OGC Interoperability Program

5th Workshop on the use of GIS/OGC standards in meteorology

Offenbach, Germany

Dr. Ingo Simonis, Director IP & Science

28 October 2014

Interoperability

- EASIER SAID THAN DONE -

OCT **OPEN GEOSPATIAL CONSORTIUM** 2014

- MAKING LOCATION COUNT -

OGC‘s Approach for Advancing Interoperability

- A setting that aligns technology users and providers to work collaboratively

RIGHT SETTING

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OGC‘s Approach for Advancing Interoperability

- An agile development environment to evolve, test, and validate standards under marketplace conditions

RIGHT SETTING

RIGHT ENVIRONMENT

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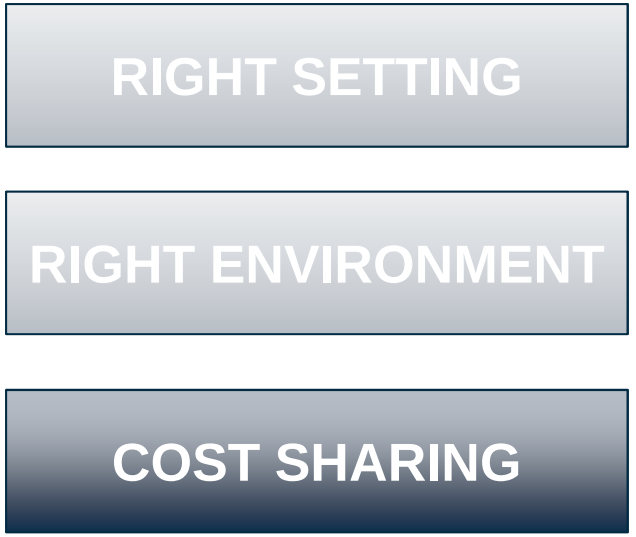
OGC‘s Approach for Advancing Interoperability

- An effective way to share the costs of developing well-crafted standards that provide concrete foundations for future enterprise architectures



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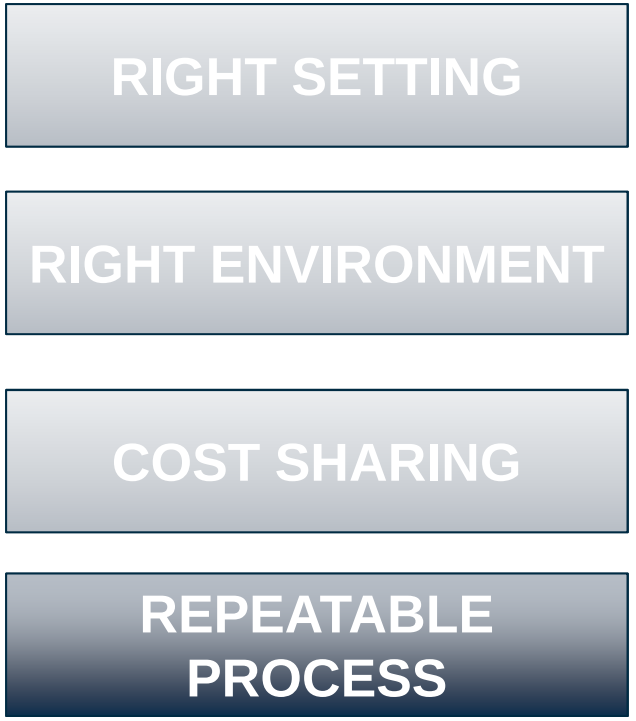
OGC‘s Approach for Advancing Interoperability

- A repeatable process for building & exercising private-public partnerships to:
  - accelerate development of emerging concepts
  - rapidly demonstrate new mission capabilities
  - drive global trends in technology and interoperability



