# Project Controls Expo – 18th Nov 2014
# Emirates Stadium, London

## Using Agile and Earned Value

# About the Speaker

**Stephen Jones**

**Chairman of the APM Planning, Monitoring and Control Specific Interest Group.  A Registered Project Professional, and a chartered Electrical Engineer.  Project Management experience comes from the Nuclear Industry,  currently a Project Manager at Sellafield Ltd working for the Major Project directorate.**

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# Sellafield is the largest and most complex Nuclear site in Europe

- **Located in the County of Cumbria, North West England**

- **Functional support capability is provided by employees based at Risley, Warrington**

- **Nuclear build started at Sellafield in the late 1940's**

- **Location of Calder Hall – The world's first commercial scale Nuclear Power Station (1956-2003)**

**Sellafield**

**Risley**

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# Single largest Nuclear construction site in the UK

- **250 active facilities on 1 ½ sq. miles / 700 acres**

- **Operations include**
  - **Decommissioning**
  - **Nuclear fuel reprocessing**
  - **Nuclear waste management**
  - **Construction**
  - **Delivery of major projects**

- **Total annual budget £1.8bn**

- **Employs  10,000+ people**

- **Recruits 64 Graduates and apprentices per year**



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# Is Agile a Methodology?

## YES          OR          NO

# Agile Methodologies

- Scrum

- XP (eXtreme Programming)

- Crystal

- FDD (Feature Driven Development)

- DSDM (Dynamic Systems Development)

- Adaptive Software Development

- RUP (Rational Unified Process)

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# Agile Manifesto

The Agile Manifesto was written in February of 2001, at a summit of seventeen independent-minded practitioners of several programming methodologies. The participants didn't agree about much, but they found consensus around four main values.

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

## Twelve Agile Principles

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# Agile Myths

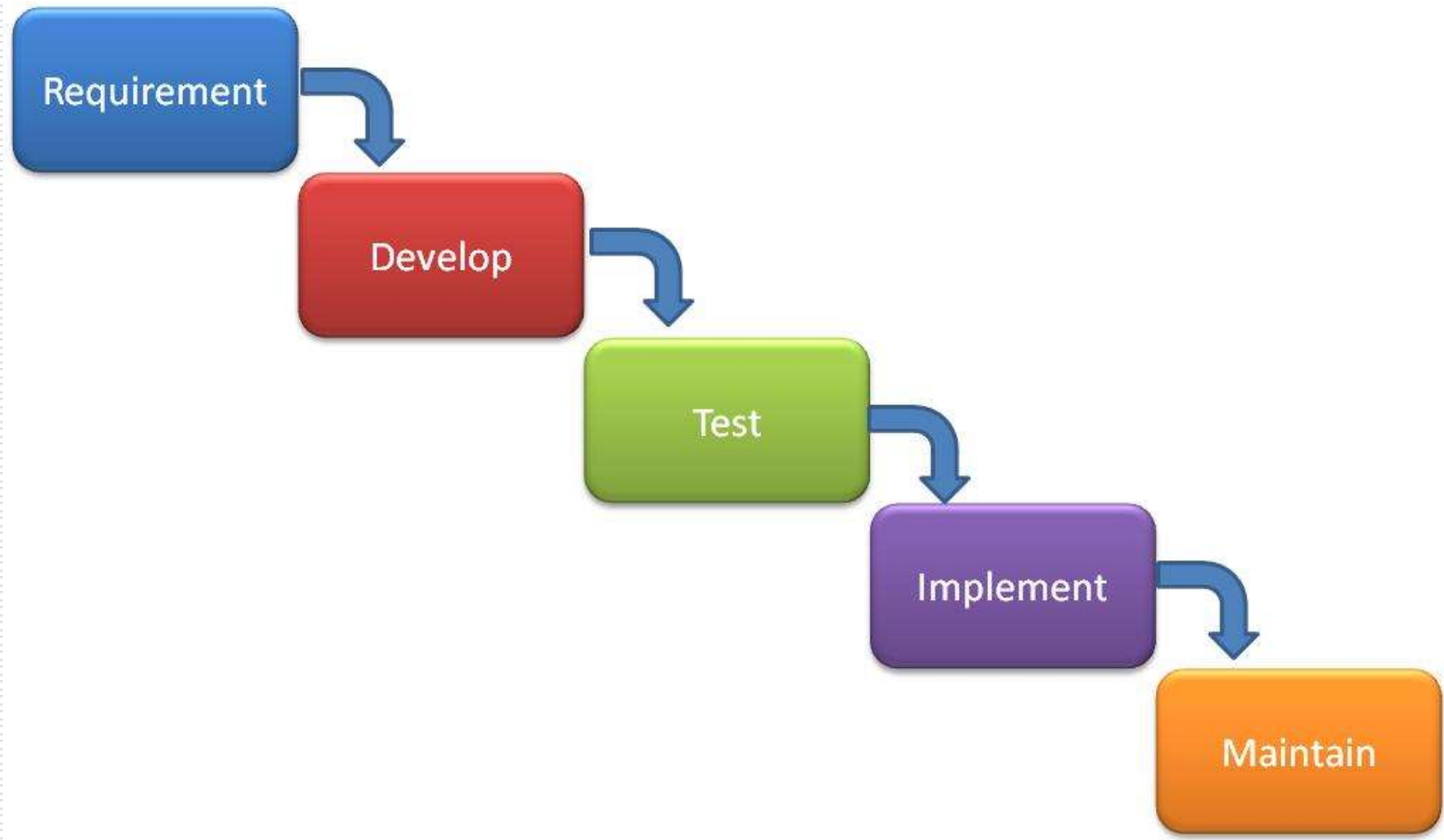**Planning – No need to plan all activities**

