Linked Data & Location:
-the moment of opportunity

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UK Location Programme, Digital National Framework & INSPIRE

The Opportunity: alignment of initiatives

Several developments are all moving in the **same direction**.

We have a **unique opportunity in time** to start to solve data sharing challenges – at the:

- business,
- technical &
- operational levels

What problem are we seeking to solve?

- Lack of technical interoperability
- Lack of business interoperability
- Duplication of datasets
- Lack of awareness (of existing data)
- Under utilised existing information assets
- Lack of progress over the last 10-15 years

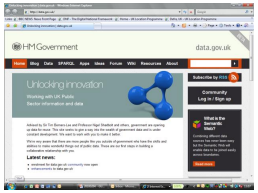
- **Silos of disconnected data**

Alignment of ideas and best practice

Digital National Framework – GB initiative

INSPIRE Directive – EU legislation

UK Location Programme – UK LS & INSPIRE



Linked Data & data.gov.uk – for all data

DNF (Digital National Framework)

1 October 2010

Joined up geography for joined up government > dnf.org.uk

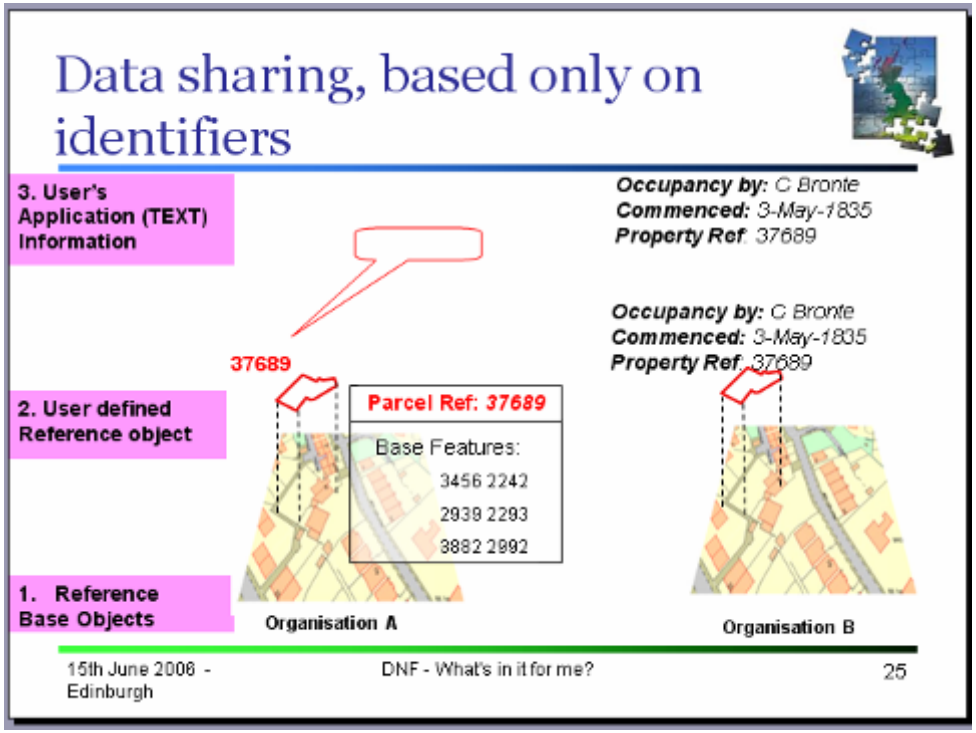
• DNF emerged in 1999 as a way of reusing and connecting data > TOIDs > OS MasterMap > extended widely

• DNF as concept got lost soon after 1999 but applications started to emerge

• DNF Expert Group formed in 2004 to connect like minds and promote best practice