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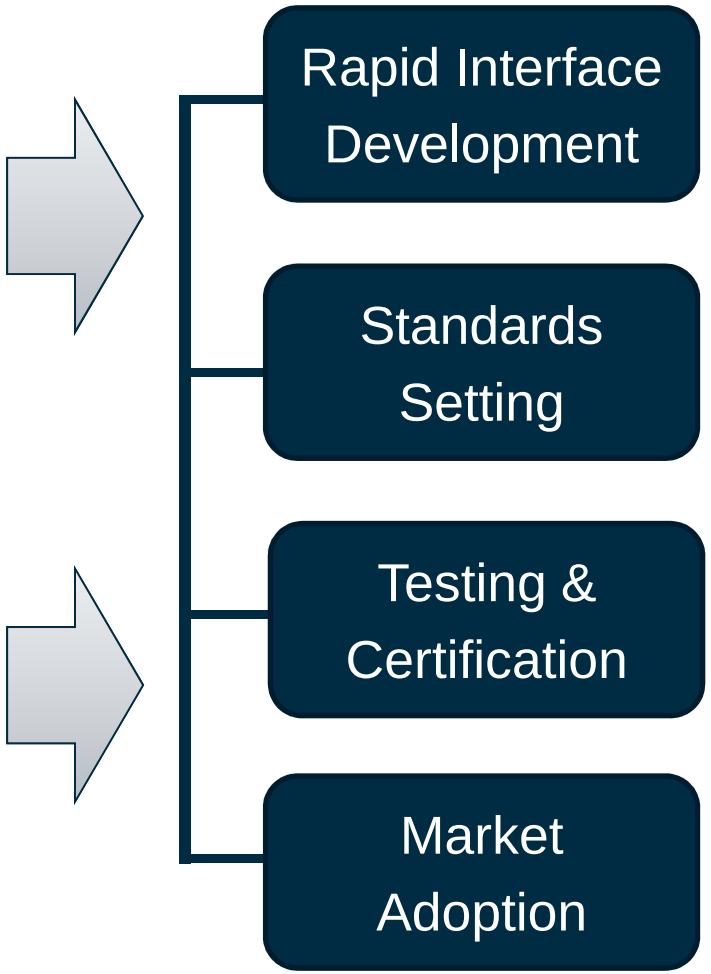
OGC's Approach for Advancing Interoperability

- ***Interoperability Program* (IP)** – **a global, innovative, hands-on rapid prototyping and testing program designed to unite users and industry in accelerating interface development and validation, and the delivery of interoperability to the market**
- *Standards Program* – Consensus standards process similar to other Industry consortia (World Wide Web Consortium, OMA etc.).
- *Compliance Testing and Certification Program* – allows organizations that implement an OGC standard to test their implementations with the mandatory elements of that standard
- *Communications and Outreach Program* – education and training, encourage take up of OGC specifications, business development, communications programs



