



CONTINUOUS INTEGRATION FOR MOBILE DEVELOPMENT

ANDROID

Dennis Nobel – itemis AG

AGENDA

1

Continuous Integration (CI)

Definition / Process / Mobile Challenges

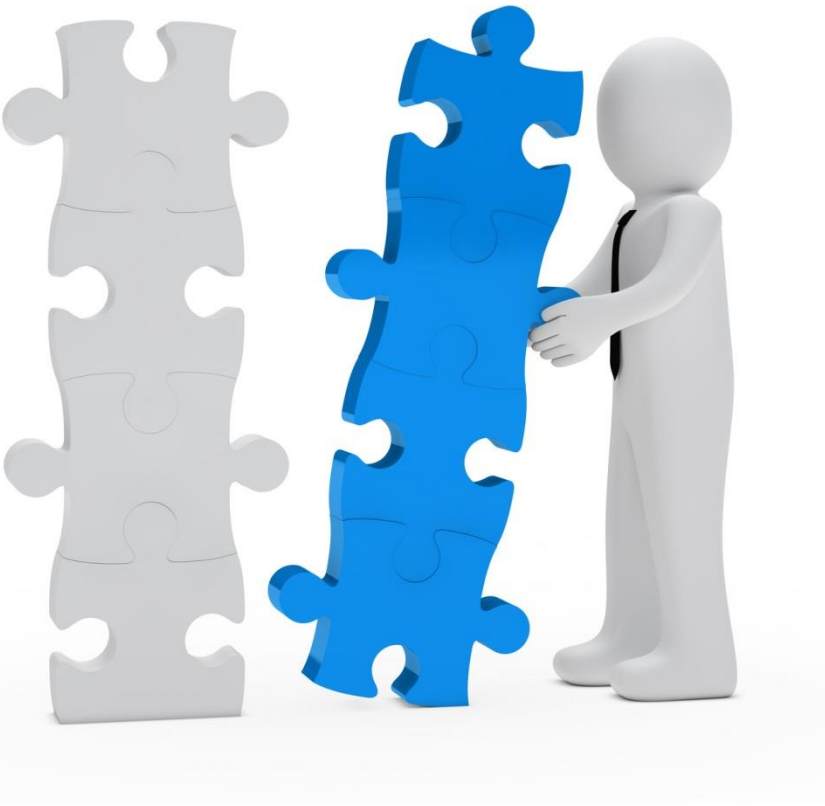
2

CI for Android

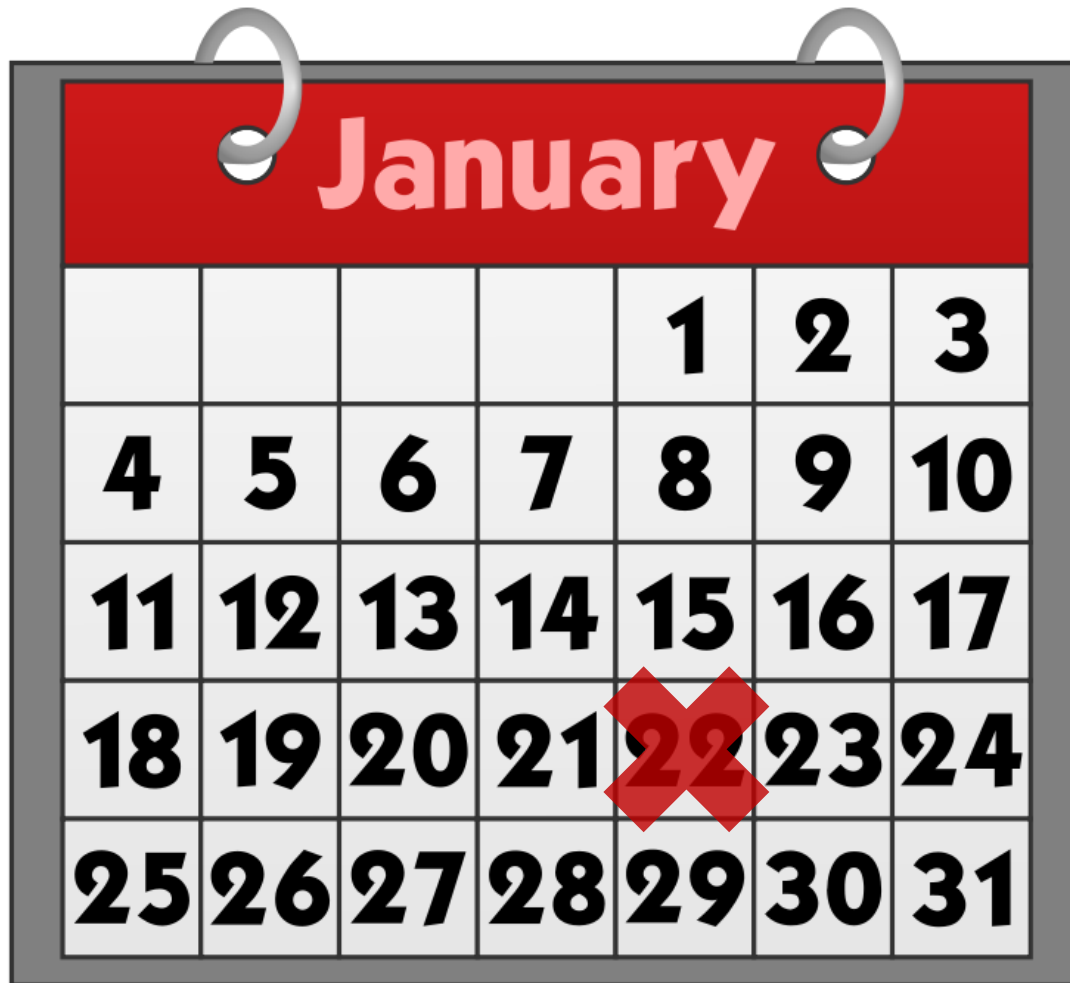
Automate Build / Testing / OTA Distribution

A SOFTWARE DEVELOPMENT STORY

DEVELOPMENT



RELEASE DATE



MANUAL BUILD AND TESTING



STRESSFUL AND INSTABLE RELEASE



HOW TO SOLVE THE PROBLEMS?

AUTOMATE INTEGRATION

A photograph of a car manufacturing plant. In the center, a red Volkswagen Touran car body is being moved by a large, white, curved robotic arm. The car is positioned vertically, showing its rear and side. The background is filled with complex industrial machinery, including various robotic arms, conveyor belts, and structural frames. The lighting is bright and even, highlighting the metallic surfaces of the car and the machinery.

CONTINUOUS INTEGRATION

"[CI] is a software development practice where members of a team integrate their work frequently." – Martin Fowler

