



THINKlab

Digital Innovations for Supporting Sustainable Development

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THINKlab



Future Ce



Interdisciplinary Research, Digital Environments, Edgates, Faces

THINKlab : Technical Competent Centre



Collaborative Engineering



City Modeling & Simulation



Data analytics + Visual Analytics



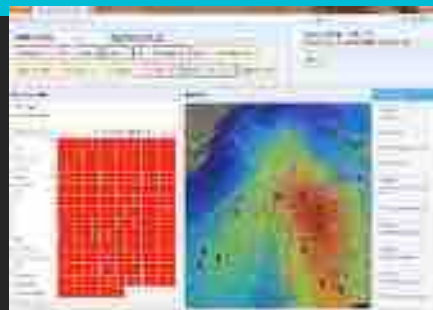
Sectors :

- ✓ Rail
- ✓ Aerospace
- ✓ Automotive
- ✓ Space
- ✓ Building Construction
- ✓ Local Government
- ✓ Environment Agency

Challenge 1 : Extracting Value out of Data to Support Sustainable Development



Connecting various development agenda can help stakeholders to build common vision



Identifying families connected through crimes



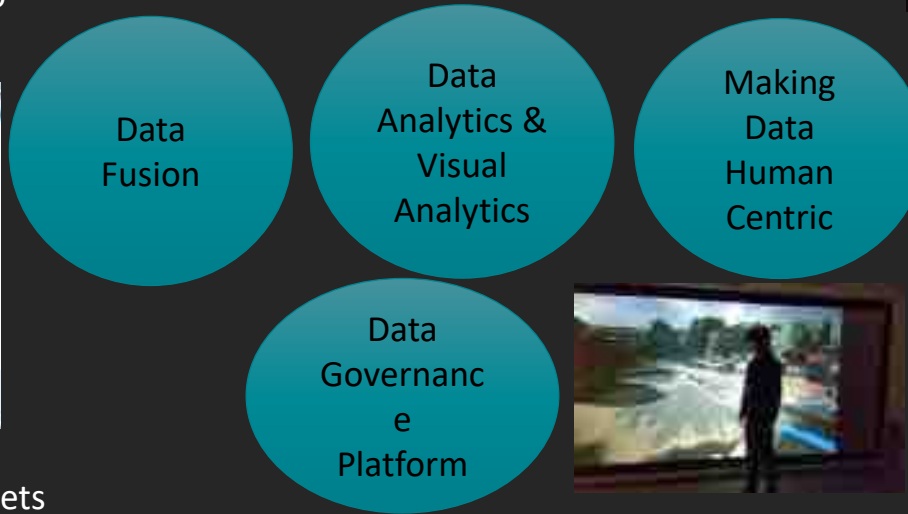
Identifying Potential "Children in Need"



Use of visually enhanced spaces for stakeholder engagement in sustainable design



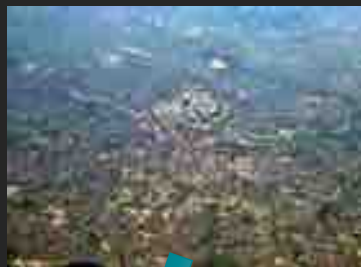
Local risk assessment by connecting multi-agency data sets



