



OGC TC

October 2006 Tyson's Corner

ICS + CAD/GIS WG

Carsten Rönsdorf

Ordnance Survey (GB)



Meeting # 6 : Tyson's Corner, October 2006



- **Wednesday evening group dinner (12 Members)**
- **08:30 WG Meeting (28 members and guests)**
- **Overview of Working Group** - Tim Case, Chair
- **Extended Geometries Initiative** – Paul Scarponcini, Bentley Systems (***Kritik an CityGML Geometriemodell***)
- **3D Utilities** – Carsten Rönsdorf, OS
- **CityGML** – Thomas Kolbe, U Bonn
- **OWS-4 Status Report** – Paul Cote, Harvard GSD
- **12:00 Close**



3 D utilities in UK

C a r s t e n R ö n s d o r f - O r d n a n c e S u r v e y

OGC

O G C T C 5 O c t 2 0 0 6

*Helping the World to Communicate
Geographically*



Street Openings in UK

- About 4 million per year on behalf of utility companies

Source: AA 1997

- 1,000,000 holes dug in London's roads every year

Transport for London 2004

- Congestion costs the London economy £1.2b each year

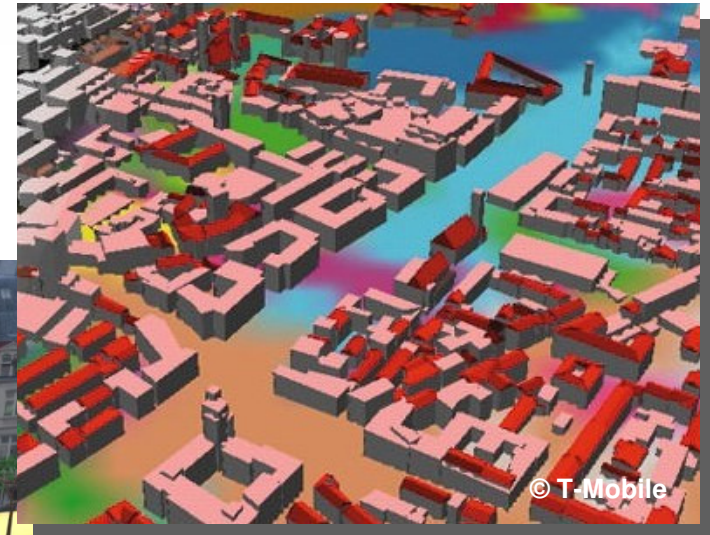
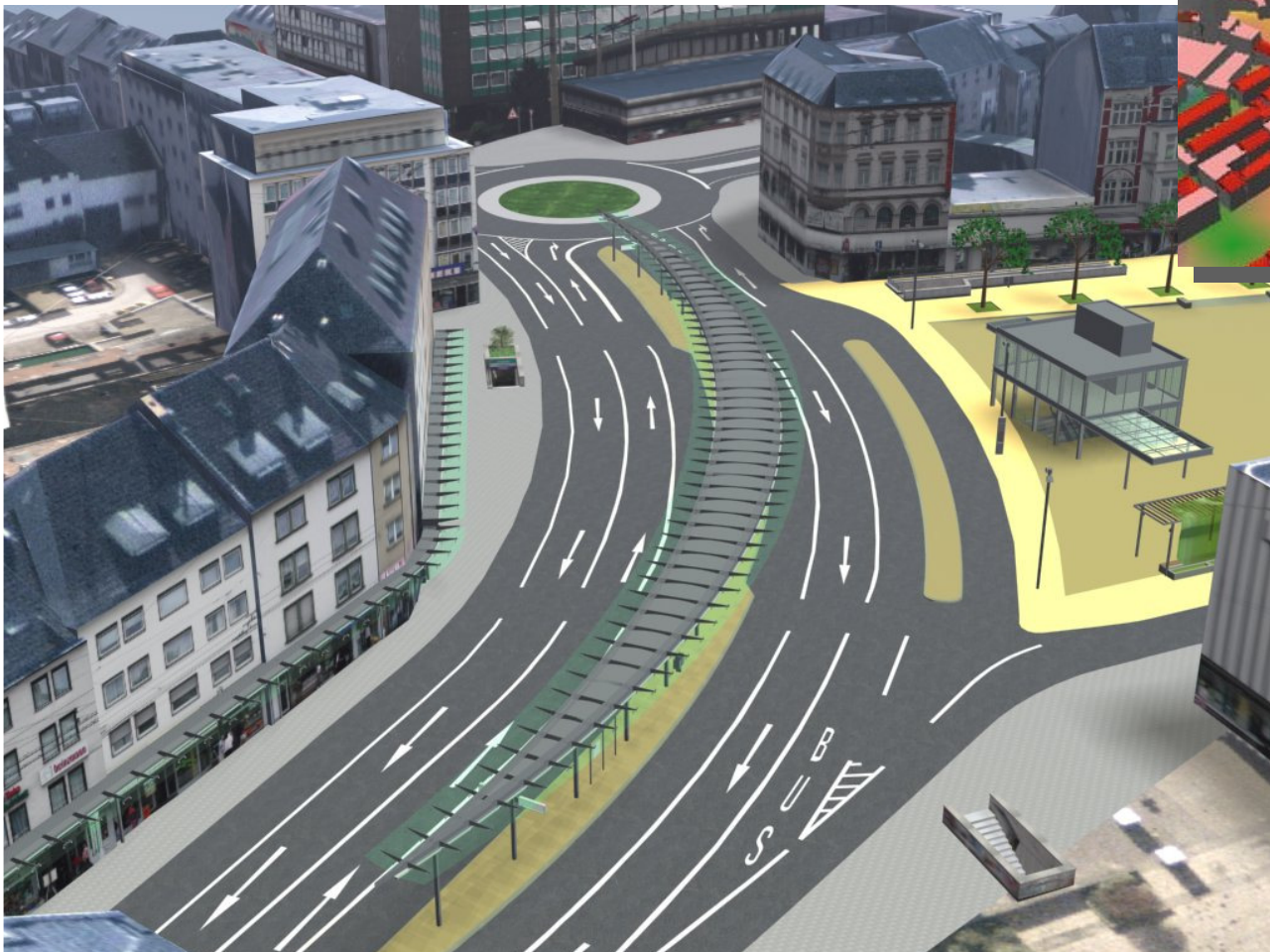
London Chamber of Commerce 2003

