

Pitch Technologies

Leadership thru Innovation

Corporate Overview



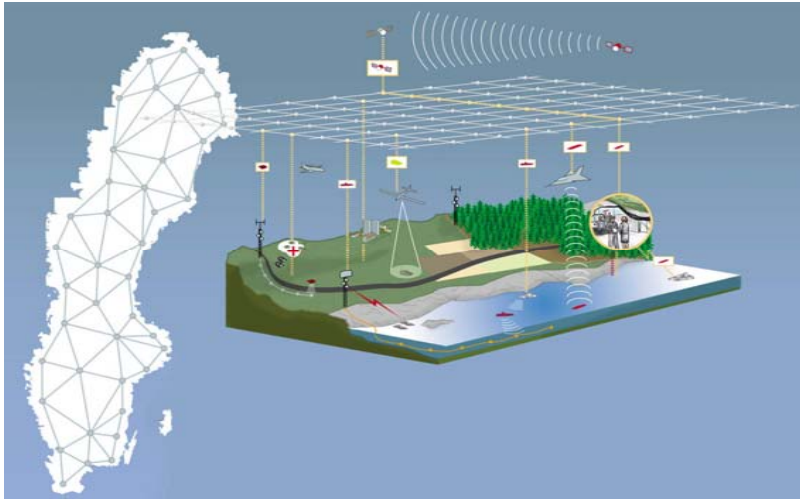
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Our Mission

To provide innovative state-of-the-art products, services and solutions to our customers for cost effective development and integration of distributed simulation systems,

and to build a great company that attracts, develops, excites and retains the most talented people

- **Focused primarily on the simulation market**
- **Provide products, services and solutions that are mission-critical to defense, aerospace, off- shore, science & research, manufacturing ... industries**



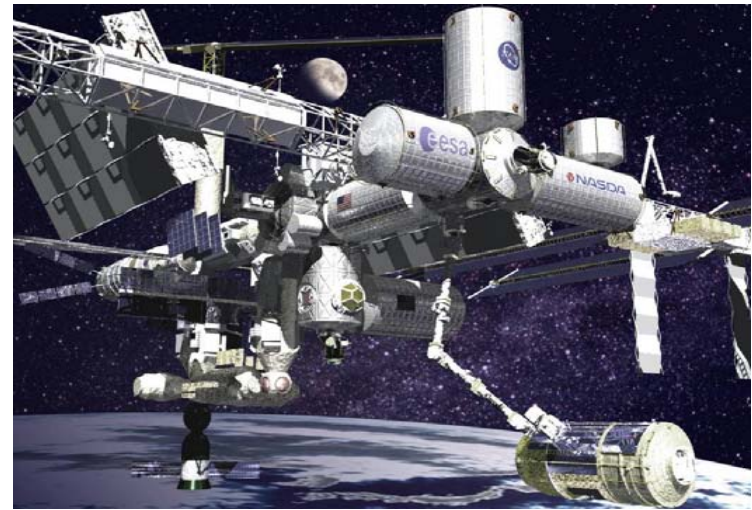
Network Based Defense



Off Shore Industry



Civil Security / Disaster Planning



*Pitch products used in NASA's new program
"The Moon and Beyond"*

Products

- Development Tools
- Runtime Tools
- Infrastructure products
 - ... to connect simulations
 - ... to establish enterprise simulation networks



Services and Solutions

- Strategic M&S Consulting
- Project Management and Systems Integration
- Architecture and Design



Training

- Architecture and Design
- HLA Training



Product Achievements

- Implemented six different infrastructures for interoperability between 1993 and 2007. pRTI™ 1516 is the latest and most advanced
- Visual OMT™ - the first graphical HLA object modeling tool
- First commercial RTI for HLA 1.3 to pass certification
- First complete RTI to implement the HLA IEEE 1516 specification: pRTI™ 1516
- First RTI to pass HLA 1516 certification
- Received “Thumbs up” from US press for first HLA1516 certification
- Member of several HLA standardizations committees

Certification Achievements

- Pitch has received certifications for HLA IEEE 1516 and HLA 1.3 for products from [DMSO](#), as described above. Pitch is also a [Certified Microsoft Partner](#) (ISV) and Pitch pRTI has passed Microsoft/Veritests tests