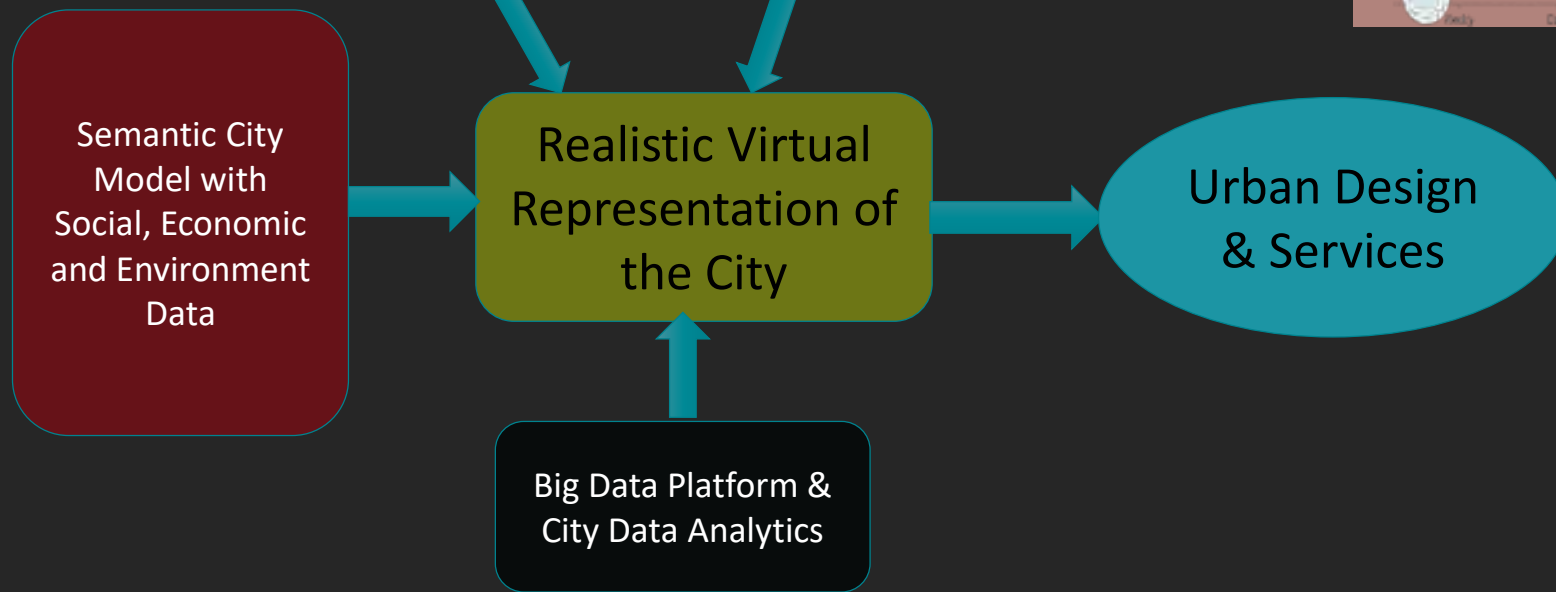
Emergency response training through "role Play"

Challenge 2 : Dynamic City Models for offering sustainable city services

Live operational data from IoT Sensors



Low orbit Nano Satellite real-time Data



Challenge 3 : City as a Complex System



*Everything is Connected to Everything Else !
- Leonardo da Vinci*

*Every Action has a Reaction
Newton's Law ; Law of Karma*

❖ Cities can be considered as complex systems

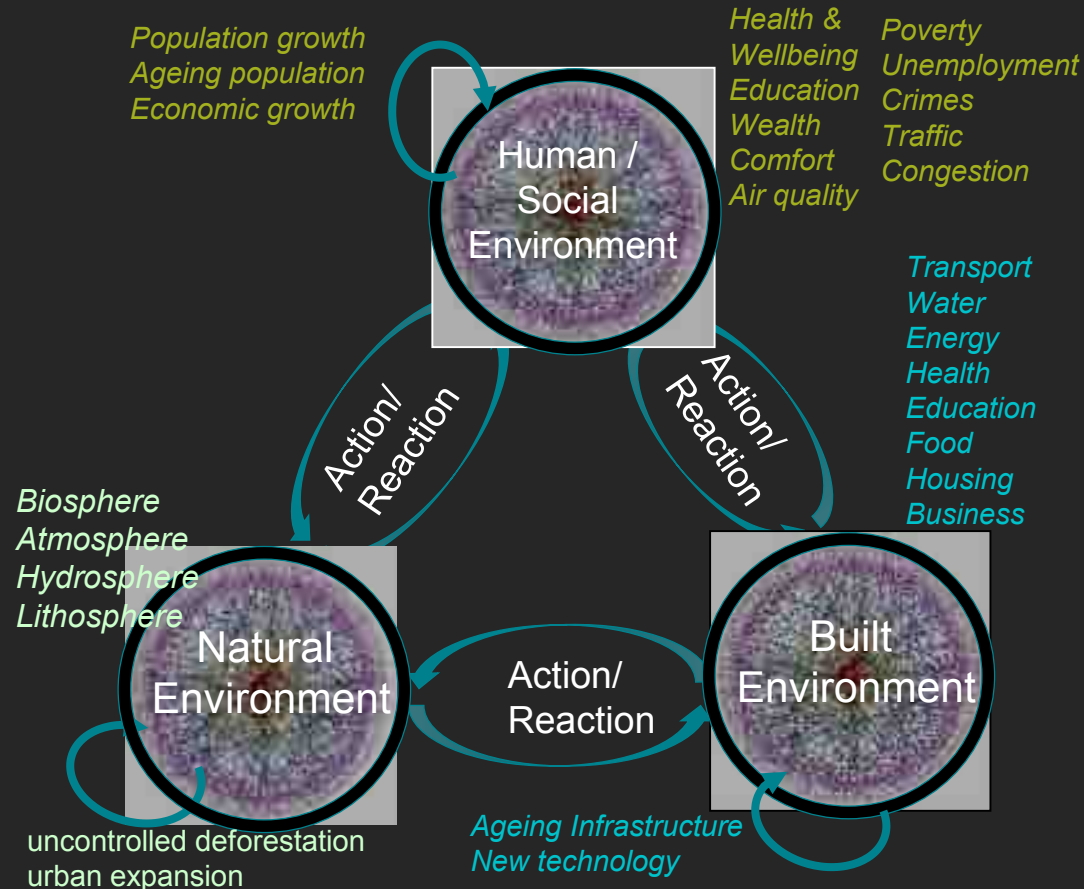
- ❖ They combine and integrate social, economic, physical and natural infrastructures to create vast networks of interdependencies and connections.

