



The Army Game Studio's Agile Process: A Retrospective

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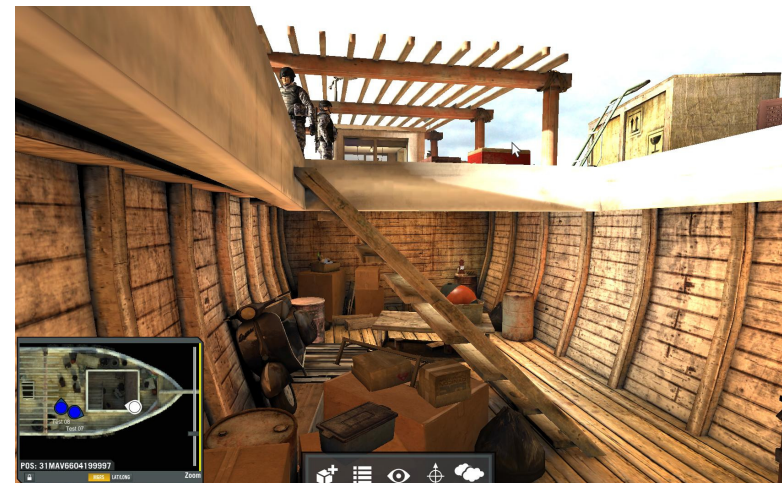
The Army Game Studio adopted Scrum because of a growing Team, growing Project sizes and the creation of a common Product line.

The Past

- Small Team
 - 15 People
- Half Dozen Concurrent Projects
- Tasking by Email or Over-the-Shoulder
 - Project Leads would go straight to Developer
 - This “process” remained largely unchanged as we continued to grow in size and project scope.

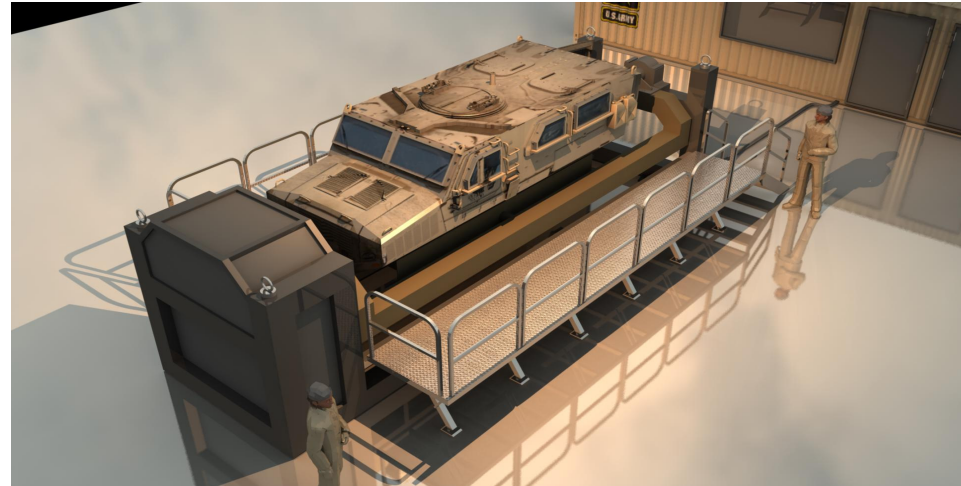
CBRN Dismount

- CBRN Dismount Prototype
- A Couple of Handheld Sensors
- Multiplayer
- Customer Wanted UE3
- Very Quick Turnaround



TRICT

- RG33 Simulator
 - Crew Skills
 - CROWS II
 - FBCB2
 - Driver
 - Commander
 - Rollover
 - Motion Platform
 - Egress Safely



TRICT / Origins

- Bulk of Requirements were given after we were funded
- Customer wanted to use Unreal Engine 3
 - No multiplayer AGS reuse platform to build from
 - No large environments to reuse
 - No CROWS II weapon simulation
- From napkin to drivable prototype in 18 months

TRICT / Initial Development

- Broken into Modules
 - Environment
 - Weapon Simulation
 - Multiplayer / Instructor Workstation
 - Vehicle Simulation
- Functional Leads were responsible for their own teams
 - No one person was ultimately responsible for a module...

