Initialize & sync the repo using the manifest:
   repo sync -j24 -m\known-good\manifest
4. Then proceed to build.

To switch back to AOSP/master:
1. Go to your already checked out AOSP TOPDIR
2. Re-initialize and sync the repo using the AOSP/master manifest:
   repo sync -j24

https://github.com/96boards/aosp-known-good-manifests
Future Work on Known-Good Manifests

- Should be useful to help narrow down regressions.
  - Normally after a repo sync, getting back to earlier state is difficult
  - `repo diffmanifests manifest1.xml manifest2.xml`
  - Provides a week of deltas that can be more easily bisected

- Try to roll in more automated testing into validation
  - LKFT AOSP testing results
  - Extend LKFT to close gaps for HDMI/WiFi/BT validation

- Input wanted!
“Merge Window”
Private development → "Release" development → Tag → dev → Tag → Private development

AOSP/master

Public/External development
Winter  
Spring  
Summer  
Fall  
Winter  
Spring  

Private development  

“Release” development  

Tag  

Tag  

Private development  

Public/External development  

AOSP/master
Issues to think about

● Can the “merge window” concept be better formalized, so it isn’t surprising to community folks making submissions?

● What other areas of AOSP workflow can we (as a community) improve?
  ○ Improving general stability / pre-submit testing for more boards?
  ○ Get more users using AOSP/master (in turn results in wider testing)