❖ Characteristics of a Complex System

- ❖ Complex systems may be nested
- ❖ Relationships contain feedback loops
- ❖ Complex systems may have memory
- ❖ May produce emergent behaviour
- ❖ Other

❖ Multiple modelling Framework

- ❖ Data mining ; System Dynamics; Multi-agent based simulation; Spatial Models; Population Dynamic Models





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Multi-agency Collaboration Platform for Building Resilient Communities



MOBILISE Technology Architecture

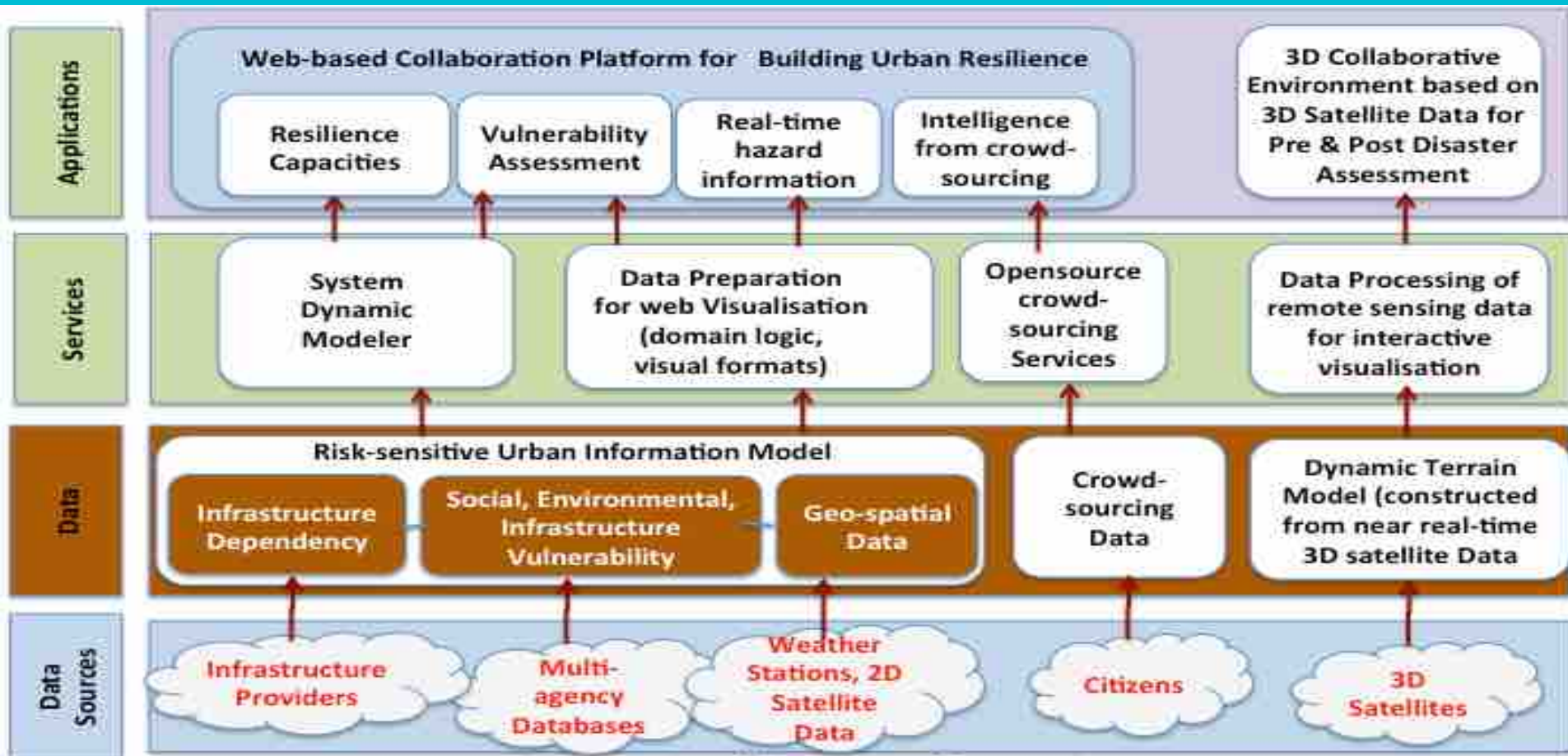


Figure 1 : Overall System Architecture Concept

Thank You !

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