• Developed case studies & technical papers

Case studies



Limitations to DNF progress from 2007 on

1. Insufficient tools to make it easy for users to build applications around data connectivity.

2. Intellectual Property – reuse – data sharing – limitations

3. Did not solve cross organisational connectivity (web)

INSPIRE

1 October 2010

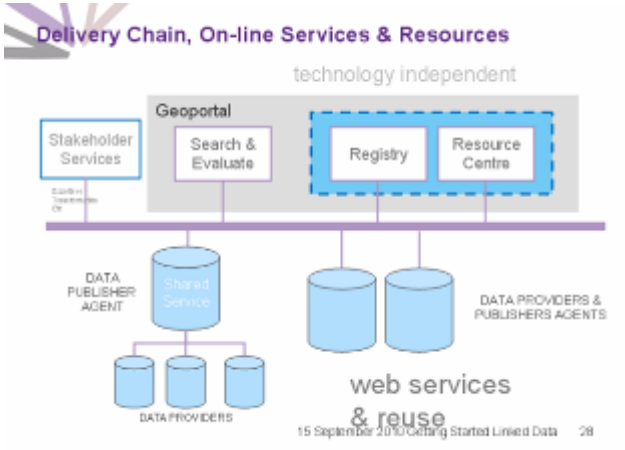
Legally mandated step change in location data

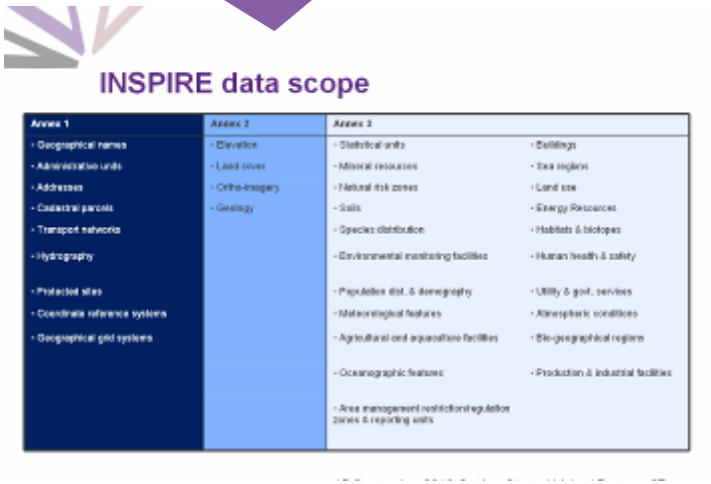
2007: Directive in place

2007: Metadata Regulation

2009: Network Service Reg

2010: Data Specification Reg





How will INSPIRE help linked data?

INSPIRE GCM	*Description*	Linked Data alignment
Spatial Objects	*Features that you can recognise like buildings and roads (i.e. not cartographic lines)*	We can associate other information with these objects.(or aggregations of them)
Unique identifiers for these objects	*Persistent and traceable*	Required to explicitly link data
Classification of the objects	*Explicit type [codelist and enumerations will be mandatory]*	Easier to relate to things you understand
Object Referencing	*Link data things together (spatial and non-spatial)*	= Linked Data
All other aspects are also predefined	*Coord Systems, Network Services Registries etc*	Master data management – codelists & vocabs etc