Virtual 3D City Models



CityGML – OGC Discussion Paper

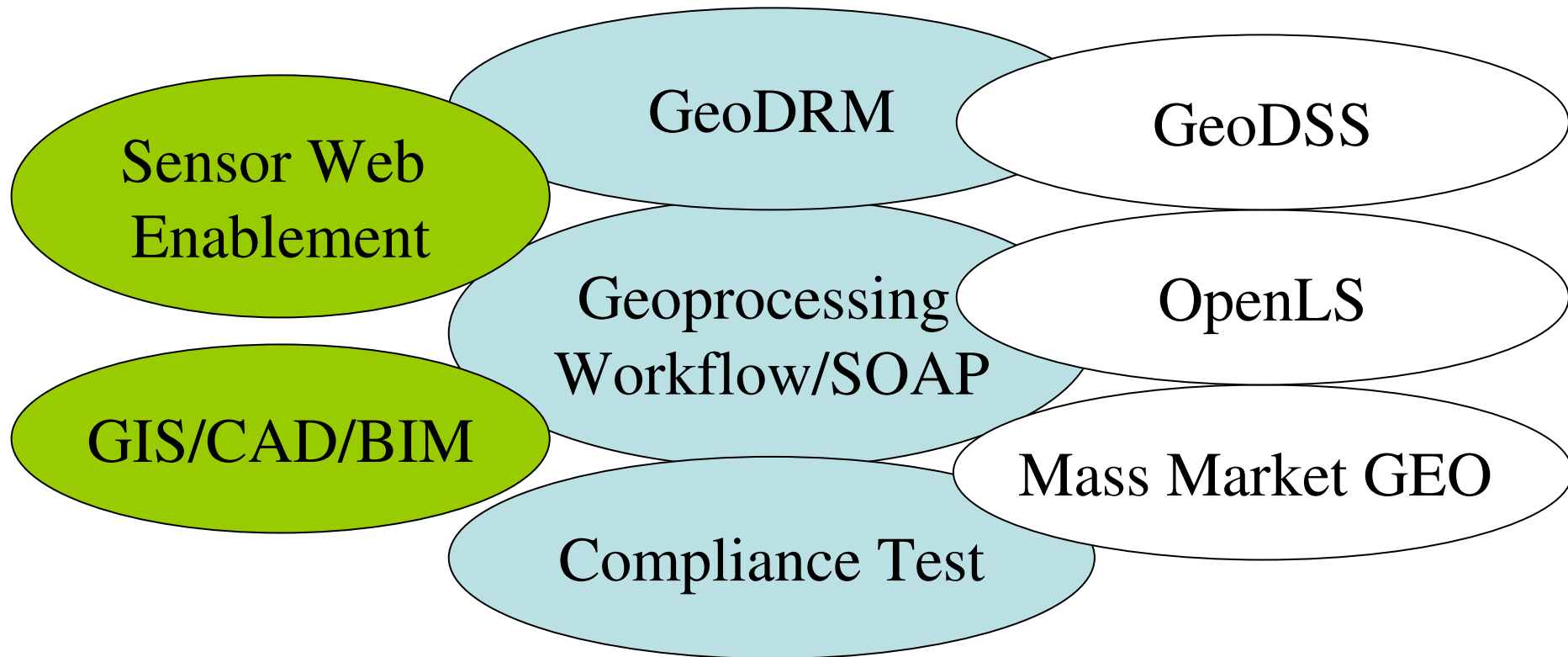
Comments are Encouraged!



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*Helping the World to Communicate
Geographically*