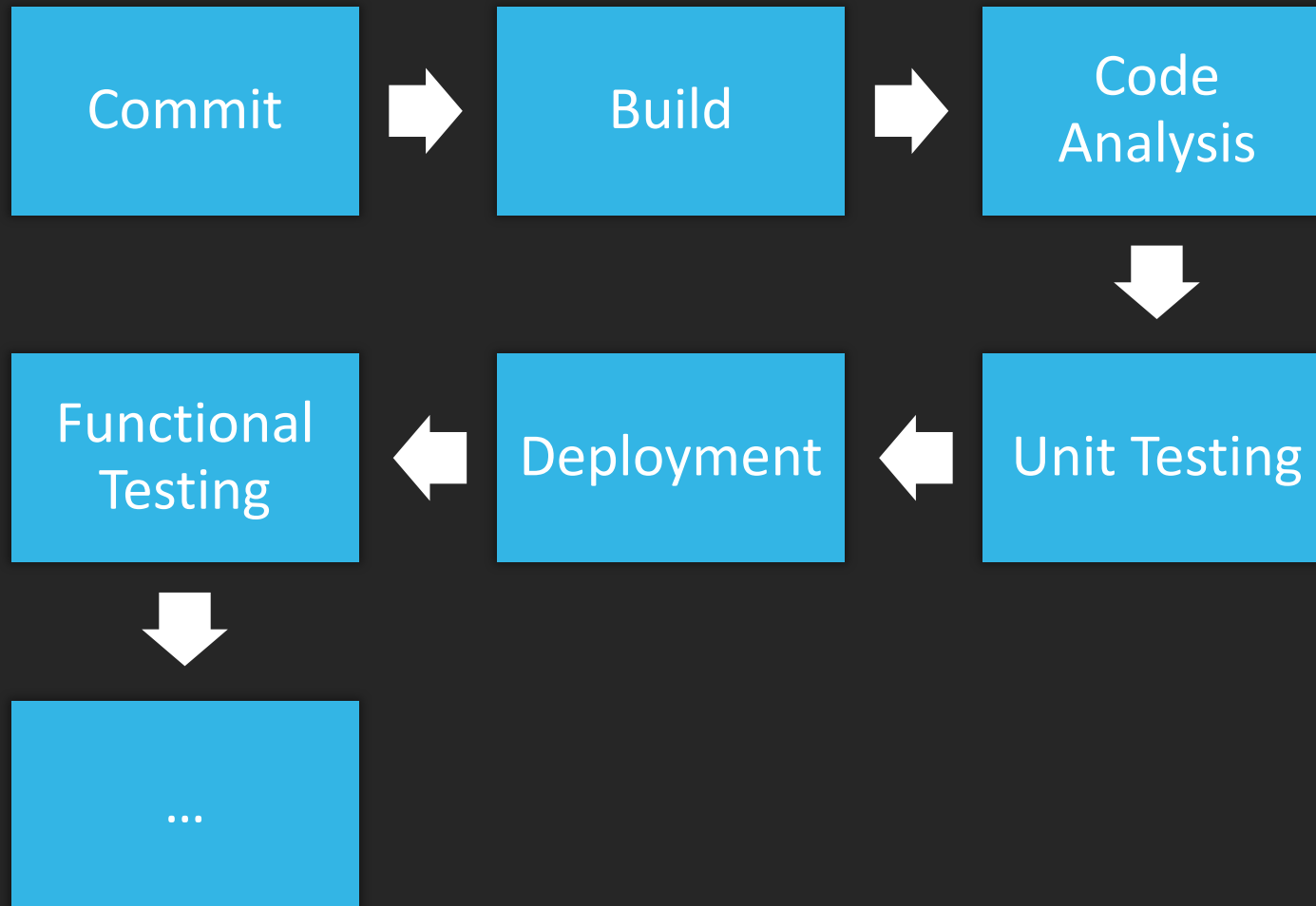
- Avoid integration problems
- Use short running software tests
- Immediate feedback to developers

