Ground System Architectures Workshop
GMSEC SERVICES SUITE (GSS)
An Agile Development Story

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Session 11E:
Adopting Agile Ground Software Development
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Agenda

- GSS Background
- Brief Intro to Agile
- Why Agile and GSS Challenges
- Takeaways
GMSEC Services Suite (GSS)

Secured Network

Application Server
(Jetty / Tomcat / WildFly)

- GSS-Chronos
- Java
- HTML
- JS
- CSS

Browser Client
(Chrome, Firefox, IE, etc..)

- GSS-Dashboard
- Message View
- Grid View
- Chart View
- Event View

GMSEC Middleware Bus

WebSocket (WS/WSS)

REST (HTTP/HTTPS)

RMI

Config (HTTP/HTTPS)

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GSS An Agile Development Story
• What is Agile Software Development?

“Describes a set of principles for software development under which requirements and solutions evolve through the collaborative effort of self-organizing cross-functional teams. It advocates adaptive planning, evolutionary development, early delivery, and continuous improvement, and it encourages rapid and flexible response to change.”

Source: https://en.wikipedia.org/wiki/Agile_software_development

• Methodologies
  - Scrum
  - Kanban
  - Feature Driven Dev.
  - Adaptive System Dev.
  - Dynamic Systems Dev.
  - Lean Software Dev.
  - Crystal Clear
Agile Setup

• Manage work items with IBM Rational Team Concert. Specifically the Change Management module leveraging Scrum Agile project template within RTC (Youtube - Rational Team Concert v4.0.2 ALM)
• Team roles:
  – Product Owner
  – Scrum Master
  – Team Member
  – Stakeholder
• Sprint cycle:
  – 4 weeks
  – Starts at the beginning of the month
• M-W-F stand-up meetings (15 mins)
• Sprint Review - typically at the end of the month or the beginning of the next month
• Post Sprint Review, Sprint Retrospective are combined into one at the end of each Sprint
• Sprint Planning at the beginning of each Sprint
• Align our major releases with GMSEC releases (two times a year)

Story points:
• On the order of minutes (XS)
• Up to one day (S)
• Couple of days (M)
• Up to one week (L)
• Up to two weeks (XL)
Why Agile?

- Engage with the stakeholders early and throughout the development process to make sure that the end product meets their expectations
Why Agile?

Enter to Submit or Click to Submit

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Challenges

• If one of your stakeholders had a bad pre-conceived notion of Agile...
  - Then the team needs to prove the value of the process
• Some common misunderstandings
  - Agile is anti-planning and undisciplined
    ▪ Where's your 18 month plan?
  - Agile teams don’t do documentation
    ▪ Where are your formal requirements, design document, test plans, test procedures?
At the heart of our Agile development practice is Continuous Integration.
Why Agile?

- Allow for change
  - Opportunity to update/re-prioritize plans based on customer inputs
  - Personnel flexibility for non-full time team members
- Cross functional teams
  - Encourage team members to take on different roles
  - Minimize the “single expert” problem
- Predictable costs and schedule
  - Understand your team productivity and level of effort to complete tasks
- Immediate feedback - bidirectional

Customer  <->  Team
Why Agile?

- Focus on users and providing them business value
  - Stakeholders! Stakeholders! Stakeholders!

Is that what you called a Demo?
Challenges

- Maintaining up-to-date documentation
- Maintaining up-to-date automated testing environment
- Ensuring stakeholders consistent involvement
- Helping management to understand the benefits of the Agile methodology
Takeaways

• Early and frequently stakeholders involvement and buy-in is essential
• Use agile techniques to build in quality and automate processes
• Happy development teams produce better software
• Agile is not the wild-west: it requires a lot of leadership, communication, and discipline to be successful
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>ANSR</td>
<td>Alert Notification System Router</td>
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