Award-winning Papers

- Pitch has received several awards for our R&D papers

END

Corporate Overview



PITCH 

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The new generation of Pitch products for HLA Evolved

Pär Aktanius, Products Specialist
Magdeburg, February 2008

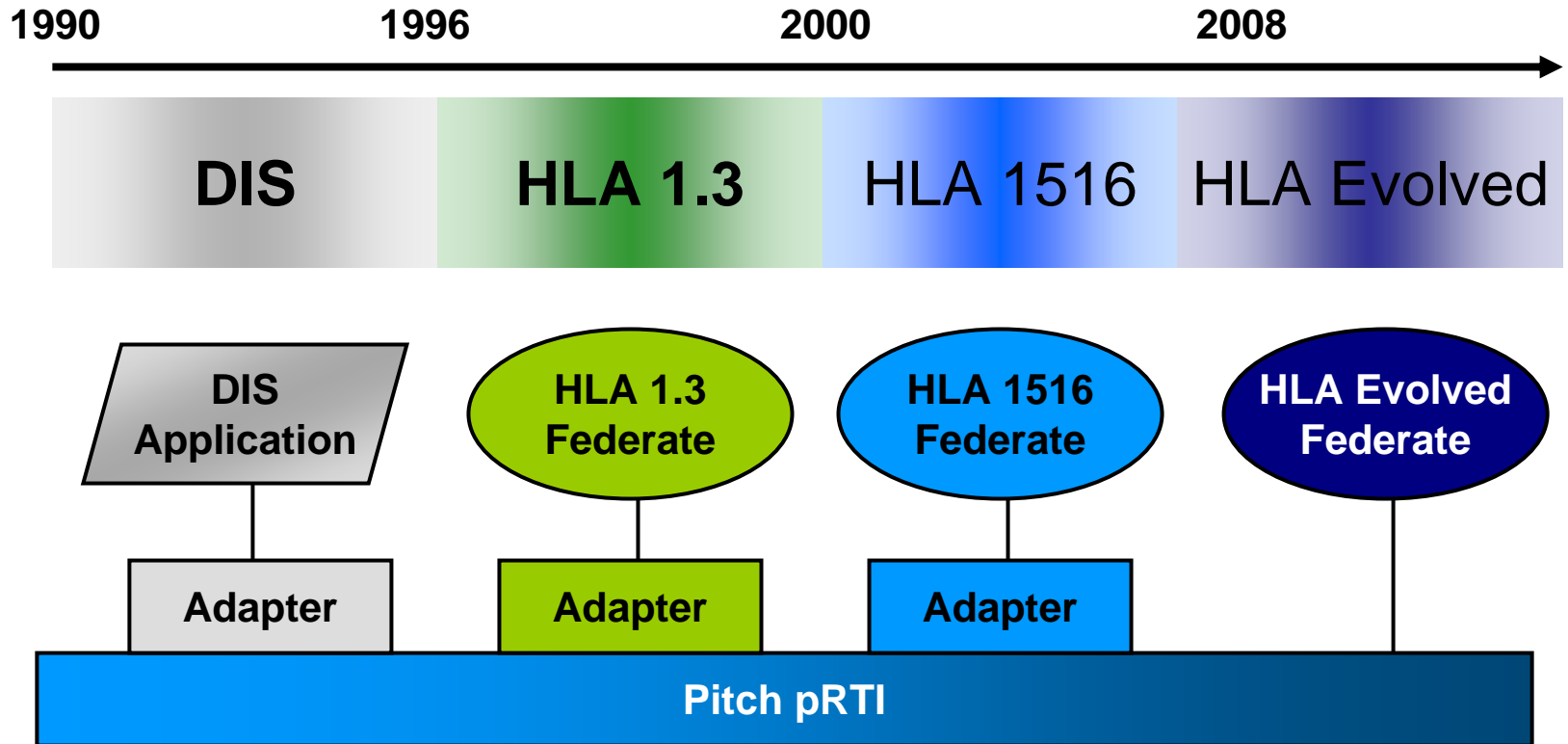


PITCH 

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- » Pitch is a major contributor to the HLA Evolved standard
- » First implementation of an HLA Evolved RTI and federates demonstrated at I/ITSEC 2006 and 2007
 - » Focus on APIs
 - » Ask us about preview versions
- » First implementation of the HLA Evolved Web Services API released
 - » Demonstrated already early 2006
 - » Version 1.0 was released June 2007
- » Gradually adding support for HLA Evolved functionality
 - » Preview versions during Fall 2007 and Spring 2008
 - » Focus on Fault tolerance, Modular FOMs, etc
 - » Maintaining complete versions for 1516-2000 (and 1.3) in parallel with this