CONTINUOUS DELIVERY

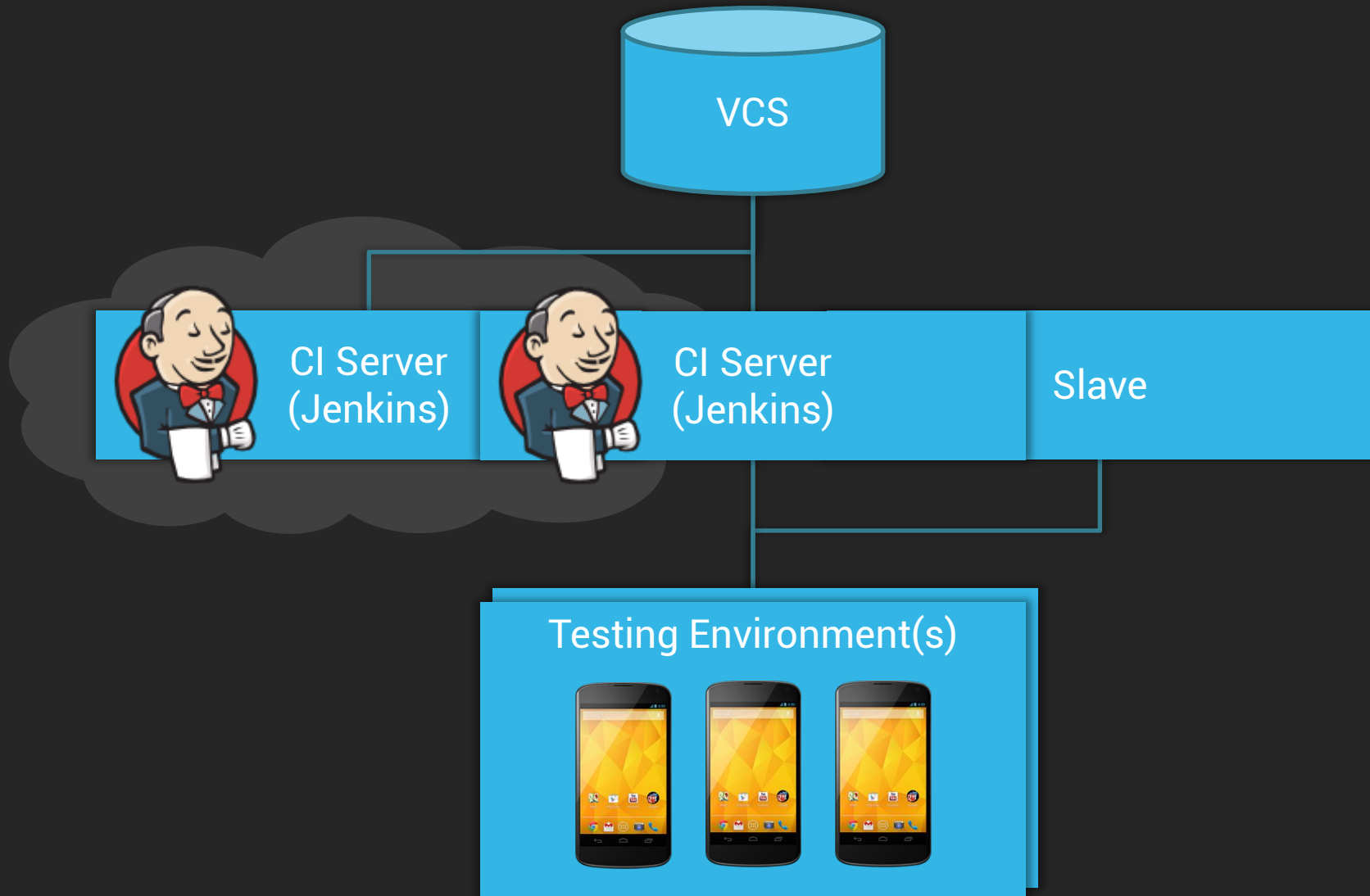
“Build software so that it is always in a state where it could be put into production.” – Martin Fowler

- Continuously running a deployment pipeline with functional tests
- Short release cycles
- Increase software product quality

CI PROCESS



CI SYSTEM ARCHITECTURE



MOBILE CI CHALLENGES

- App and Backend integration
- Hardware devices
- Multiple OS versions and devices
- App provisioning

