

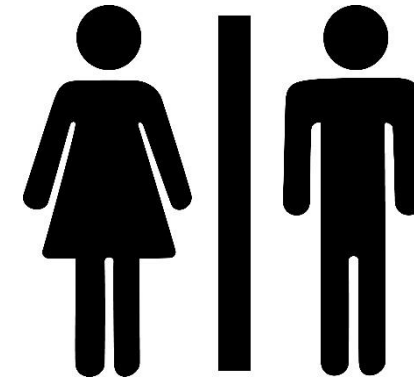




Slides		
<ul style="list-style-type: none"><li>• Why are we here?<ul style="list-style-type: none"><li>– CI Workshop</li><li>– Expectations</li></ul></li><li>• Who are ITDev?<ul style="list-style-type: none"><li>– Our services</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Industry presentations<ul style="list-style-type: none"><li>– Siemens</li><li>– CBNL</li><li>– ITDev</li><li>– Roke Manor</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Breakout &amp; Feedback<ul style="list-style-type: none"><li>– Challenges</li><li>– Solutions</li></ul></li><li>• Wrap-up</li></ul>




- Fire Alarms
- Mobile phones
- Toilets
- Lunch



- Jon Older – ITDev Business Development Manager
  - History of running industry networks
  - Passion for industry
- Who are you stood next to ...




- Who else is here
  - Attendee List
- Format of the day
  - Tentative agenda
- Feedback form
  - Fill in Key Challenge

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Continuous Integration Workshop 7<sup>th</sup> March 2019

Attendee List

First Name	Surname	Company
Alan	Piper	Dassault Systemes
John	Lezo	Abaco Systems
Stuart	Lissaman	Abaco Systems
Martin	Hall	Dassault Systemes
Daniel	Laird	MediaKind
Ian	Reed	Cabletime
Markus	Jolita	RoodMicrotec
Dean	O'Brien	Naim Audio
Alex	Scott	Roke Manor
Ross	Chisholm	Focusrite
Niall	Cooling	Esabhas
Davide	Fiorentino	CBNL
Charlie	Woolf	Roke Manor
David	Hoslett	Siemens Mobility
Nathan	Myers	Tracerco
James	Hartley	Sondrel
Joe	Brennan	Renesas
Alvaro	Valderrama	Utonomy
Mike	Moncrieffe	MSquared Consulting
Andrew	Hart	Abaco Systems
Mathis	Baumert	Abaco Systems
Maurice	Tucker	AccelerComm
Matt	Brejza	AccelerComm
Shaun	Flynn	GE Aviation
Adam	Brown	Abaco Systems
Timothy	Guyder	GE Aviation
Adam	Edwards	AP Sensing
Rob	Kersey	BAT
Ian	Mayo	Deep Blue C Technology
Martin	Baker	Renesas
Livio	Pizzi	GE Aviation
Paolo	Pettinato	Cisco Systems
Mahima	Mishra	CBNL
Senna	Semakula-Buuta	Cisco
Praveen	Nara	Siemens Mobility
Steven	Mackenzie	Aptile
Shaun	West	Renesas

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Andy	Culmer	ITDev
Simon	Hardy	ITDev
Jon	Older	ITDev
Steve	Dwyer	ITDev
Orianne	Tyndale	ITDev

Agenda:

- Introduction & Welcome  
Aims of the day
- 2 presentations on industry best practice
- Breakout session 1 (Cloud based CI; Introducing CI; HW integration)  
- Tool selection & choices
- Feedback from each group on challenges
- Lunch + networking
- 2 presentations on industry best practice
- Breakout session 2 (Cloud based CI; Introducing CI; HW integration)  
- Pipelines & tooling
- Feedback on recommendations
- Lessons, review aims, next steps if any  
Possible future workshop

Notes

- What are our expectations from today?
- Mine
  - To meet industry peers
  - Did last year's event make an impact
  - Learn more about Cloud based CI





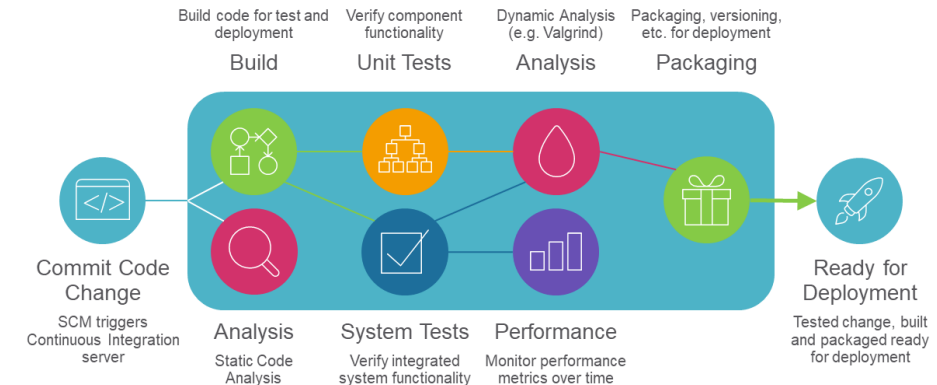
- Continuous Integration challenges
  - Various industry discussions
  - Need for sharing knowledge?
  - Am I alone with my challenges?
- Opportunity to
  - Share best practices
  - Hear from leading organisations
  - Identify common challenges
  - Address challenges