- » HLA Evolved Web Services API already released
- » Pitch pRTI version 4.0 will support HLA Evolved
 - » Demo of preview here today
 - » Customers with a valid maintenance agreement will get it at no additional cost
- » HLA Evolved version of Pitch Recorder available
 - » And more products
- » Watch out for the upcoming Pitch Visual OMT for HLA Evolved
 - » "Modular OMT"



Development Tools

**Pitch Developer
Studio**

**Pitch
Visual OMT**

Runtime Tools

**Pitch
Recorder**

**Pitch
Commander**

RPR FOM Tools

**Pitch
GE Adapter**

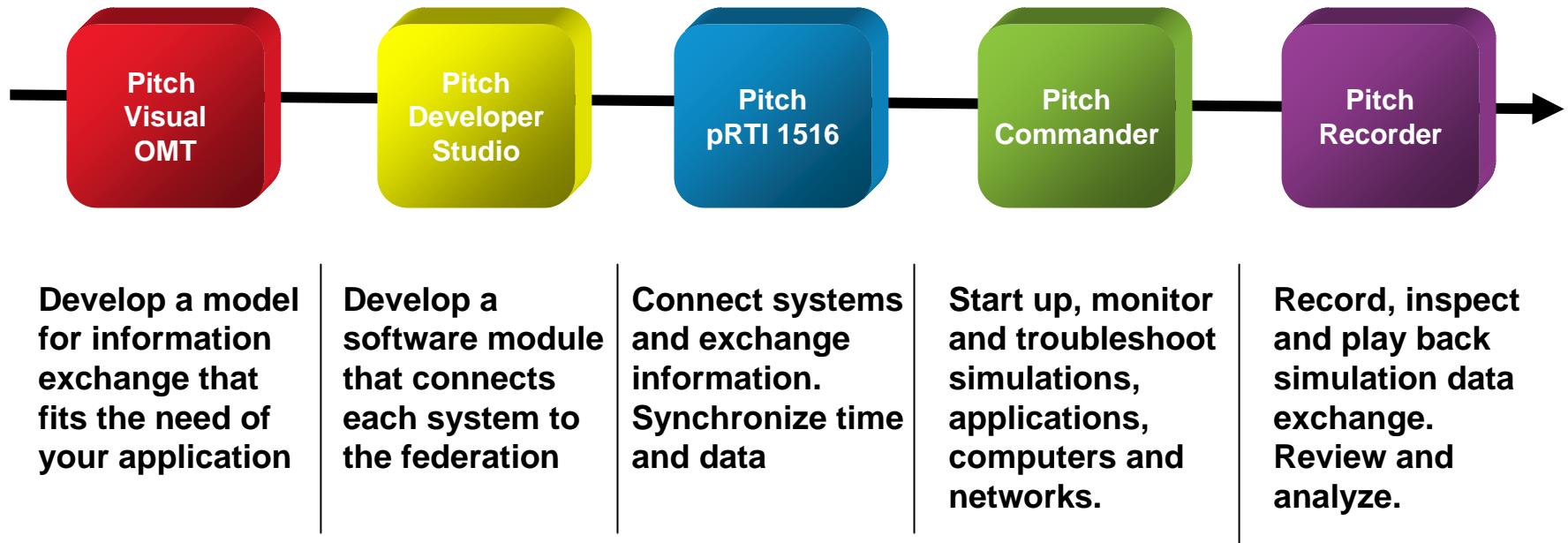
**Pitch
DIS Adapter**

**Pitch
pRTI**

**Pitch Web Services
Connector**

**Pitch
Booster**

Infrastructure Products

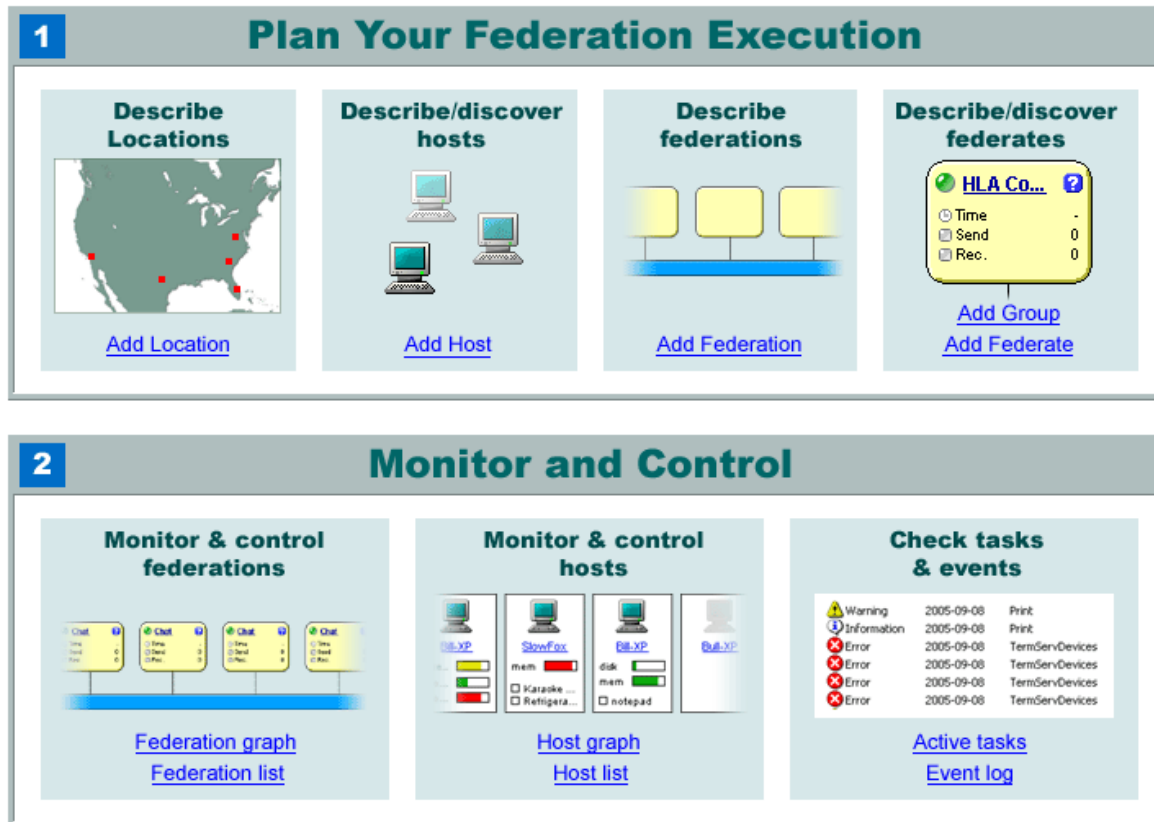


Pitch Commander™

Monitor and Control



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The screenshot shows the HLA Commander application window. The title bar reads "HLA Commander" and the URL "www.pitch.se" is displayed. The interface is divided into several sections:

- Left Panel (Tree View):** Shows a hierarchical structure of sites and hosts. The "Hosts!" folder is expanded, showing:
 - Orlando!
 - Host-34
 - Linux-64
 - Win-44
 - Win-11
 - Win-47
 - San Diego!
 - SUN-98
 - Linux-96
 - Mac-88
 - Host-82
 - SUN-11
 - SUN-46
 - Linux-54
 - Linux-53
 - Mac-63
 - Mac-43
 - Stockholm!
 - Mac-60
 - SUN-11
 - Linux-97
 - Mac-45
 - Host-20
- Main View:** Displays details for two selected sites:
 - Orlando (5 hosts):** Shows icons for Host-34, Linux-64, Win-44, Win-11, and Win-47.
 - San Diego (10 hosts):** Shows icons for SUN-98, Linux-96, Mac-88, Host-82, SUN-11, and SUN-46. Below each icon are resource bars for CPU, MEM, and DISK, and a list of active processes (e.g., F-15 Fed..., Radar Fe..., Scenario..., DIS Ada..., Datafusio..., 3Dviewer, Logger).
- Control Panel:** Contains buttons for "Start Visualizations", "Start Players", "Finish and Collect Logs", and "Kill All and Clean Up".
- Log Table:** A table at the bottom showing system events:

Time	Location	Description
15:49:01	Orlando	Start MyMainFederate
15:49:01	Orlando	Start MyDatabase
15:49:01	Stockholm	Commander Login

» Monitor and control your sites and hosts

The screenshot displays the HLA Commander interface with a federate view. The left sidebar shows a tree structure of hosts and federates. The main area is divided into sections: Default, Analysis, Radar, and Platforms. Each section contains several federate cards with status indicators and performance metrics.

Section	Federate Name	R/C	Send	Rec.
Default	ScenarioM...	2343	345/s	0/s
	Pacer	2343	345/s	0/s
	DIS Adapter	2343	345/s	0/s
Analysis	Logger	2343	345/s	0/s
	XVD-08	2343	345/s	0/s
Radar	IOS	2343	345/s	0/s
	Fusion	2343	345/s	0/s
	PQR	2343	345/s	0/s
	IOS	2343	345/s	0/s
	Ground	2343	345/s	0/s
Platforms	Sensors	2343	345/s	0/s
	Air	2343	345/s	0/s
	Satelite	2343	345/s	0/s
	F-15	2343	345/s	0/s
	Mig-29	2343	345/s	0/s

At the bottom, there are control buttons: Start Visualizations, Start Players, Finish and Collect Logs, and Kill All and Clean Up. Below these is a log table:

Time	Location	Description
17:23:40	Orlando	Start MyMainFederate
17:23:40	Orlando	Start MyDatabase
17:23:40	Stockholm	Commander Login
17:23:40	Stockholm	Commander Logout