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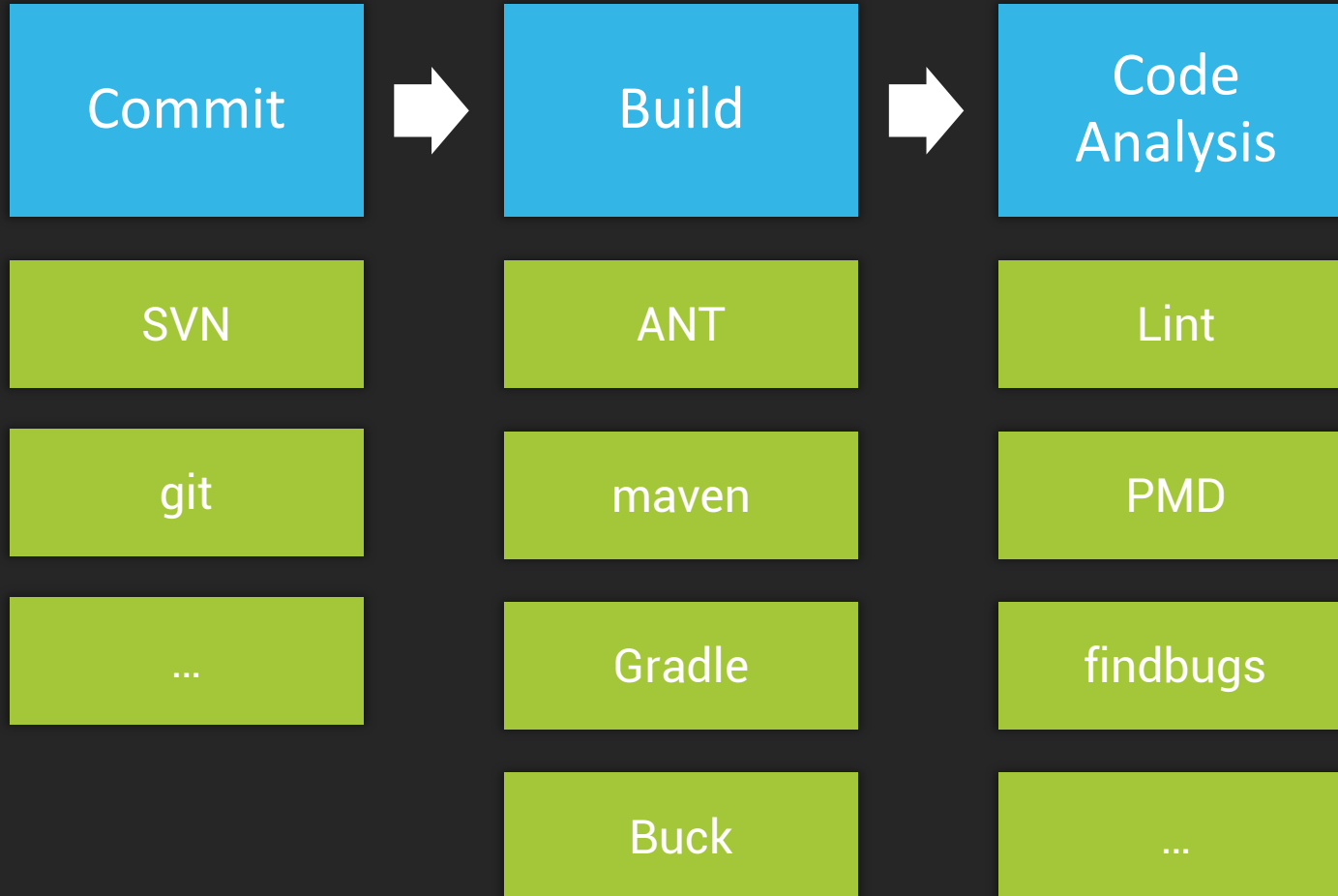
CI for Android