**Schedule – Baseline cannot be developed**

**Resources - Less need to assign resources**
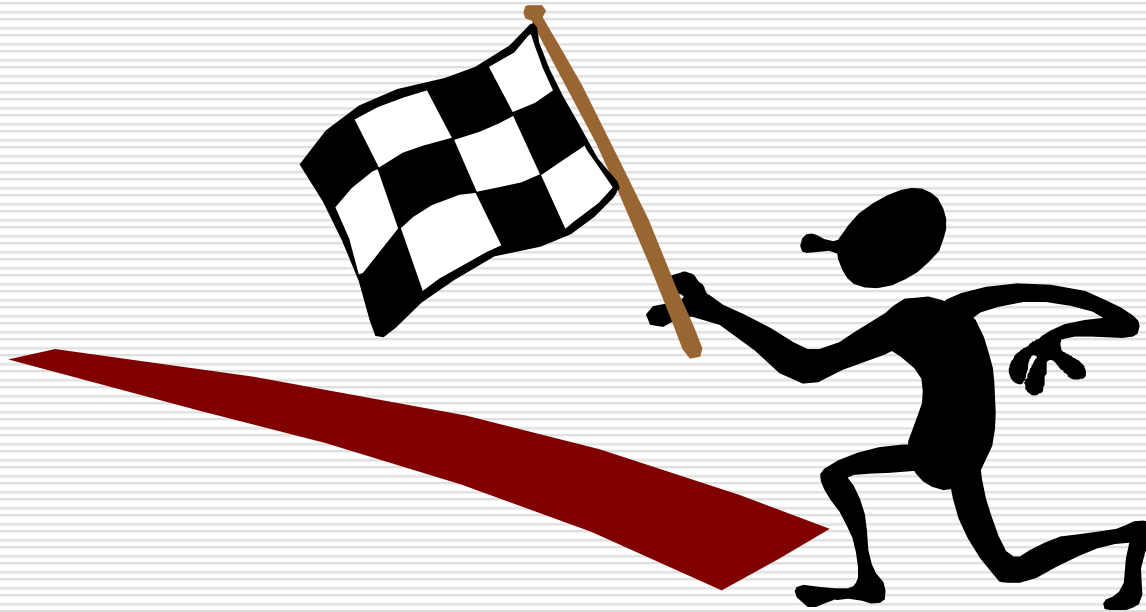
**Risk – Less need for risk analysis**