OWS-4 Threads

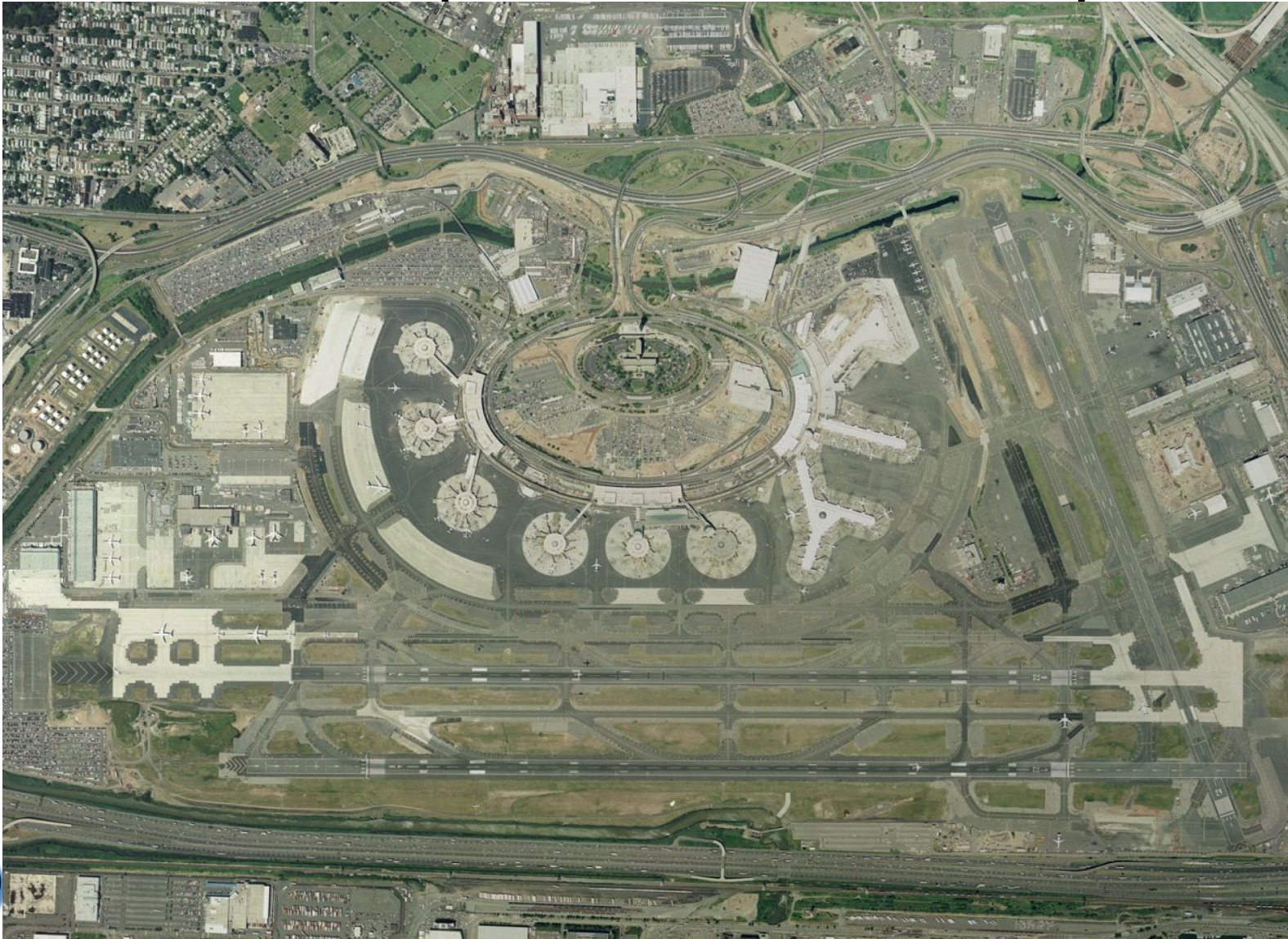


SOURCE

INFRASTRUCTURE

USERS

OWS-4 Demo Scenario: Field Hospital at Newark Airport



OWS-4

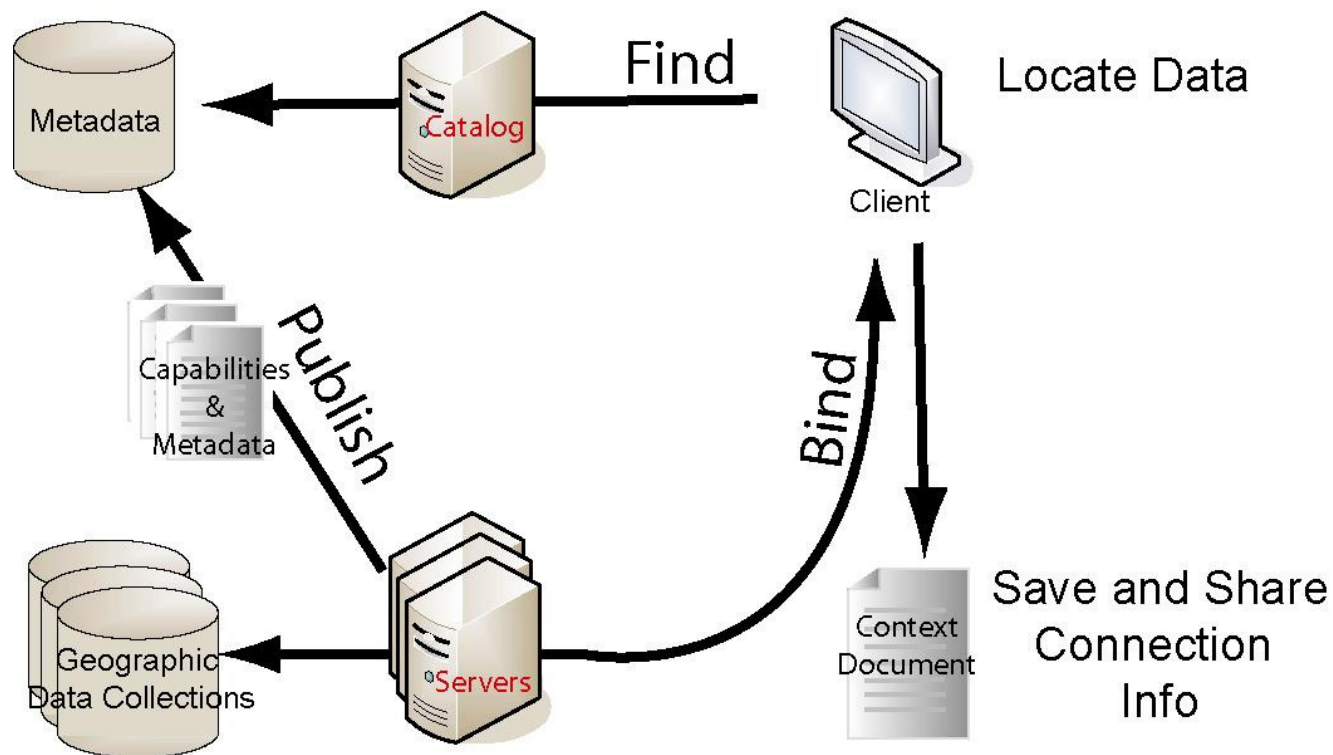


- Extend WFS to BIM (IFC)
- Snowflake
- Lat/lon
- Onuma
- HPI/3Dgeo landXplorer
- FZ Karlsruhe
- Aristoteles
- Bentley
- Autodesk