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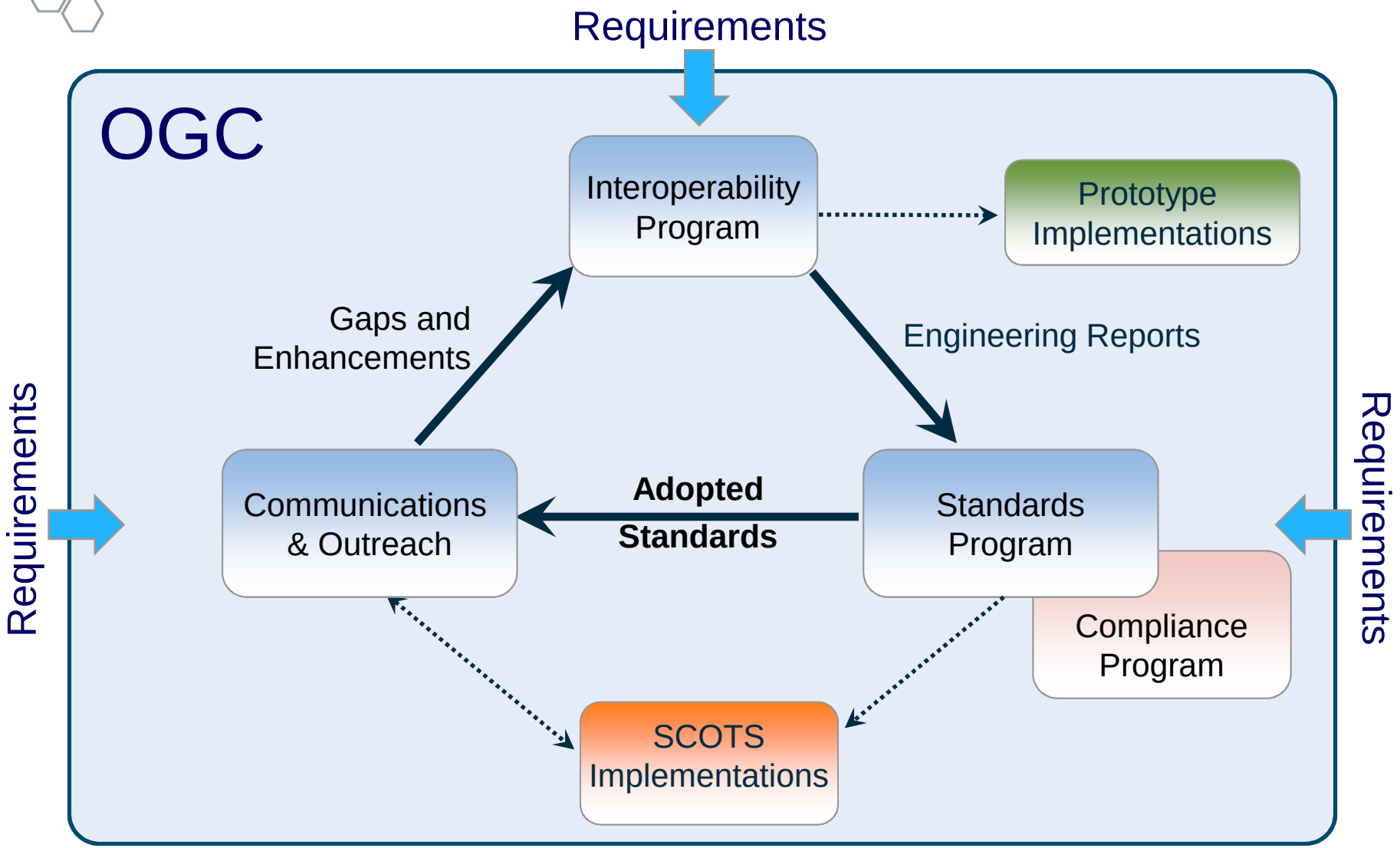
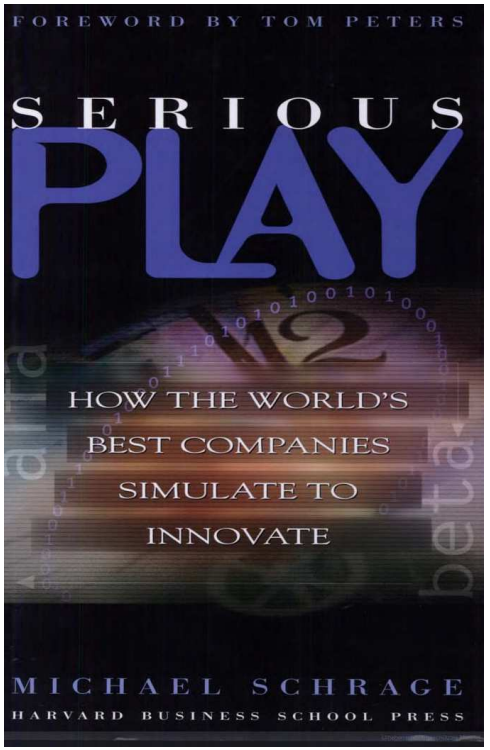
Iterative Development
Yielding Tested Specifications



Innovation through prototyping

As a rule, the more prototypes and prototyping cycles per unit of time, the more technically polished the final product.

M. Schrage



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Prototyping Versus Specifying

Prototyping yielded products with roughly equivalent performance, but with about 40% less code and 45% percent less effort.

The prototyped products rated some what lower on functionality and robustness, but higher on ease of use and ease of learning.

Specifying produced more coherent designs and software that was easier to integrate.