# Waterfall Method

# Agile Software Development

# Challenges

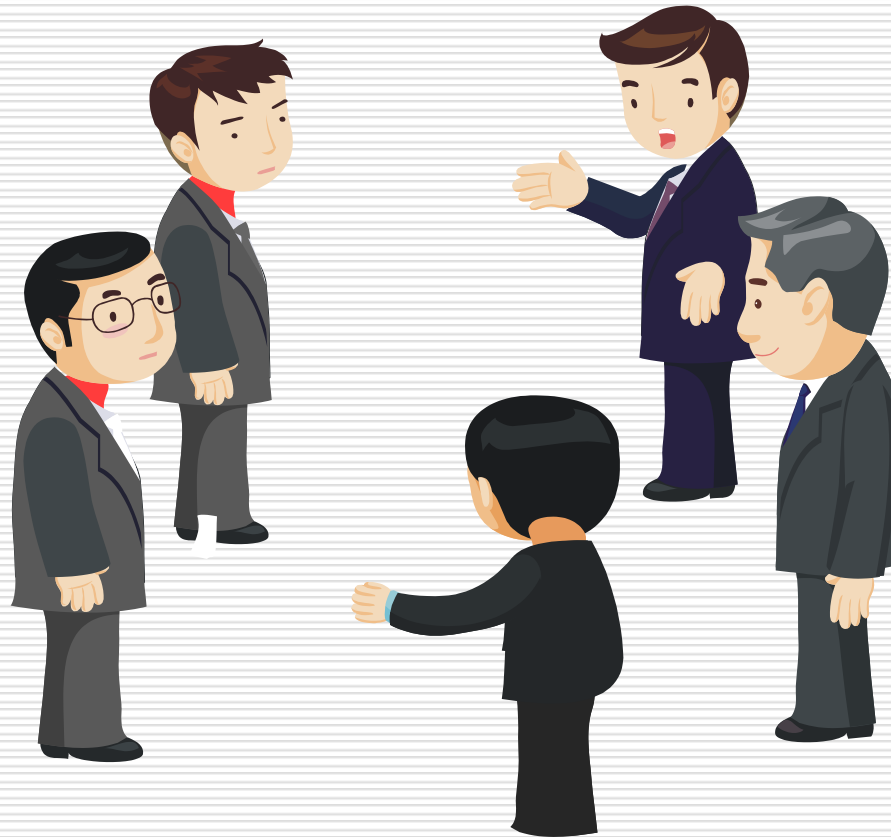# What do all the words mean

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# People-centric

# Rules of Credit

100%          0%

# Agile Poker

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# Earned Value

# Points Go Up or Down

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# APM White Paper

apm Planning, Monitoring and Control
Specific Interest Group

**Agile and Earned Value**

A white paper

October 2013

Author – Stephen Jones, Sellafield Ltd
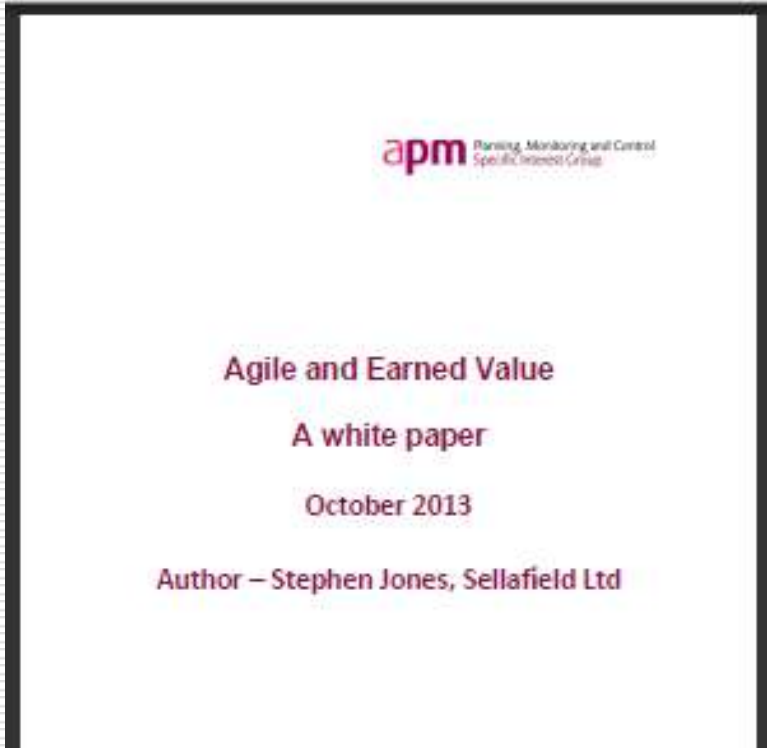
Based on SCRUM

Worked Examples

http://www.apm.org.uk/news/agile-and-earned-value-white-paper

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# Worked Examples

| Story Cards (Backlog) | Estimated (story points) |
|---|:---:|
| Card 1. Splash Screen | 10 |
| Card 2. Enter Login Name Password | 10 |
| Card 3. Verify Password | 10 |
| | |
| Card 17. Shutdown | 50 |
| Total points in Backlog | 260 |

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# Worked Examples

Estimated Value of Backlog = £100,000

Period 1 = 20 points delivered (card 1 & card 2)

20/260 = 7.692% complete.

Earned Value = £7,692

Note: Project Management is calculated using apportioned effort, i.e. based on the performance of delivering the backlog.