OGC Web Services Architecture

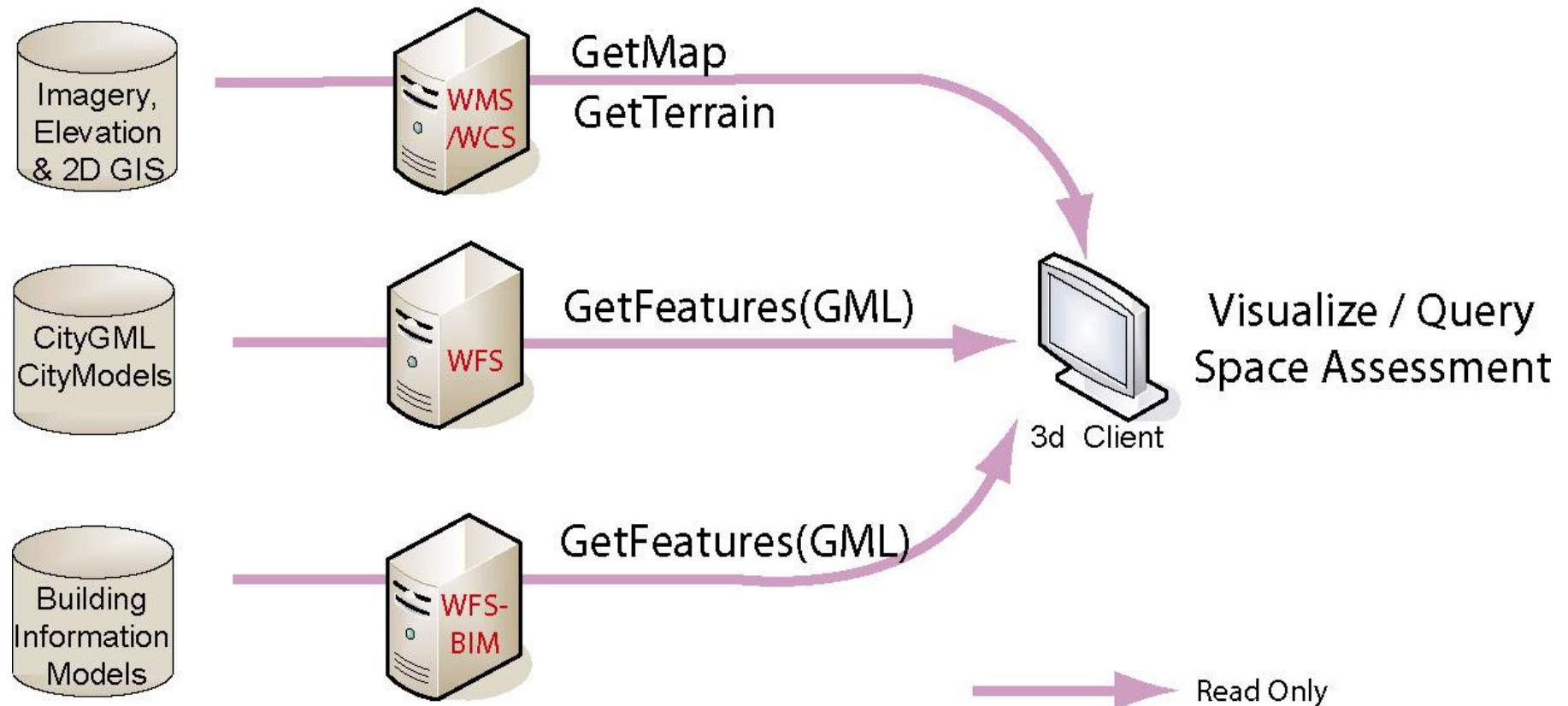


OGC Web Services Architecture: Publish Find Bind Pattern

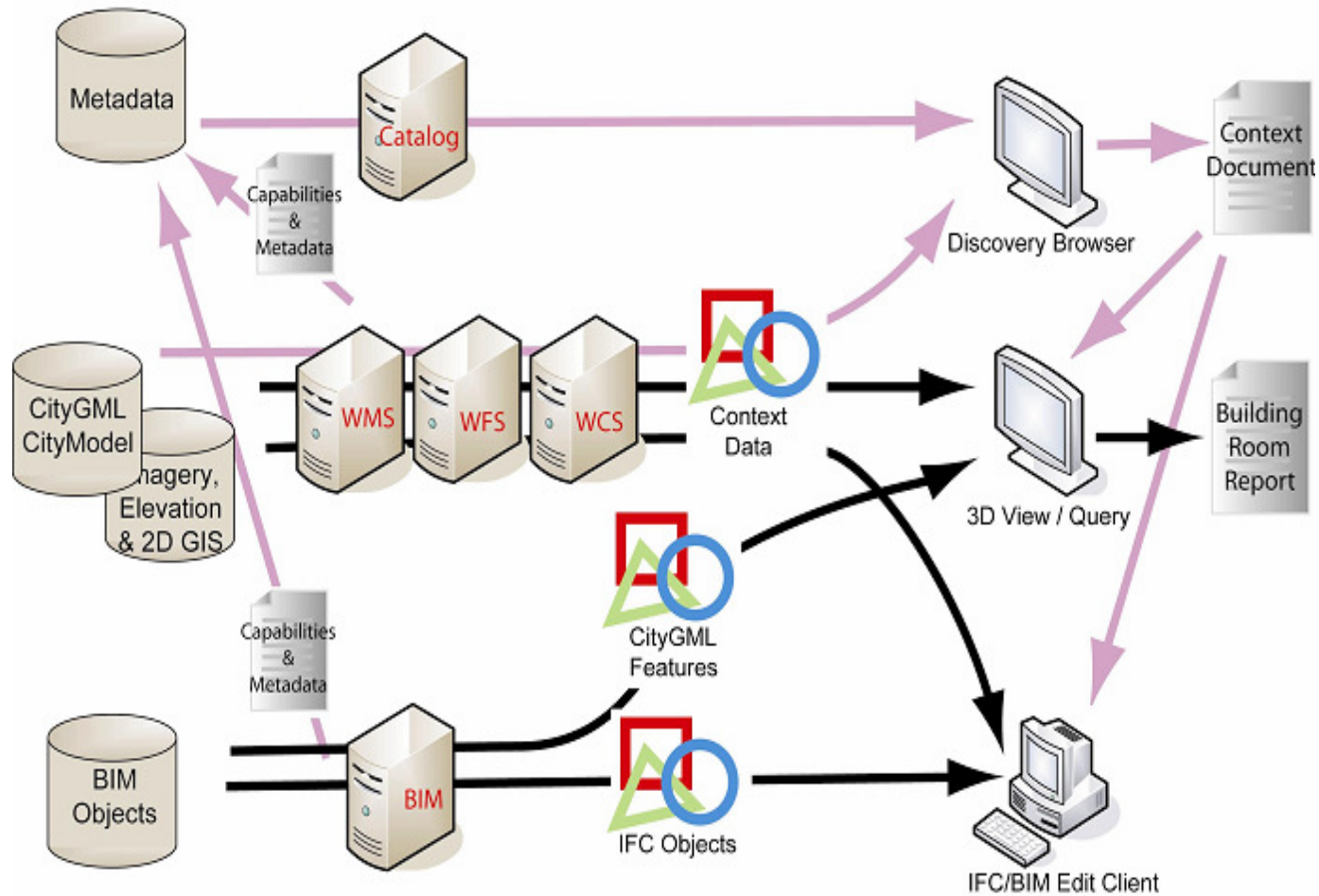




OWS-4 CAD-GIS-BIM Visualization / Analysis Workflow



Architecture Overview