Boehm, Gray, Seewald (1984)
IEEE Transactions of Software Engineering, Vol 10, 1984

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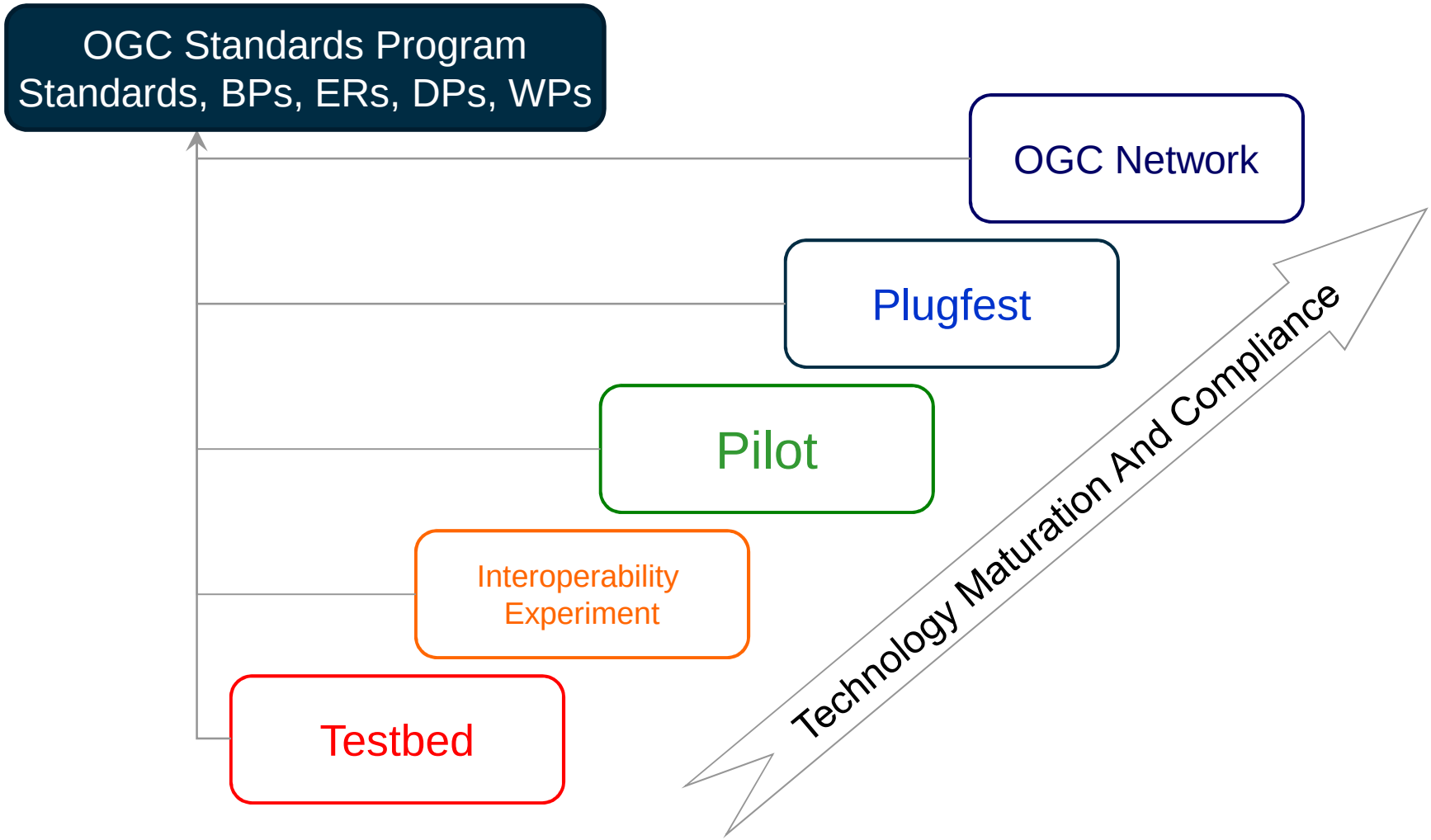
Increasing the Technology Readiness Level



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Testbeds

- **Testbeds** are fast-paced, multi-vendor collaborative efforts to define, design, develop, and test candidate interface and encoding specifications

- These draft specifications are then reviewed, revised, and, potentially, approved in the OGC Specification Program