# Worked Example – Static Backlog

| Period | Points in Backlog | Points earned in Month | Earned points to date | Total % complete |
|--------|-------------------|------------------------|-----------------------|------------------|
| 1 | 260 | 20 | 20 | 8% |
| 2 | 260 | 40 | 60 | 23% |
| 3 | 260 | 30 | 90 | 35% |
| 4 | 260 | 10 | 100 | 38% |
| 5 | 260 | 40 | 140 | 54% |
| 6 | 260 | 40 | 180 | 69% |
| 7 | 260 | 80 | 260 | 100% |

Total % complete is

$$\frac{\text{Points Earned to Date}}{\text{Total Points in Backlog}}$$

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# Worked Example – Increasing Backlog

| Period | Points in Backlog | Added | Points earned in Month | Earned points to date | Available Points | % of backlog complete this month | Percent Remaining | Progress this month | Total % complete |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 150 | 0 | 20 | 20 | 150 | 13% | 100% | 13% | 13% |
| 2 | 190 | 40 | 40 | 60 | 170 | 24% | 87% | 20% | 34% |
| 3 | 200 | 10 | 30 | 90 | 140 | 21% | 66% | 14% | 48% |
| 4 | 220 | 20 | 10 | 100 | 130 | 8% | 52% | 4% | 52% |
| 5 | 240 | 20 | 40 | 140 | 140 | 29% | 48% | 14% | 66% |
| 6 | 300 | 60 | 70 | 210 | 160 | 44% | 34% | 15% | 81% |
| 7 | 320 | 20 | 30 | 240 | 110 | 27% | 19% | 5% | 86% |
| 8 | 320 | 0 | 80 | 320 | 80 | 100% | 14% | 14% | 100% |

Value of a point reduces. P2, 40 points =20%,  P5, 40 points = 14%
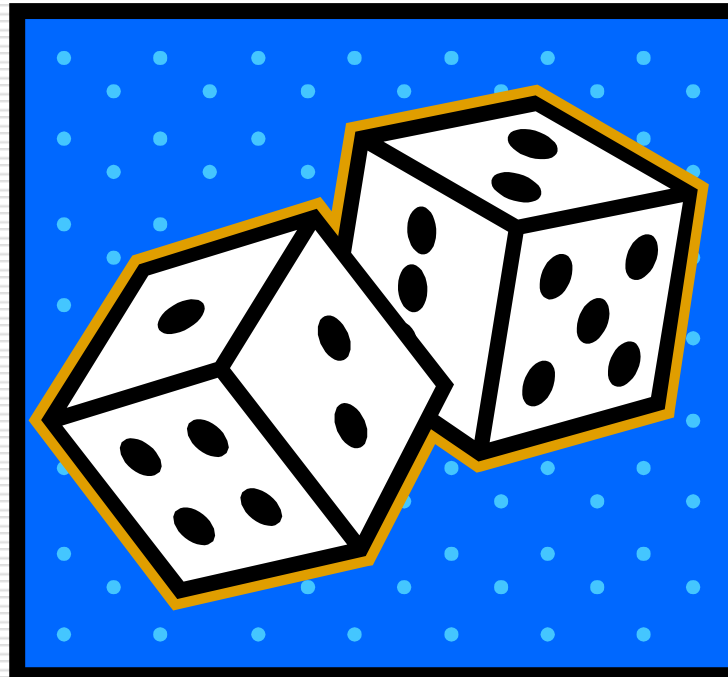
19/11/2014

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# Worked Example – Decreasing Backlog

| Period | Points in Backlog | Added | Points earned in Month | Earned points to date | Available Points | % of backlog complete this month | Percent Remaining | Progress this month | Total % complete |
|--------|-------------------|-------|------------------------|-----------------------|------------------|----------------------------------|-------------------|---------------------|------------------|
| 1 | 320 | 0 | 20 | 20 | 320 | 6% | 100% | 6% | 6% |
| 2 | 250 | -70 | 40 | 60 | 230 | 17% | 94% | 16% | 23% |
| 3 | 230 | -20 | 30 | 90 | 170 | 18% | 77% | 14% | 36% |
| 4 | 220 | -10 | 10 | 100 | 130 | 8% | 64% | 5% | 41% |
| 5 | 210 | -10 | 40 | 140 | 110 | 36% | 59% | 21% | 63% |
| 6 | 210 | 0 | 70 | 210 | 70 | 100% | 37% | 37% | 100% |

Value of a point increases. P2, 40 points =16%, P5, 40 points = 21%

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# Contingency

# Estimate to Completion

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# Useful References

- **Agile and Earned Value**
  http://www.apm.org.uk/sites/default/files/open/20131015%20Agile%20and%20Earned%20Value%20Final.pdf

- **Measuring Integrated Progress on Agile Software Development Projects**
  http://www.methodsandtools.com/archive/archive.php?id=61

- **AgileEVM – Earned Value Management in Scrum Projects**
- http://www.solutionsiq.com/docs/earned-value-analysis-in-scrum-projects-wp.pdf

# Thank you for Listening