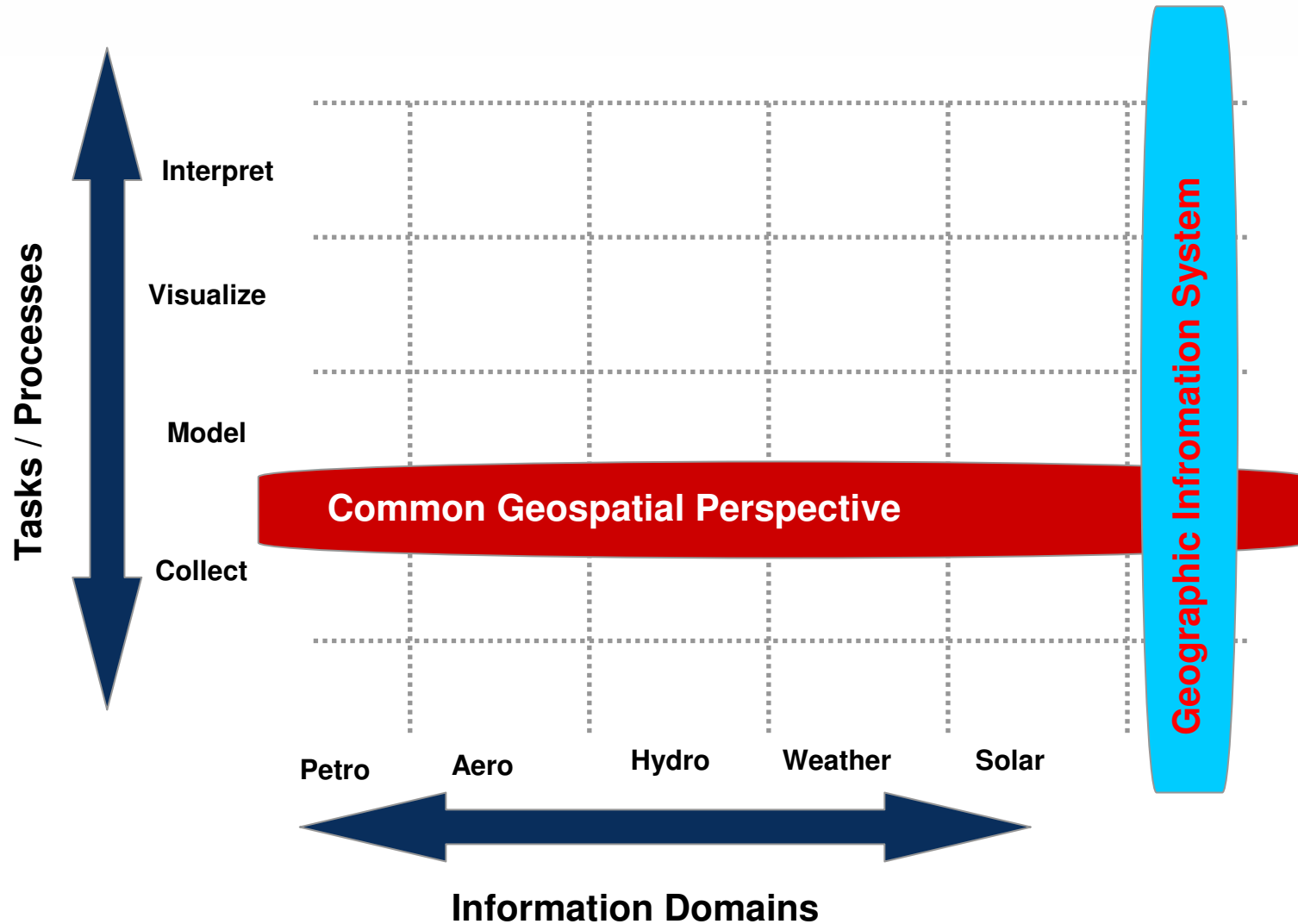


Next steps: Meeting #7



- San Diego, CA: 11-15 December 2006
 - Agenda to be announced
 - Discussion of CityGML paper
 - Discussion of OWS-4 results
 - Next generation conference in 2007 (US)