Transport Network: features are linked

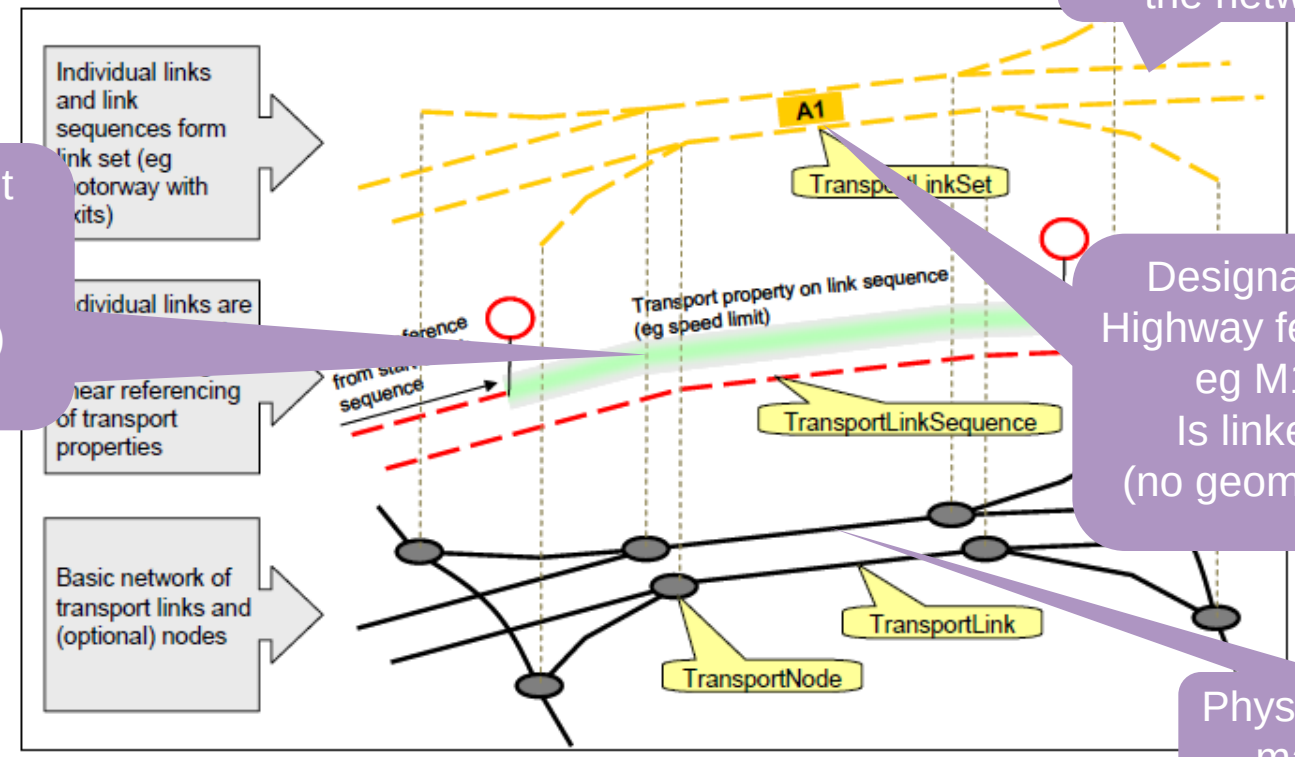


Figure 8 –Example of the use of Link, Node, Link Sequence and Link Set

Traffic flow data - can be linked to the network

Speed limit feature (linear reference) Is linked

Designated Highway feature eg M1 Is linked (no geometry)

Physical location maintained

UK Location Programme

1 October 2010

UK Location Programme

- Implementing UK Location Strategy and INSPIRE
- Location Council
- Interoperability Board & working groups
- Aware of other EU initiatives eg GMES and SEIS
  - though its not always clear how these fit