» Monitor and control your HLA Federation

Pitch Web Services Adapter™

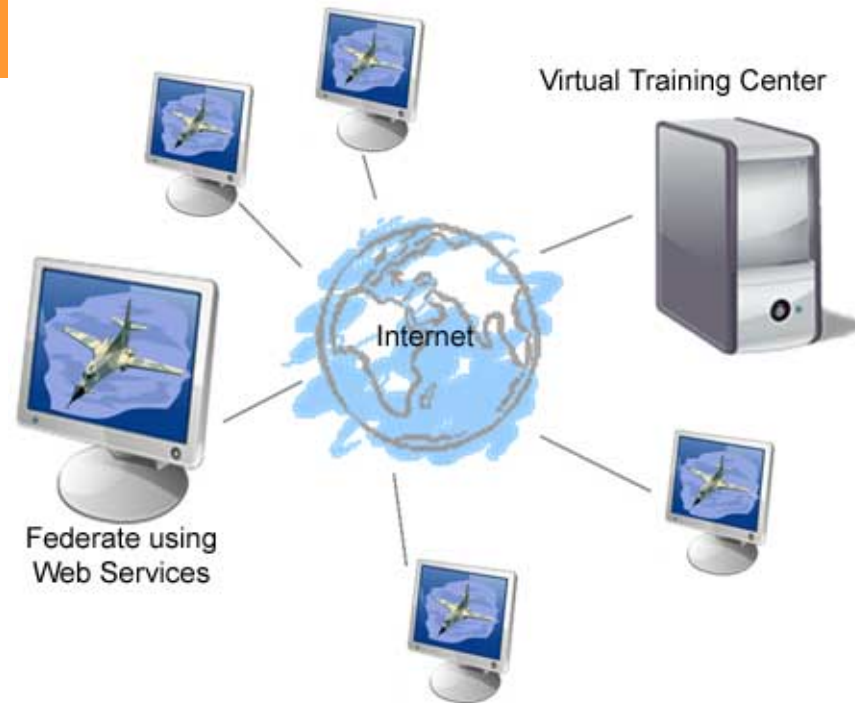
Make Your Simulation a Service



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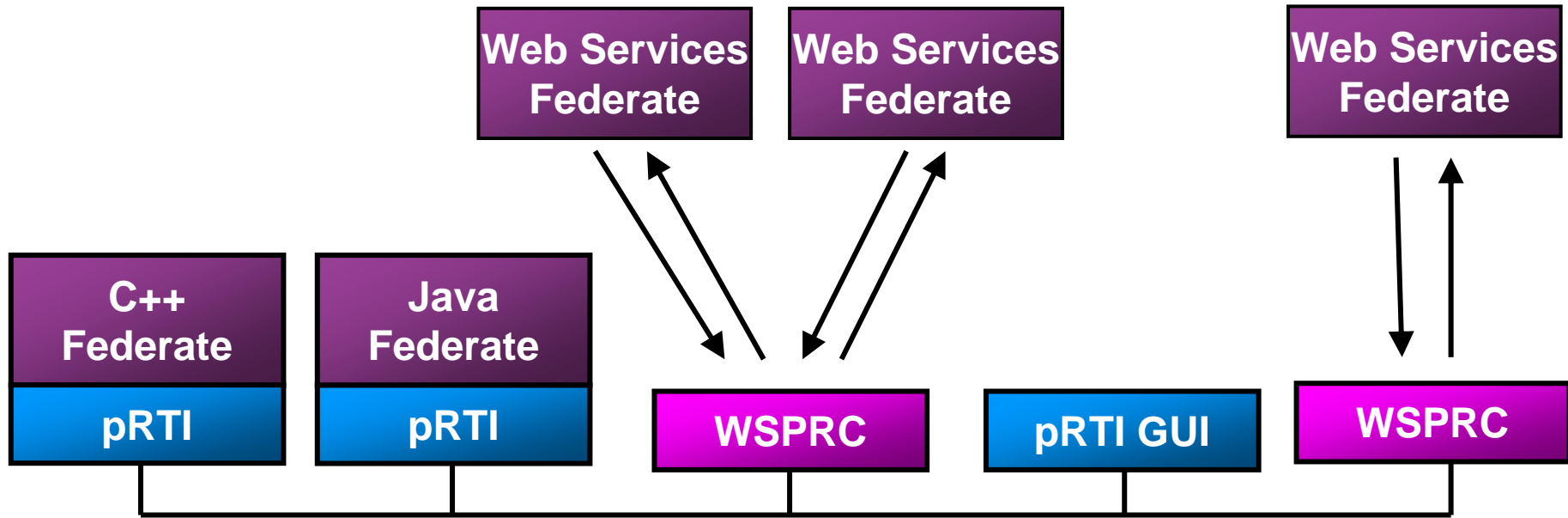
Simulate Across the World
 Simulations can be provided as a service, for example over the Internet



```

http://mytraining.army.mil/PSOscenario
User: GI5532
Password: *****
    
```

Authentication and https encryption also available



- » Connect to HLA federations over wide area networks such as the Internet
- » Based on the new, standardized WSDL API of HLA Evolved – the next version of the standard

- » The next generation of simulations are readily available services on the Internet/Intranet
- » Point your simulator to the federation over the internet
 - » Just like you use a web browser
- » HLA Evolved adds a Web Services (WSDL) API to the IEEE 1516 HLA standard
 - » Pitch has already implemented this API
- » Current version 1.0