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Testbed 11

- RFQ is out! Closes Nov 21
- http://www.opengeospatial.org/standards/requests/126

Testbed 11 - Topics

OGC Testbed 11	Threads			
Themes	**Climate Resilience**	**Urban Resilience**	**Aviation**	**Geo4NIEM***
Cloud computing and performance (and security)	●			
Aviation and Flight Information (and security)			●	
Climate / Big Data processing and analysis	●			
Provenance – query and data optimization		●		
Digital Weather service and data delivery (WCS profile and WXXM)	●		O	
Social Media information processing (search, formats, context)	O	●		
Mobile applications (and security)	●			
Smart Cities / IoT		●		
Geosynchronization, GeoPackage and possible extensions		●	O	
Semantic Mediation and Linked Data	O	●		
Security (identification, authorization, access)	●	O	O	●
Symbology Management & Styling		●		

● - primary / lead
O - cross-thread related tasks

* - may be a thread or separate project (TBD)

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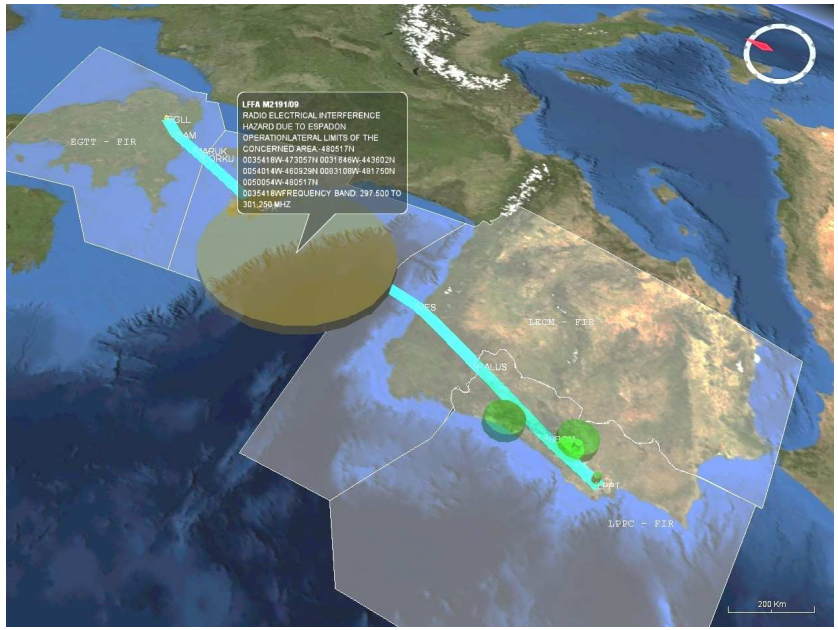
OGC Pilot Projects

OGC Pilot Projects apply and test OGC standards in real world applications using standards-based commercial off-the-shelf (SCOTS) products that implement OGC standards. Pilot Projects also help organizations identify gaps to be addressed by further standards development work.

Special Activity Airspace (SAA)

- Increasing situational awareness
- Demonstrate the use of real-time weather information (radar) accessible via web services to enable increased level of situational awareness for flight planners, pilots and operations centers



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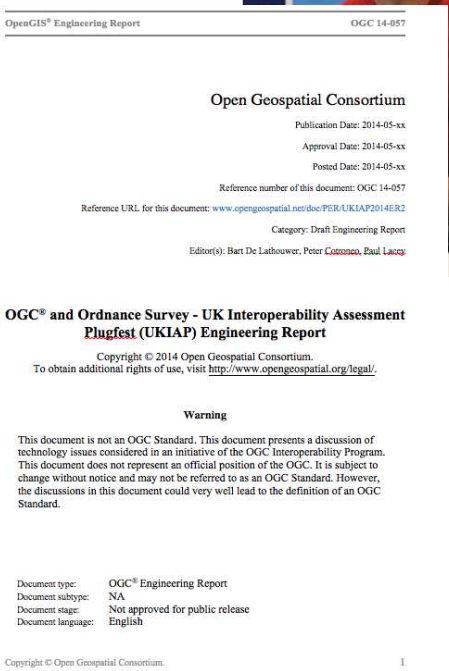
OGC Plugfest Projects

OGC Plugfests are events where vendors cooperatively test (and possibly refine) their OGC-based products in a hands-on engineering setting. Plugfests are used to:

① assess the degree to which different products in the marketplace interoperate together based on their implementation of OGC standards,

② advance the interoperability of geospatial products and services based on OGC standards in general or within specific communities.