TRICT / 6 Months In

- Behind Schedule
 - Environment
 - Multiplayer / Instructor Workstation
 - Vehicle Simulation
- On Schedule
 - Weapon Simulation
 - One Developer
- Poor Demonstrations from Developers
- Inconsistent Feedback from Project Leads
- Team was not communicating well
 - Code was not being reused between teams

TRICT / It's not You, It's Me...

- Not Developer's Fault
 - Their features were not being critiqued often enough
 - They were not being time-boxed appropriately
 - They didn't know who to communicate with
- Not Area Lead's Fault
 - They were managing requirements
 - They were managing pieces of Modules that were in their specific "functional" area

AAVP3

- America's Army Visualization Platform
 - Standardize UE3 Product Line
 - Common Baseline
 - Easier Asset Reuse
- Multiplayer
 - Instructor Workstation
- Vehicles
- Dismount



AAVP3 / Scrum

- Scrum was a process that fit our development style:
 - Requirements are never in stone, and most of the time are not completely known when funding occurs (design late)
 - Iterative, supported our customer feedback loop.
- Area Leads
 - Only role would be to critique work in their area.
- Developers
 - Could be time-boxed. This gave them a goal and sense of urgency for even small tasks.
 - Bugs were triaged quicker and in a standardized fashion.
 - Tasking could only come from Product Owner.
- Product Leads
 - Could see frequent demonstrations and could give these builds to customers for feedback.
 - Could effectively communicate what they wanted, straight to the developers, through User Stories.

AAVP3 / Sprint Teams

- Two teams
 - Not based on functional areas or specific projects, instead based on product features within a common product line.
 - Instructor Workstation / Vehicle Team
 - Programmers / Artists / Testers
 - Environment / Pawn Team
 - Programmers / Artists / Level Designers / Testers

AAVP3 / Bug Reporting

- Bugs are reported and end up in the product backlog.
- They are triaged by Scrum-master every day and the appropriate Sprint Team is asked whether they can take it on
 - Bugs for features in development the current sprint are sent directly to that developer.

Tools

- **We need software to track:**
 - User Stories
 - Developer Progress
 - Sprint Cycles
 - Bugs
- **We need software that allows us to communicate:**
 - Design
 - Customer Feedback / Meeting Notes



Tools / JIRA

The screenshot shows the JIRA interface for the project 'AAVP3 - On the fly'. The top navigation bar includes 'Dashboards', 'Projects', 'Issues', 'Agile', and 'Administration'. The main header shows the project name 'AAVP3 - On the fly' with a rocket icon, and a sub-header 'Planning Board - Version - Sprint 2012.4'. The right side of the header has links for 'New Card', 'Views', and 'Tools'.

Below the header, there are filters for 'Only My Issues', 'Only Pending Issues', 'Hide Done Issues', and 'Hide Sub-tasks'. A search bar is also present. The main content area displays a list of issues, each with a status icon, key, summary, priority, sprint, and assignee. The issues are categorized by type: Epic, User Story, Technical task, Bug, and Task.

Issue Key	Summary	Priority	Sprint	Assignee
AAVP-5439	As a Level Designer, I would like to wrap up most of the environmental work on the Urban Map	5	Sprint	None
AAVP-5433	Molotov doesn't have a point light	1	Sprint	None
AAVP-5426	As a CivCROWS player, I don't want the mouse wheel to changing positions in the vehicle	1	Sprint	AAVP3_Release_Ci
AAVP-5425	As a CivCROWS gunner, I don't want the trees at the end of the scenario to block my view of the helicopter crashing after I shoot	5	Sprint	AAVP3_Release_Ci
AAVP-5416	User created scenarios can't be deleted	1	Sprint	None
AAVP-5403	Finishing a CROWS Multi Scenario Does Not End the Scenario	1	Sprint	None
AAVP-5388	Sometimes, when restarting a scenario as the Instructor, GFX crashes	3	Sprint	None
AAVP-5350	Hit effects from the M2 on the desert valley terrain appear to be saturated with white	1	Sprint	AAVP3_Release_Ci
AAVP-5204	As a CROWS Instructor, I would like to see improvements to the AAR	5	Sprint	None
AAVP-5191	When firing the CROWS at the river in Desert Valley, the water impact effect was inconsistent	2	Sprint	AAVP3_Release_Ci