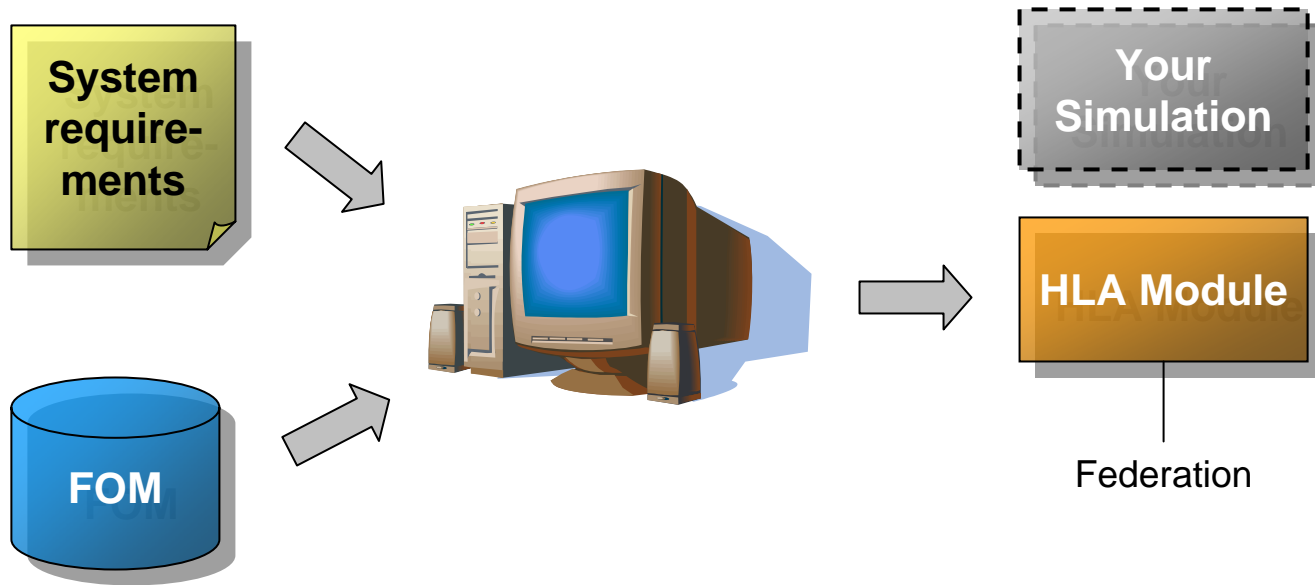
Pitch Developer Studio™

Develop and Extend Your HLA Simulations



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- » Pitch Developer Studio is a tool that enables you to generate a high-quality HLA module for your new or existing simulation. Get an "HLA Expert in a Box".

**Full HLA
Compatibility**

**Support any
Information
model (FOM)**

**Support current
and future HLA
versions and RTIs**

**Initialization,
start&stop and
scenario patterns**

**Fault-tolerance
patterns and
algorithms**

**Pitch Developer Studio
Generated Module**

**Time-managed,
self-pacing or
free-running**

**High-performance
patterns and
algorithms**

**Synchronize,
save and restore**

**Easy to use –
generates full
documentation**

**C++ and
Java code**

- » Add an HLA module to your existing simulations
- » Build a new simulator, based on an HLA module
- » Build middleware that fits several simulations
- » Build a bridge between federations
 - » Federations with different information models
 - » Federations that use different RTIs

» Features

- » Generates federate code in Java or C++
- » Implements best-practice
- » Generates high-performance federate code
- » Handles any FOM and all standard HLA data types
- » Programmers can update the federation by set and get functions
 - » Example: Aircraft.setAltitude, Aircraft.getAltitude
- » Standard and advanced mode for code generation
- » Round-trip support: preserves your own code

» Licensing

- » No runtime license fee for produced code

Pitch HLA Evolved Products

Make Your Simulation Work Together



PITCH 

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Development Tools

Pitch Developer Studio

Pitch Visual OMT

Runtime Tools

Pitch Recorder Evolved ready

Pitch Commander

RPR FOM Tools

Pitch GE Adapter Evolved ready

Pitch DIS Adapter

Pitch pRTI Evolved ready

Pitch Web Services Connector Evolved ready

Pitch Booster

Infrastructure Products

	Development	Deployment	Net-centric	Quality
FOM Modules	X	X		X
Extensible XML Format for OMT	X			
Schemas for OMT Compliance Testing	X			X
Federate Conformance in OMT	X			X
Encoding Helpers	X			X
Web Services (WSDL API)	X	X	X	
Dynamic Link Compatibility		X		
Standardized Time Types	X	X		X
Fault Tolerance		X		X
Smart Update Rate Reduction		X	X	
Improved Support for Data Logging	X	X		X
Evolved Transportation Types		X	X	
List Federation Executions		X		
Explicit Connect Statement		X	X	
Object names can be reused	X	X		
DoD Interpretations				X

Pitch HLA Evolved Products



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Final Summary





- » Pitch offers a powerful product family for building simulation systems that interoperate. Several new products are now added to provide new capabilities
- » Pitch and our local distributors will be happy to assist you with
 - » Additional information
 - » Evaluation of products
 - » Purchasing
 - » Consulting and training