March 2010 agreed data.gov.uk is the common platform

Local data

Education data

Statistical data

Location data

Health data

Transport data

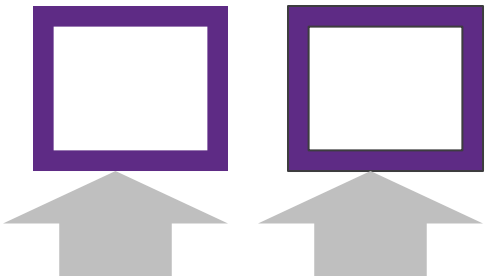
Statute data

Environment data

data.gov.uk

Discover, evaluate, access, link to, reuse online

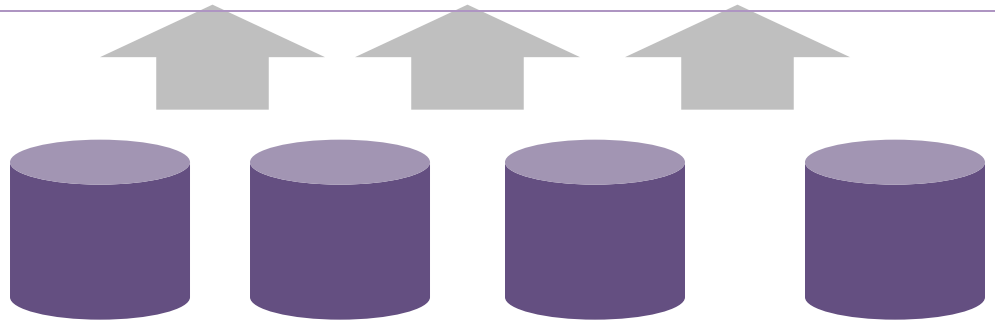
Information Access: common requirements



APPLICATION
Third party web services etc
- Integrated

data.gov.uk

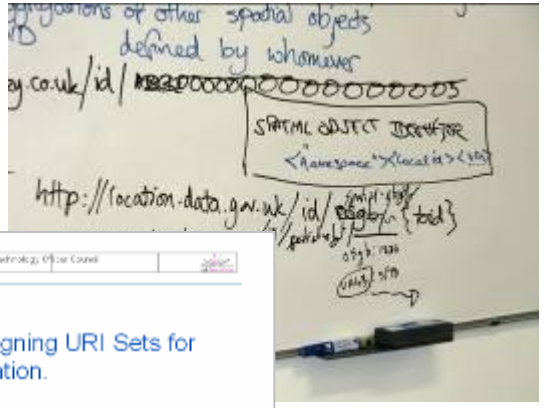
PORTAL (only for)
Coordination Access Portal
Discover, Evaluate, Download, Link & Reuse Online (redirects)



SOURCE DATA
Data Publishers (All domains)

Linked Data Working Group

- URI paper developed
- Reviewed by the INSPIRE team & LIIIB
- Now out for public comment until 8 October on the location.defra.gov.uk website

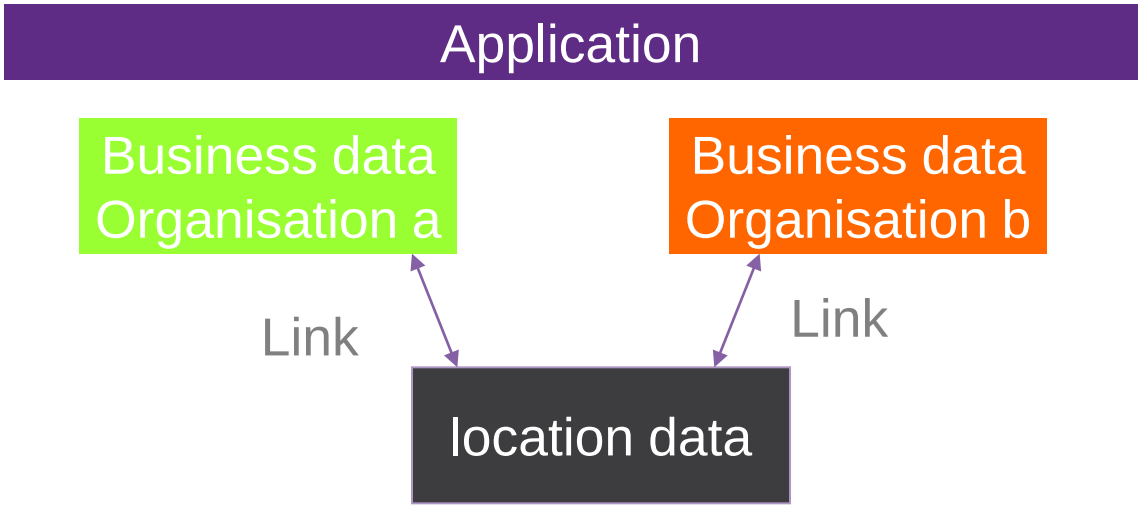


http://location.data.gov.uk/doc/{namespace}/{local-id}[/{version-id}][{rendition}]

Publishing and using Linked Data

Data Provider: publishes INSPIRE compliant data, using the URI model - their job is done!

Data User: build applications utilising linked data – demolish the silos & reuse what others have built



Linked Data

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Transform today's silos ….