On the right side, there is a summary for 'Sprint 2012.4' with a progress bar. The summary includes the following information:

- Parent: None
- Start Date: 19/Mar/12
- End Date: 6/Apr/12
- Release Date: 6/Apr/12
- Bug: 35
- User Story: 23
- Technical task: 83
- Total Issues: 141
- To Do: 129
- In Progress: 10
- Done: 2
- Unresolved: 135
- Resolved: 6
- Time Estimate: 19 weeks, 4 days, 7 hours, 45 minutes
- Time Spent: 3 hours, 30 minutes
- Time Remaining: 19w 4d 4h 15m
- Story Points: 150 < 152 < 200

Tools / Confluence

Dashboard > AAVP3 Game > ... > AAVP 2010 - Sprint Goals & Artifacts
Browse SED Jay Olive Search

AAVP 2010 - Sprint Goals & Artifacts

Edit
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Add
Tools

Added by SED Dennis Plotts, last edited by SED Dennis Plotts on Aug 26, 2011 ([view change](#)) [show comment](#)

Past sprint artifacts for future sprint planning purposes.

- [Sprint 2010.5](#)
 - [Sprint Goals 2010.5](#)
- [Sprint 2010.4](#)
 - [Sprint Goals 2010.4](#)
- [Sprint 2010.3](#)
 - [Sprint Goals 2010.3](#)
- [Sprint 2010.2](#)
 - [Sprint Goals 2010.2](#)
- [Sprint 2010.1](#)
 - [Sprint Goals 2010.1](#)

Sprint	Story Points (Ideal Man Days)	Duration (Calendar Days)	Duration (Work Days)	Enviro / Pawn Team (Time Estimate - Ideal Man Days)	UI / Vehicle Team (Time Estimate - Ideal Man Days)	Release Date	Release CL#	Sprint Notes / Comments
2010.5	218	39	25	125	109	01/19/11	37552	
2010.4	178	35	25	74(Enviro) / 104(Pawn)	88.1	12/10/10		
2010.3	256	38	26	87(Enviro) / 96(Pawn)	78.5	11/05/10		
2010.2	NA	30	22	80(Enviro) / 99(Pawn)	67.5	09/30/10		
2010.1	NA	30	22	176(Enviro) / 99(Pawn)	75.7	08/31/10		