OpenGIS® Engineering Report OGC 14-057

Open Geospatial Consortium

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Category: Draft Engineering Report
Editor(s): Bart De Lathouwer, Peter Cotroneo, Paul Lacey

OGC® and Ordnance Survey - UK Interoperability Assessment Plugfest (UKIAP) Engineering Report

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Warning

This document is not an OGC Standard. This document presents a discussion of technology issues considered in an initiative of the OGC Interoperability Program. This document does not represent an official position of the OGC. It is subject to change without notice and may not be referred to as an OGC Standard. However, the discussions in this document could very well lead to the definition of an OGC Standard.

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Document subtype:	NA
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Deliverables of OGC Interoperability Projects

1. Technical Documents

(draft standards, best practices, change requests, etc)

2. Prototype Implementations

(services, clients, tools, etc)

3. Demonstrations

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EXAMPLES OF TECH EVOLUTION

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OWS Testbeds support of SWE Version 1

OWS-1 Testbed

- Sponsors: EPA, General Dynamics, NASA, NIMA
- Specs: SOS, O&M, SensorML, SPS, WNS
- Demo: Terrorist, Hazardous Spill and Tornado
- Sensors: weather stations, wind profiler, video, UAV, stream gauges

2001/02

OWS-3 Testbed

- Sponsors: NGA, ORNL, LMCO, BAE
- Specs: SOS, O&M, TML, SensorML, SPS
- Demo: Forest Fire in Western US
- Sensors: weather stations, wind profiler, video, UAV, satellite

2005

OWS-4 Testbed

- Sponsors: NGA, NASA, ORNL, LMCO
- Specs: SOS, O&M, SensorML, SPS, TML, SAS
- Demo: Radiation, Emergency Hospital
- Sensors: weather stations, wind profiler, video, UAV, satellite

2006

SWE v1 Standards approved:

SensorML – V1.0.1
TML – V1.0
SOS – V1.0
SPS – V1.0
O&M – V1.0
SAS – V0.0
WNS – Best Practices