## CONTINUOUS INTEGRATION

A Typical CI Flow

[www.itdev.co.uk](http://www.itdev.co.uk)  
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- CI Introduction
  - Understanding CI, how to introduce, ...
- Gaining buy-in
  - Management and engineers
- Culture – business view on CI
- Workflow – microservices, CI for web based apps
- Scaling
  - HW integration, complexity management, CI->CD
- Maintenance & Tooling – tools, pipeline, dependencies



- To provide value
  - To clients
  - To wider industry
- Addressing a need
  - Embedded systems network
- Raise our profile



## Who are ITDev?

*“We believe that we are defined by our shared values.”*

- Come directly from our team.
- Embodied in our culture.
- Reinforced by our employee rewards scheme.

*“They drive our decision making, the way we work and our relationships with our clients, suppliers and peers.”*

## Software

- Embedded software
- Drivers
- Firmware
- Digital signal processing
- Virtualisation
- Measurement & control
- Databases
- Web based apps & interfaces
- User interfaces

## Hardware

- FPGA & digital IP design
- Architecting
- Design partitioning
- Verification & analysis



## Broadcast expertise

- H.264, MPEG2, JPEG 2000, ...
- Compression algorithms
- Audio and ancillary data
- Transport over serial and IP



Example products:

- Video encoders & receivers
- Low latency TV broadcast systems

## Main languages

- C, C++, C#
- Python
- PHP
- SQL
- VHDL

## Processes & tools

- Agile: Scrum/Kanban
- Continuous integration
- Feature and bug tracking
- Revision control (SVN, Git)
- Online peer review
- Online portal
- Quality Management System

## Embedded Linux expertise

- Custom kernels
- Kernel driver development
- Board Support Packages (BSPs)
  - Buildroot, Linux device tree
- Various micros (STMicroelectronics, Atmel ...)
- Application development



Example products:

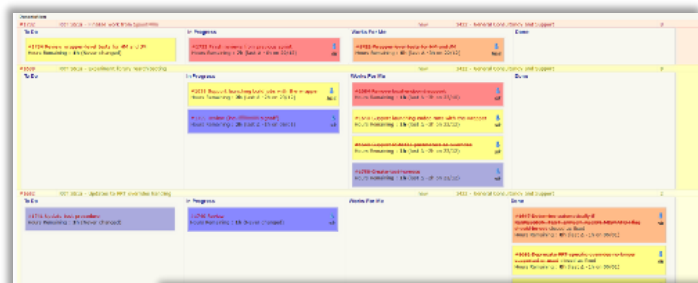
- Aircraft infotainment systems
- Smartphones, tablets
- Wearable tech
- Industrial sensors
- Vital signs monitoring system



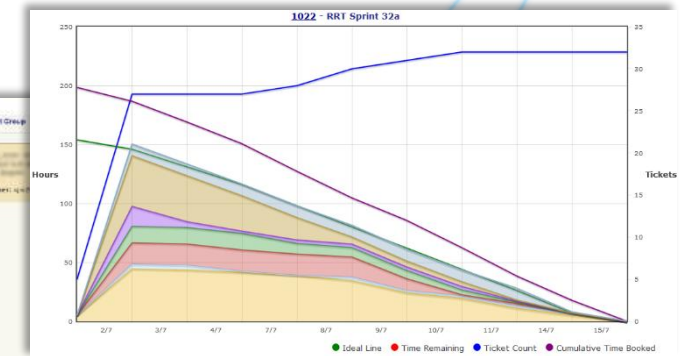
Our company values: Empathy, Trust, Considered, Passionate, Smart



- Project management
- Continuous Integration
- Revision control (SVN, Git)
- Release management
- Agile development
- Regression environments
- Feature and bug tracking
- Online peer review



Examples of on-line Scrum board, Kanban board and burn-down chart implemented within our client portal.



- Culture
  - Buy-in, business culture, trust
- ROI
  - Justification, quantify ROI, cost curve
- Skills
  - Recruiting, teaching skills, maintainable
- Hardware
  - HW availability, automating hw builds

- Tools
  - Too much choice, what's best
- Scaling
  - Multi-site, multi-target, soak jobs, resource availability
- Workflow
  - Back-out failure vs fix, legacy code, unit testing, sharing/consistency



- David Hoslett – Siemens Mobility
  - Presentation link

- Davide Fiorentino – CBNL
  - Presentation link

- CI tool selection & challenges
  - Cloud based CI
  - Introducing CI
  - HW integration (HIL)
- Split into 6 groups
- Avoid sitting with colleagues
- Quick introductions
  - Who, What, Why CI
  - Finish 12:00pm
- Capture ideas on flipcharts



- Steve Dwyer – ITDev
  - Presentation link

- Charlie Woolf – Roke Manor
  - Presentation link

## Tool selection & Choices

- Introducing CI
- Cloud Based CI
- HW Integration



- Please complete feedback form
  - Gift in return
  - Check the “keep me informed” boxes
- Follow up with each attendee
  - Personal feedback
  - How to engage others

- Review expectations
  - ...
- Embedded Linux event / Next CI event
  - Date tbc
- Please return badges for recycling

## Our Company Values...



Empathy, Trust, Considered, Passionate & Smart