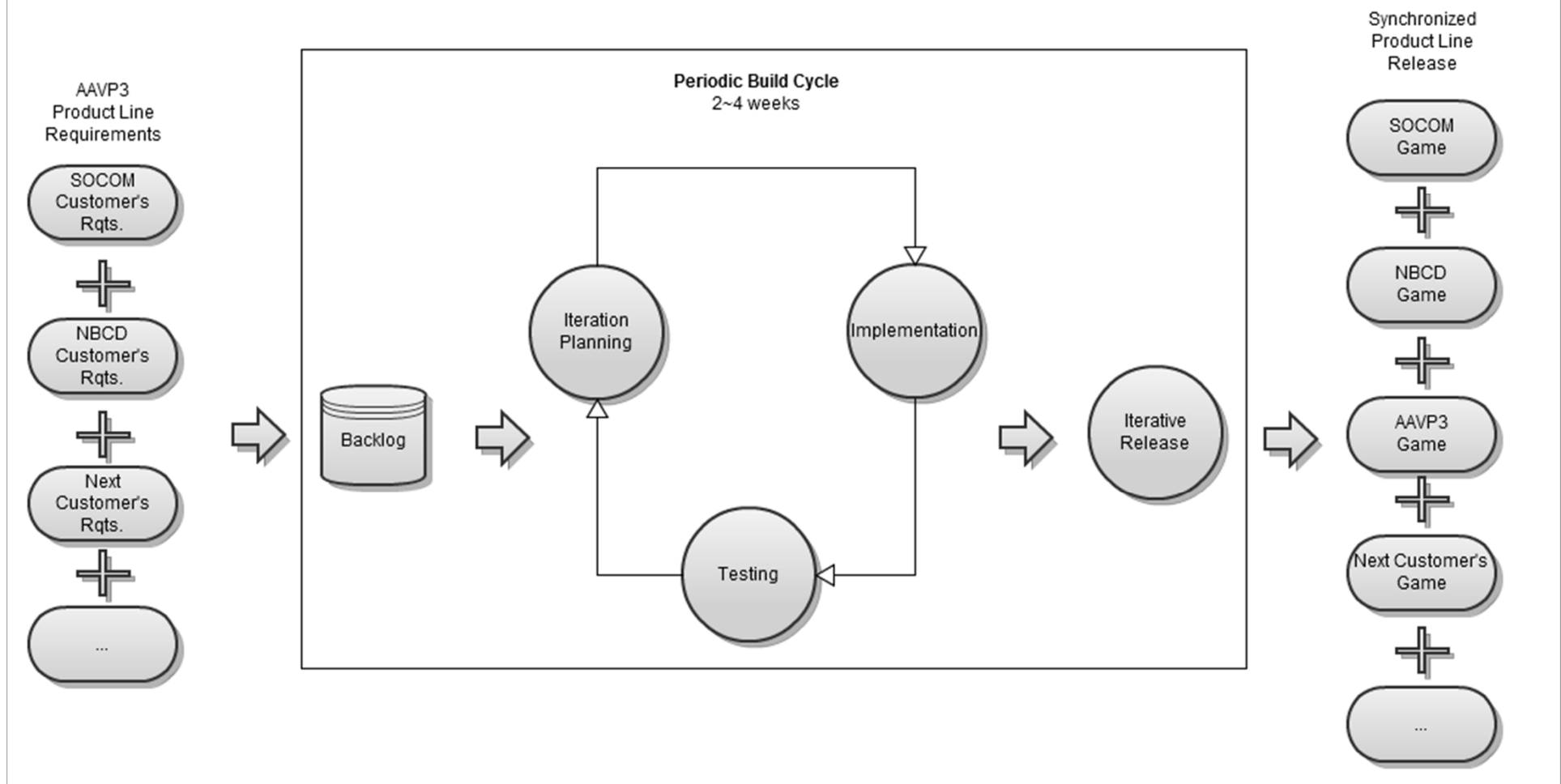
AAVP3 Development Lifecycle Model Overview