spatial business

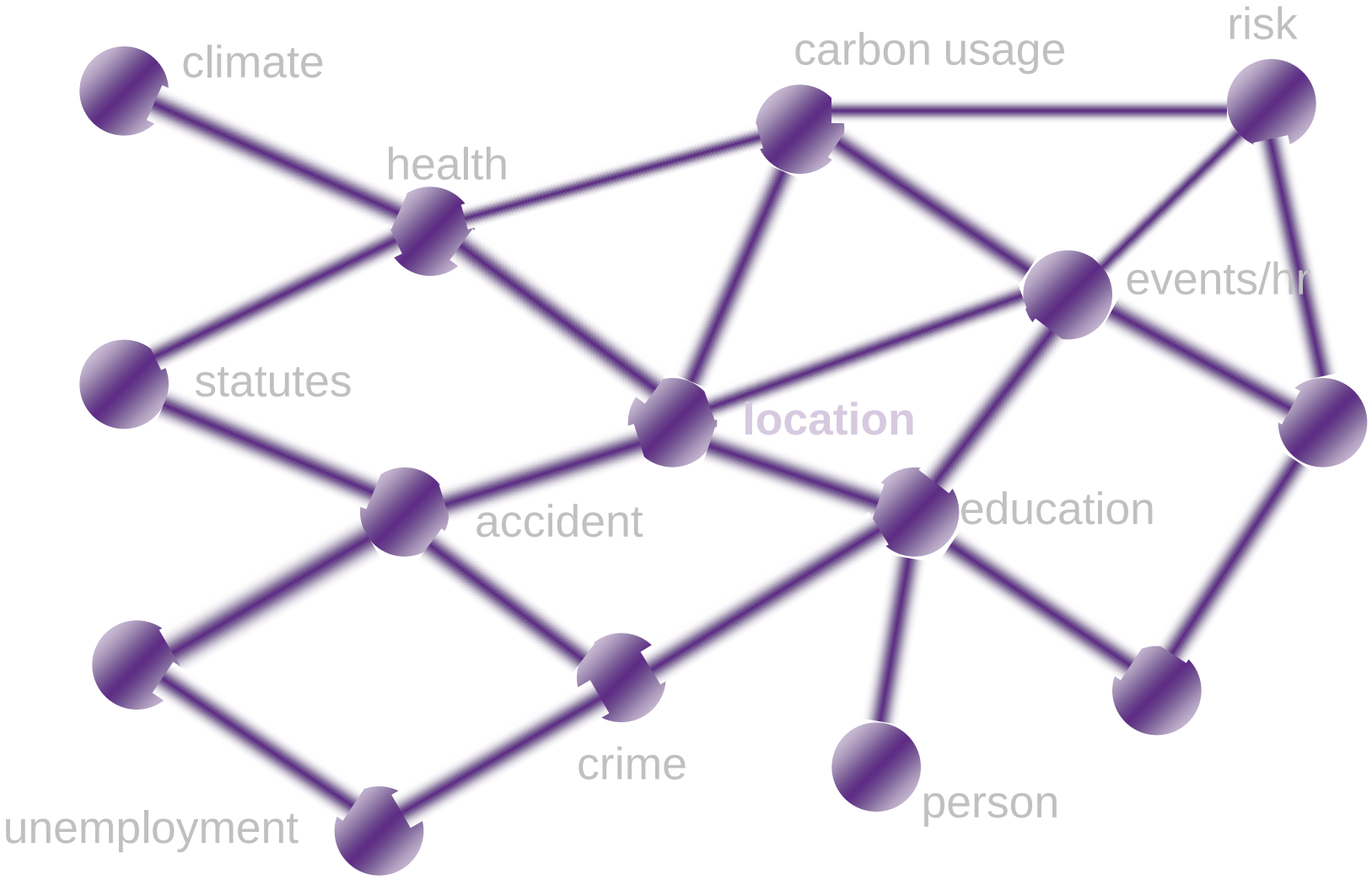
Organisation x

Organisation y

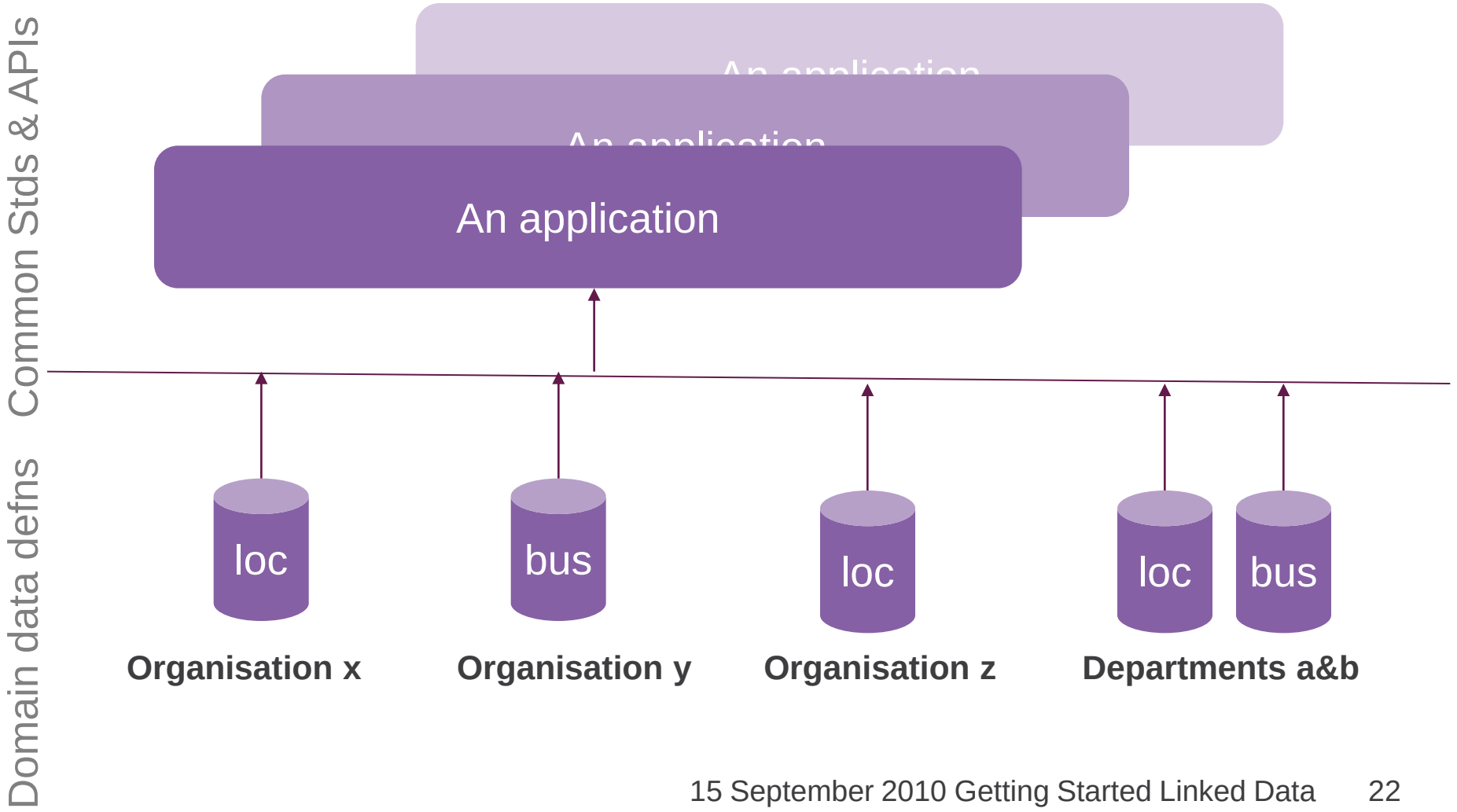
Organisation z

Departments a-g

…. Into a web of linked data



Online data resources



This workshop

Workshop Outcomes

- Share knowledge
- Promote understanding
- Build confidence - capability
- Inform
- Issues to be addressed (by the UK, EU or other)

Maximise your participation

- If you are a LINKED DATA expert – help those who are new to linked data today.
- If you are new to Linked Data – try and consider it in the context of a vision of a future way of working,
- If you are a long time GI practitioner – please keep an open mind & look for ways to rethink what you currently do
- Most of all enjoy the day and maximise the benefit of your participation.


a unique opportunity
- to make a real difference

INSPIRE data scope

Annex 1	Annex 2	Annex 3	
• Geographical names	• Elevation	• Statistical units	• Buildings
• Administrative units	• Land cover	• Mineral resources	• Sea regions
• Addresses	• Ortho-imagery	• Natural risk zones	• Land use
• Cadastral parcels	• Geology	• Soils	• Energy Resources
• Transport networks		• Species distribution	• Habitats & biotopes
• Hydrography		• Environmental monitoring facilities	• Human health & safety
• Protected sites		• Population dist. & demography	• Utility & govt. services
• Coordinate reference systems		• Meteorological features	• Atmospheric conditions
• Geographical grid systems		• Agricultural and aquaculture facilities	• Bio-geographical regions
		• Oceanographic features	• Production & industrial facilities
		• Area management restriction/regulation zones & reporting units	

Delivery Chain, On-line Services & Resources