2007

Source: M. Botts

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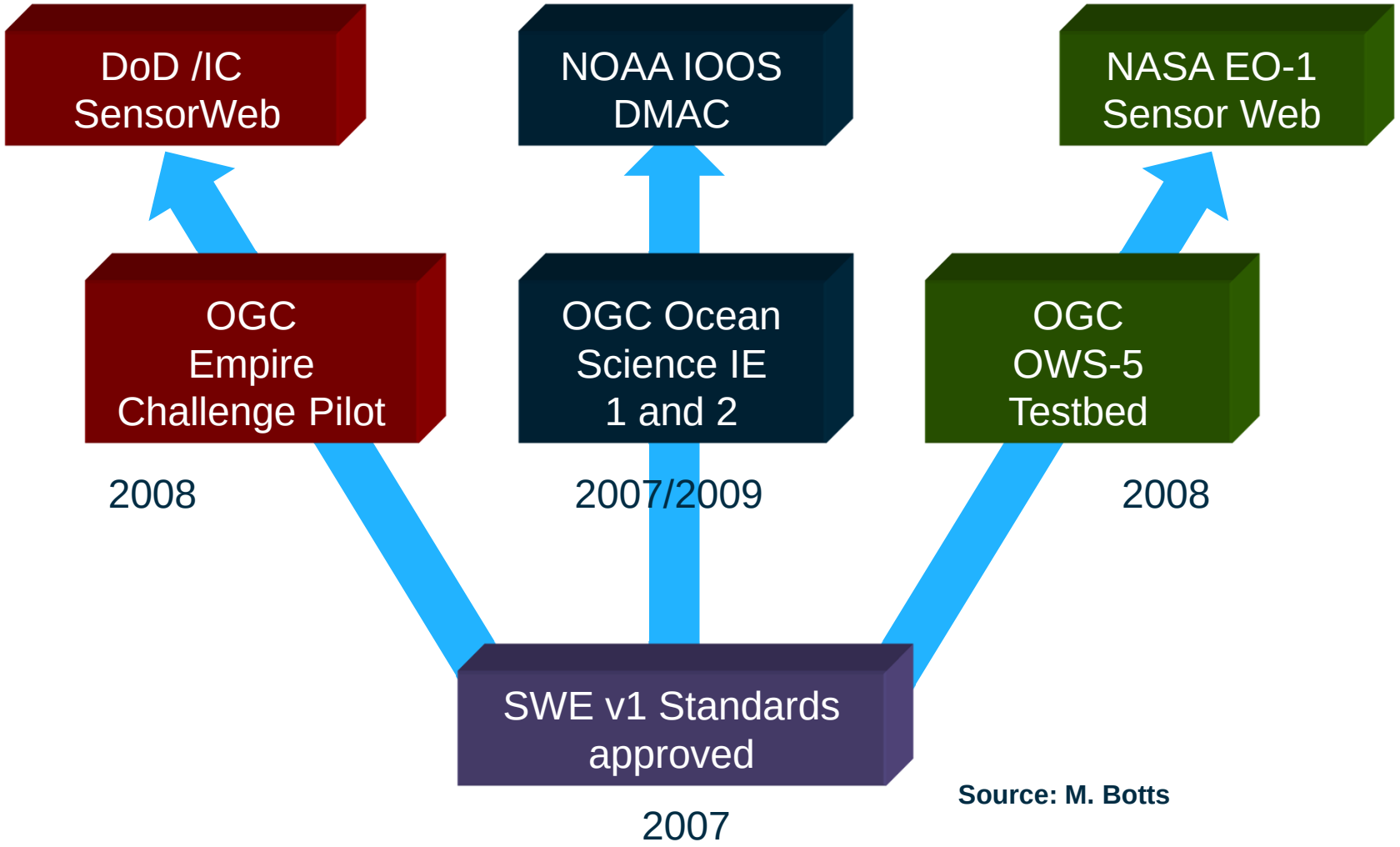
OGC IP influence on SWE deployments



Source: M. Botts

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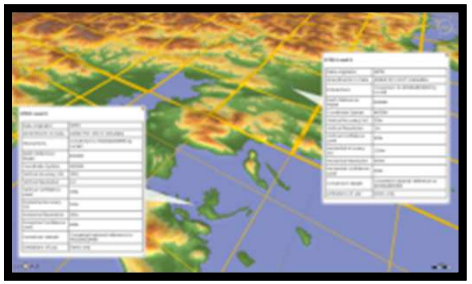
OGC Aviation Maturity



2008-2009:
OWS-6

2010: OWS-7

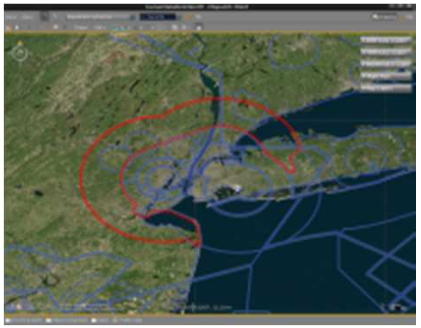
2010-2011:
FAA SAA Pilot

2011: OWS-8

2012: OWS-9

2013-2014:
AAtSH

2013-2014:
OWS-10



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SUMMARY

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IP Initiatives: 1999 to 2014

Plugfests	4
Pilots	26
Interop Experiments	18
Testbeds	18
Concept Development	13
Support Services	6
Total	**85**