 - CityGML/IFC mapping?
- John/TC211: need to advertise CityGML more widely (particularly within the US).

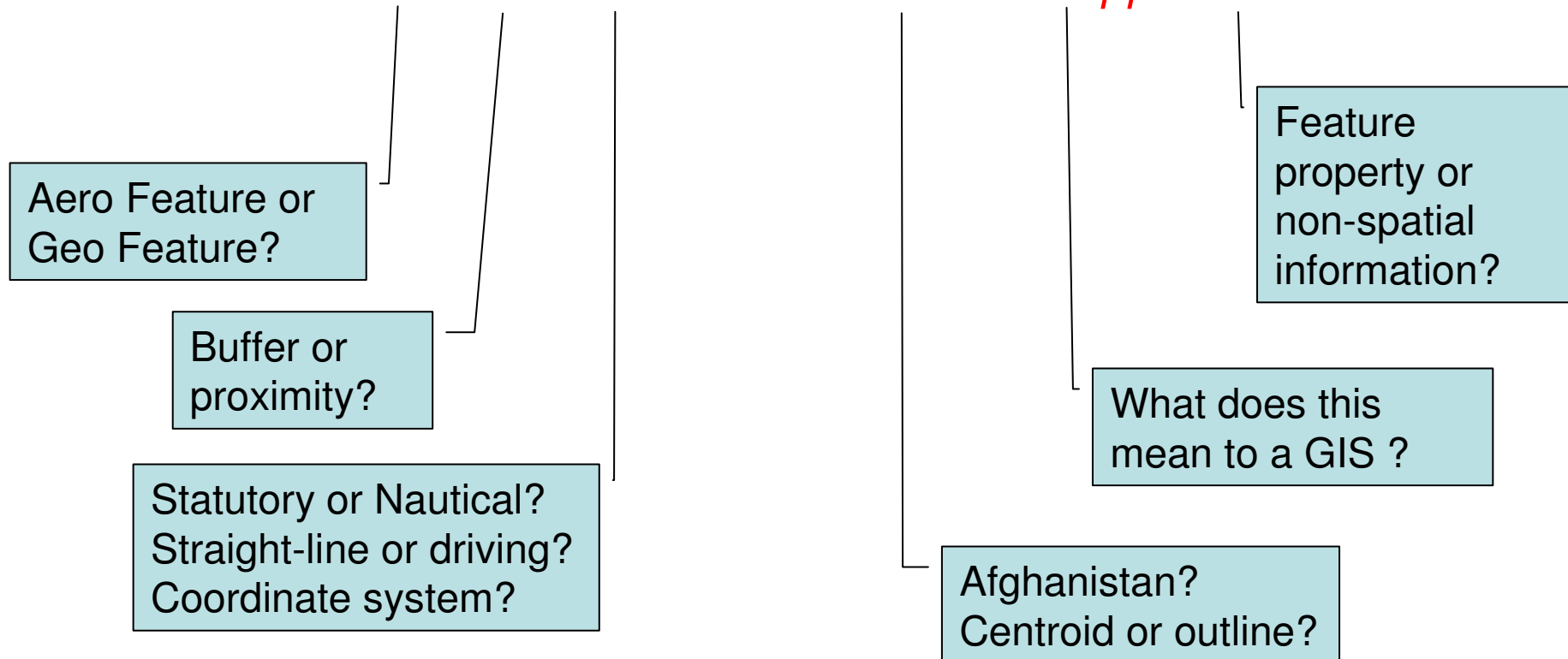
Information community and semantics (ICS)





“Typical” Geospatial Query (Intelligence / Logistics Domain)