AAVP3 DLM Overview

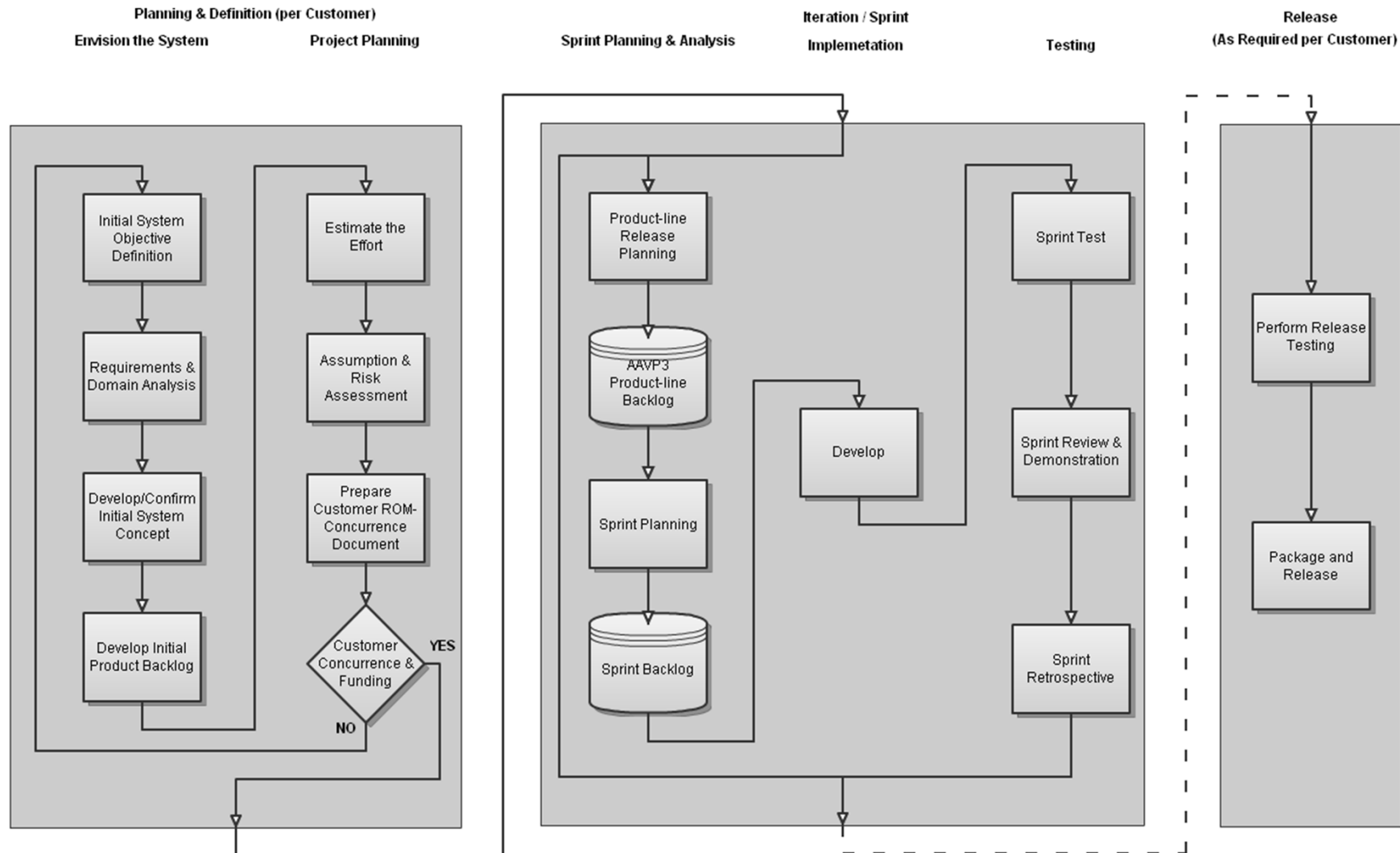
Planning & Definition

Iteration

Release



AAVP3 Development Lifecycle Model Overview



FOX

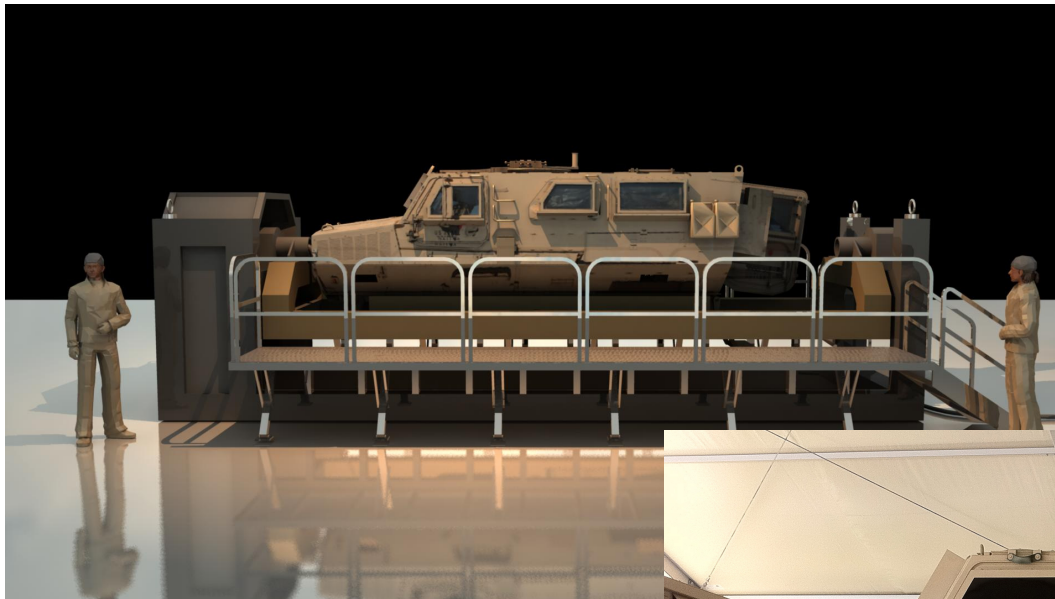


- FOX Simulator
 - Crew Skills
 - Sensor Simulations
 - Desktop and Fixed Simulator