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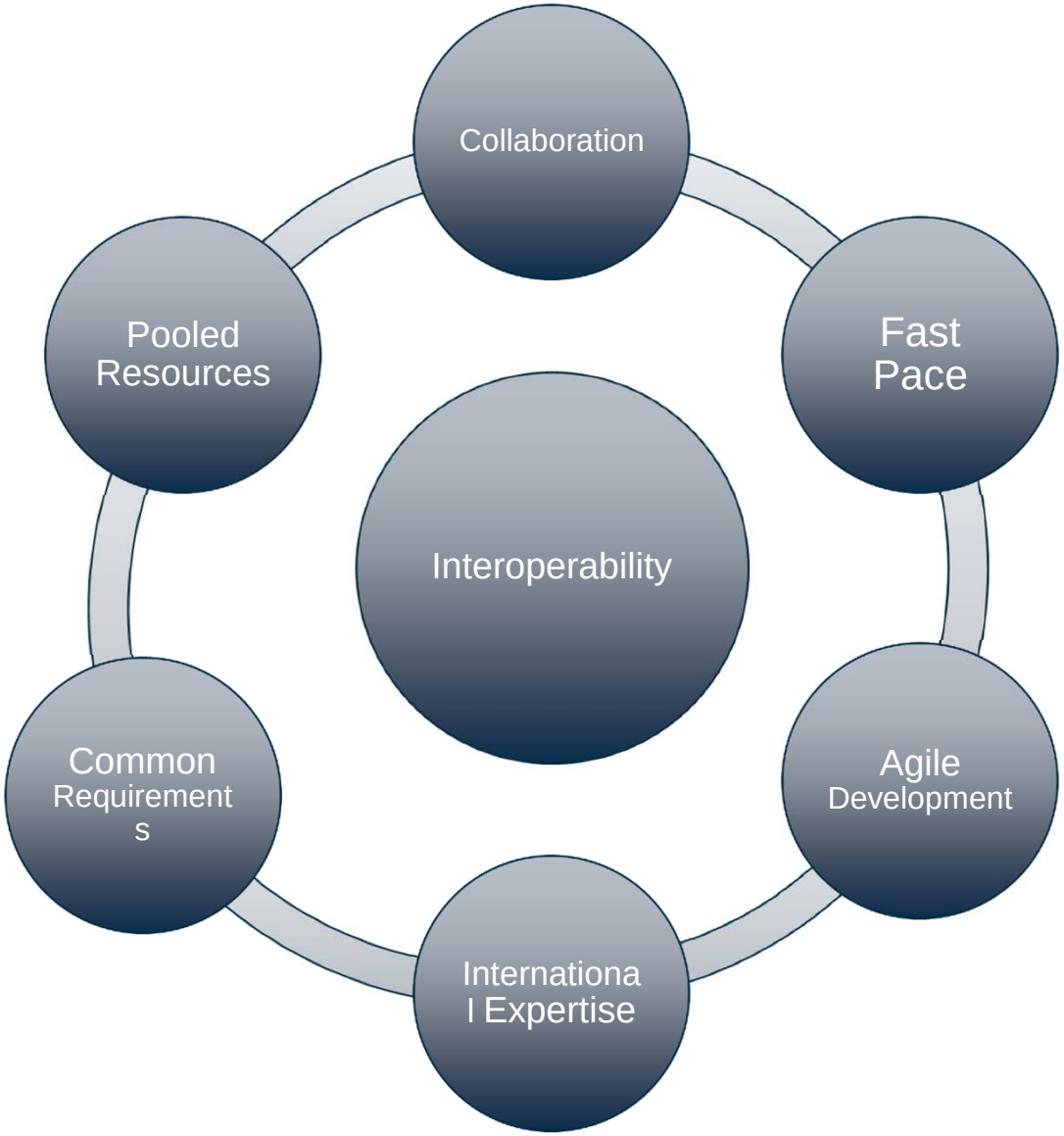
Ingredients for Success



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Return on Investment

Participants

Business potentials

- **Early insights and skill building**
- **Early visibility and market deployment**
- **Direct influence**
- **Broaden market reach**

Sponsors

Significant efficiencies

- **Ability to Determine Market Interest**
- **Accelerated process - workable interface specifications in 4-6 months**
- **Vendors test, validate and demonstrate interface integrity – Rapid time to market**
- **Leverage of other sponsor' funding to solve common/similar problems**

OWS-9 ROI for combined Sponsor funding = 3.5

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Thank you. Questions?

www.boardpanda.com

Last ideas for your Halloween Pumpkins!

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