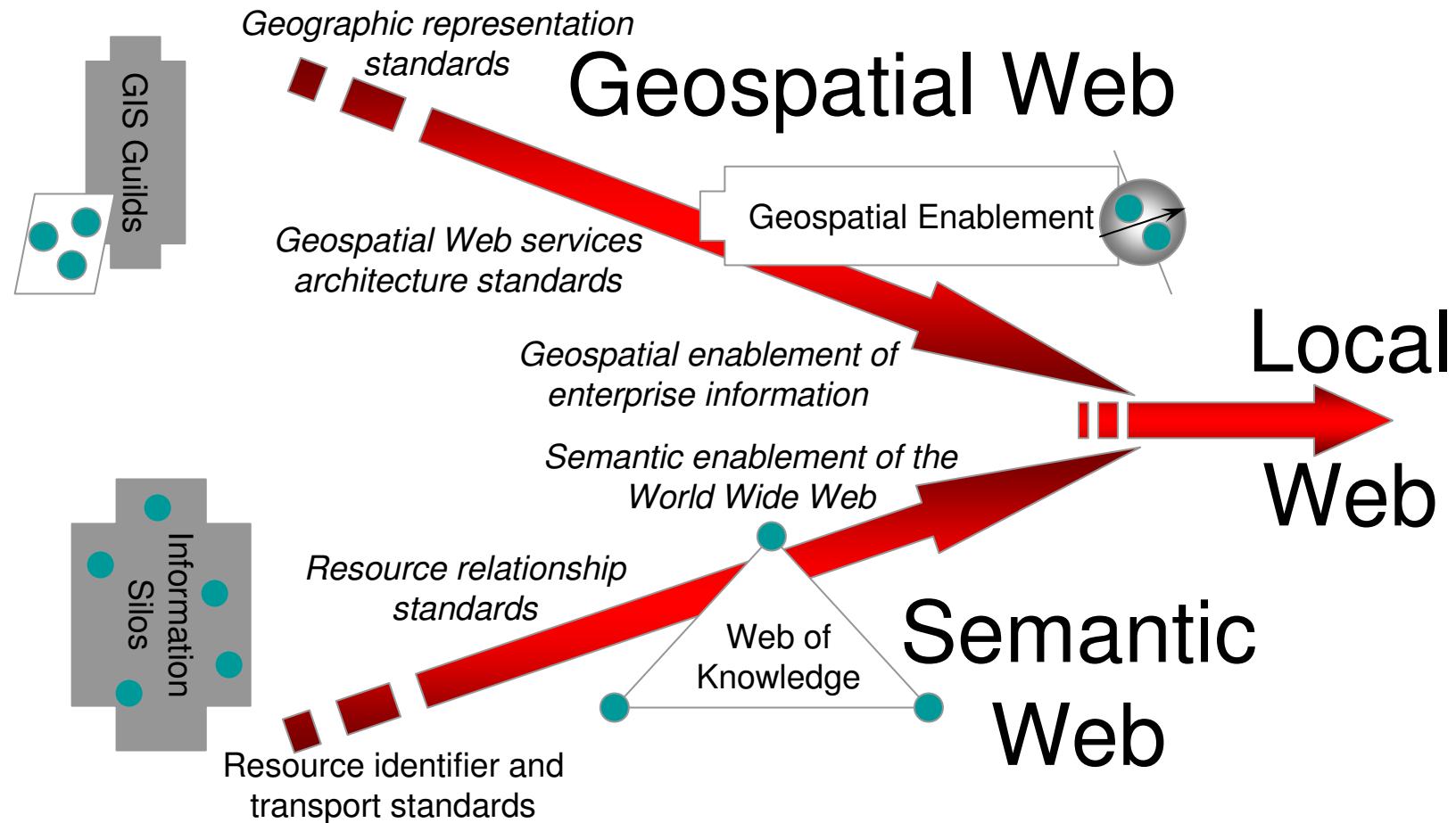
“Which airfields within 500 miles of Kandahar support C5A aircraft?”



Geospatial Semantic Convergence



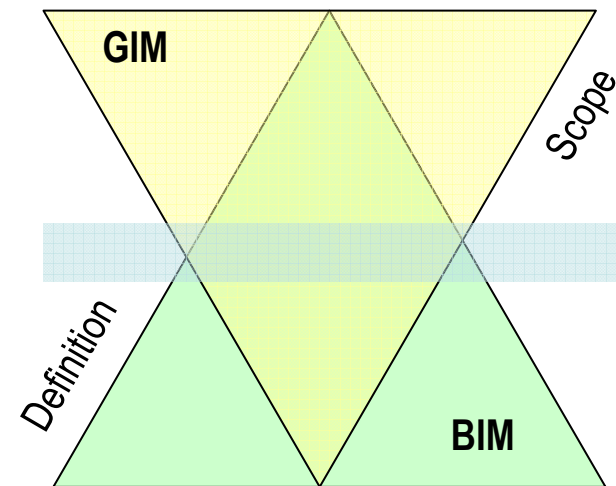
- When *geography-on-demand* joins *knowledge-with-location*, the result will be a richer and more capable Web of physical resources, a **Geospatial Semantic Web** or **Local Web**





Scoping BIM & GIM

- GIM wider scope than BIM
 - Geospatial information is spatially and temporally widespread but a limited definition detail may be OK
 - Equivalence of scale ... $< 1:100$
 - You don't need to see every blade of grass to know it's a field
- BIM larger definition than GIM
 - Building information is spatially and temporally bounded and requires high definition
 - Equivalence of scale ... $> 1:100$
 - Every nut, bolt and washer may be of interest
- Coordinate Space
 - BIM works in a non-distorted Cartesian space
 - GIM works in a “curved” coordinate space