- Reused everything in the AAVP3
 - Environments
 - Vehicle Models
 - IWS
 - Sensor Detection Models



TRICT / 18 Months / Hardware



- All Doors / Hatches Open
- Interior Identical to Real RG33

- Motion Platform
- 180 Degree Roll in Both Directions



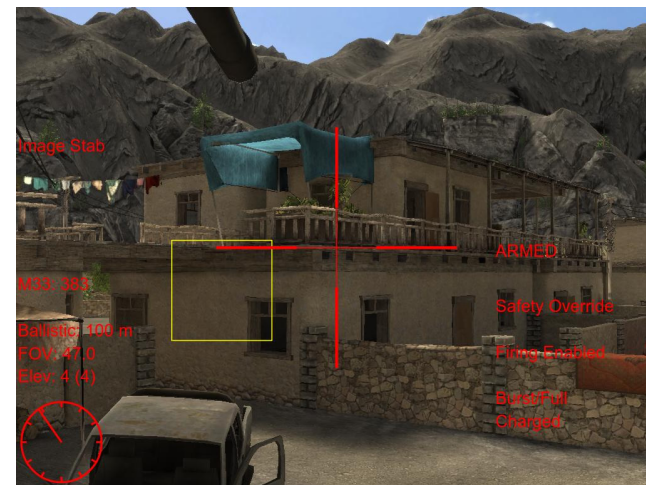
TRICT / 18 Months / Hardware



TRICT / 18 Months / Software



- Desert Valley Environment with Scenarios of varying difficulty.
- Instructor Workstation
 - Curveballs
 - AAR
- Vehicle Simulation
 - Controlling Motion Platform and Safety Features
- CROWS II Simulation



CBRN Dismount

- CBRN Dismount Prototype
- Four Handheld Sensors
- Joint Service Training
- Three Environments
- User-Defined Scenarios with Custom Contaminants



What Did We Learn?

- Retrospectives are extremely important
 - Act on the feedback immediately
- Experiment with different sprint lengths until one feels right
 - We always let the Developers determine the sprint length
- Don't appoint leaders in sprint teams, let them just appear on their own
 - This feels very counter-intuitive
- The daily meetings are crucial to communication
- Ideal days are way shorter than anyone thought they would be. We usually estimate ideal days at 2/3 of available days in the sprint. This has helped keep expectations in check with Project Leads.

What Did We Learn?

- Our Developers have taken ownership of our Products - they feel in control.
 - Product Proponents
- Code has become more reusable.
- Sprint Demos are a point of pride.
- We started giving story points to our bugs and it has helped in tracking velocity.
- Our velocity has steadily increased over time because we are forced to reevaluate ourselves at the end of **every** Sprint.
- Scrum allows Developers to just worry about developing.

The Present

- Large Team
 - Programmers: 31
 - Artists: 15
 - Level Designers: 4
 - Game Designers: 2
 - Support: 6
 - Test: 2
 - Project Leads: 12
 - Offsite Misc: 9
- Scrum is used on all software development.
 - AAVP
 - Mobile
 - Outreach
 - Prototype & Sustainment
- Dozens of Concurrent Projects.



Questions?

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Acronyms!

- **AAR** - After Action Review
- **AAVP3** - America's Army Visualization Platform 3
- **AGS** - Army Game Studio
- **CBRN** - Chemical, Biological, Radiological and Nuclear
- **CROWS II** - Common Remotely Operated Weapon Station, 2nd Generation
- **FBCB2** - Force XXI Battle Command Brigade and Below
- **IWS** - Instructor Workstation
- **TRICT** - Transportable Reconfigurable Integrated Crew Trainer
- **UE3** - Unreal Engine 3