Automate Build / Testing / OTA Distribution

BUILD AND CODE ANALYSIS



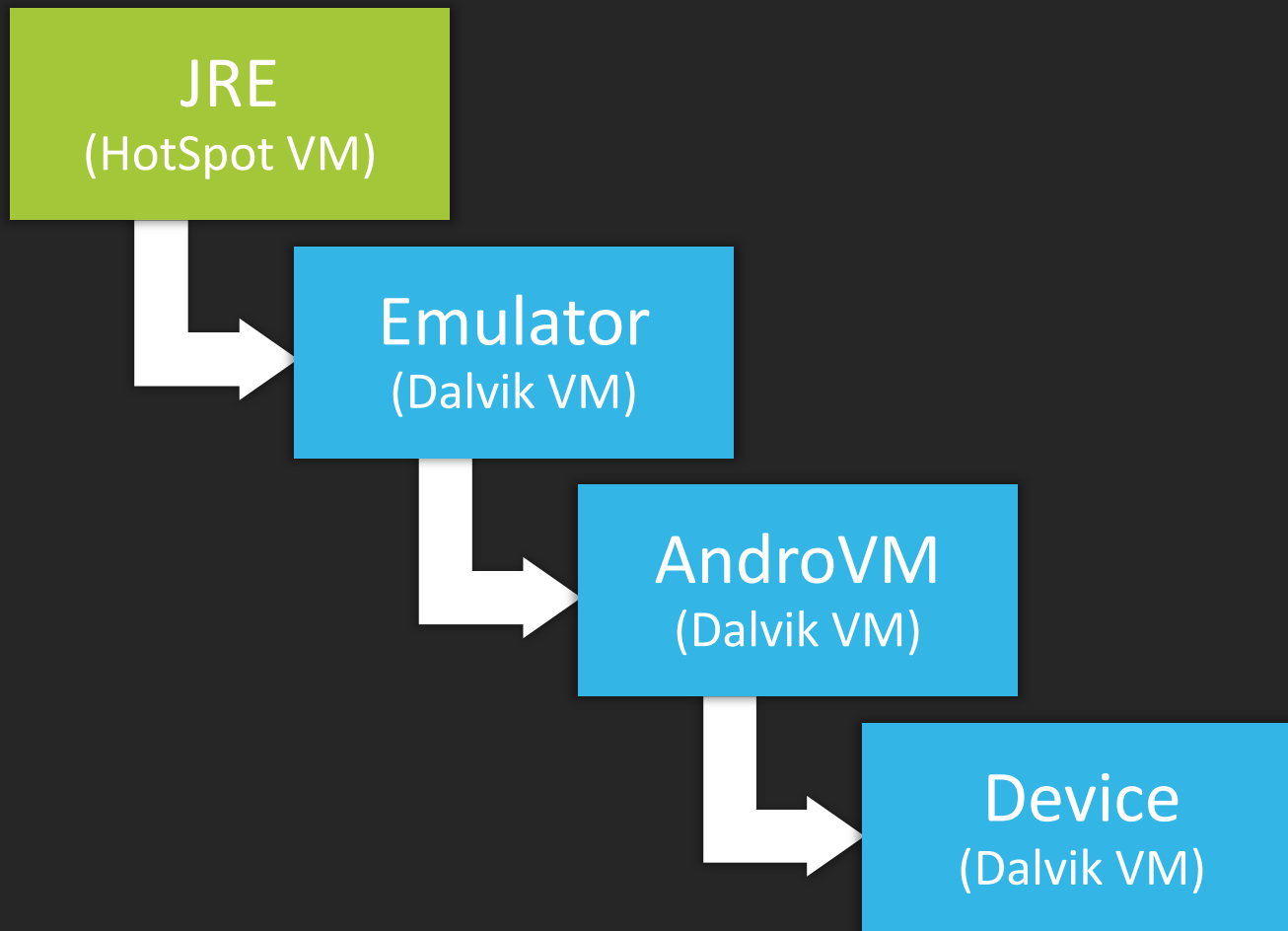
BUILD & ANALYSIS TOOLS



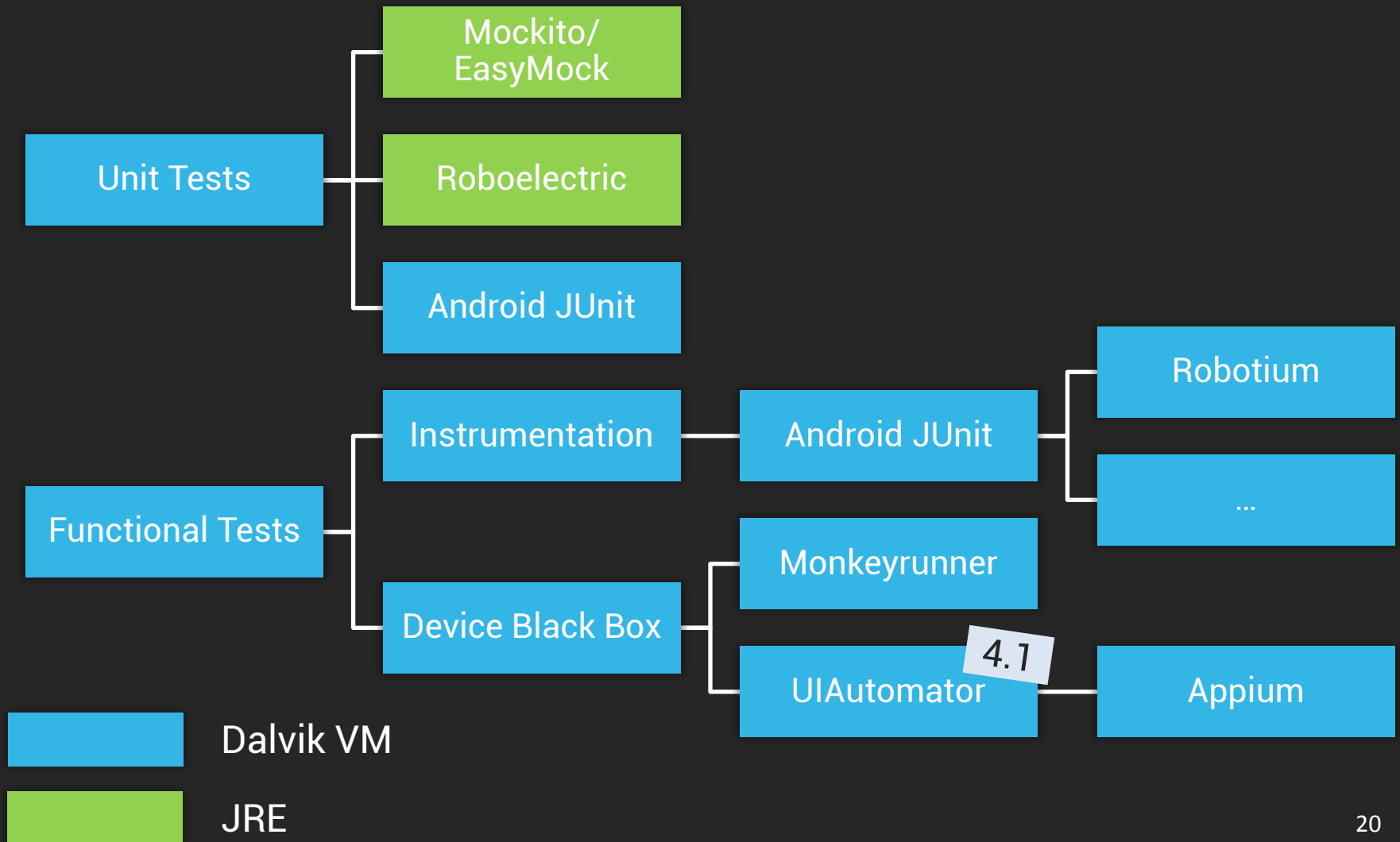
TESTING ANDROID APPS



TESTING ENVIRONMENTS



DIFFERENT WAYS OF TESTING



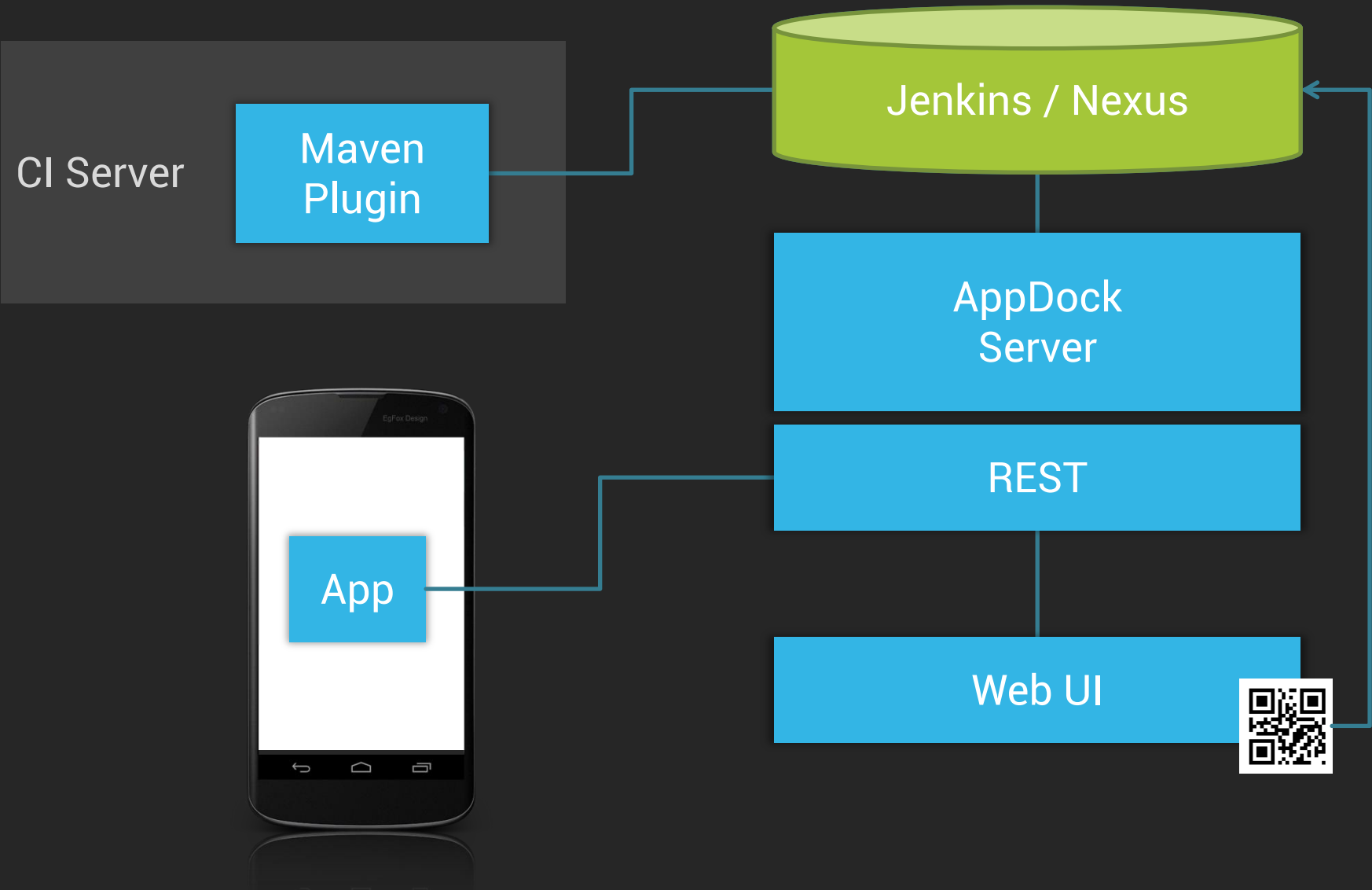
DISTRIBUTING ANDROID APPS OTA



HOW TO DISTRIBUTE YOUR APPS

- Downloading from Jenkins
- Mailing .apk files
- Cloud services
 - HOCKEYAPP (hockeyapp.net)
 - ZUBHIUM (zubhium.com)

APPDOCK



CONCLUSION

- Quite good and many CI tools out there
 - Hard to choice
 - Setup is often not that easy
- CI helps to...
 - increase product quality
 - shorten release cycles
 - avoid manual and boring testing

LET JENKINS WORK FOR YOU



THANK YOU FOR YOUR ATTENTION.



<https://github.com/dnoel/android-ci>



[https://github.com/stephanenicolas/
Quality-Tools-for-Android](https://github.com/stephanenicolas/Quality-Tools-for-Android)