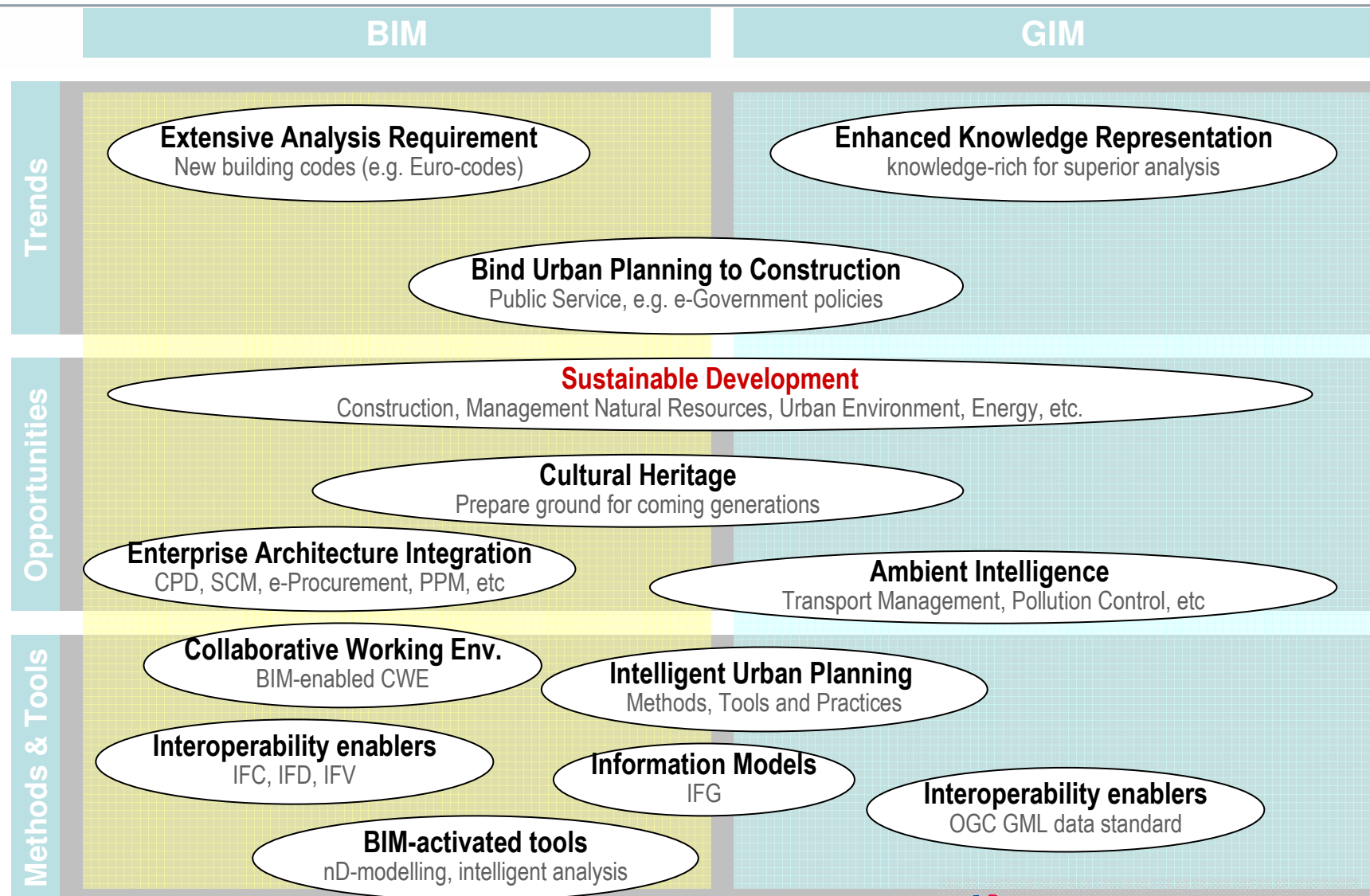




IAI/OGC GIS/CAD/BIM integration

- **BIM & GIM** belong to the domains of **reality Modelling conceptions**
- The way they produce an interpretation / representation of reality has common strongholds in conception, but ...the wide extended domain of their relationships is still partially explored, though at least promising for the future, ... if not a compulsory condition imposed by upcoming scenario!
- The **increasing of sustainability approach applications** to building design and construction produces compulsory reference to the “local” land (at the topographic or geographic scale), abandoning in perspective the scenario of low cost energy indifferently available everywhere and every time at low cost and sure supply
- This relationships may probably demonstrate vital in the development of the sustainable built environment’s modelling that necessity will impose (both for built and not-built environments)
- **Principle: We should consider both BIM and GIM important domain of knowledge resources, each of them modelling an overlapping domain component of the whole environment**

BIM+GIM Trends, Opportunities, Methods & Tools



BIM+GIS Current State of Practice



- BIM (when used) not performing to the full extent
 - Lack of full integration with product libraries
 - Mainly for point-to-point information exchange
 - Poorly integrated in Enterprise POPS
- GIM in place but not totally there
 - GIS using proprietary technologies and standards
 - GIS models exist, but “model quality” is a big issues
- BIM-GIM Binding
 - Currently no standard practice of using BIM and GIM
 - Buildings exist in GIM models as blocks with bump mapped photos
 - Some interesting opportunities in googleEarth integration



Abschließende Gedanken

- Integrierte Informationen
- Informationsnetzwerk (GEO als ein Teil)
- Wie wir die Welt sehen?
 - Als kartographischen Datensatz
 - Als Daten, die in einem konzeptionellen Modell organisiert sind, welches die kartographische Repräsentation unterstützt, ***aber auch andere Einsatzmöglichkeiten***