Challenges Implementing INSPIRE

coverage data

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INSPIRE conference – 29 September 2016 - Barcelona

Context

Initial workshop

- On 29-30 September 2015, in Barcelona

- Organised by:
  - INSPIRE KEN
    - Knowledge Exchange Network from EuroGeographics
  - INSPIRE Thematic cluster
    - INSPIRE Maintenance and Implementation Framework (MIF)
    - Cluster 3 (RS, GG, OI, EL)

- Objectives:
  - Share experience about implementation of coverage data and services
  - With focus on themes EL (Elevation) and OI (ortho-image)

Initial workshop

Time	Topic	Presenters
Day 1 morning	Training session about coverage data and services	Alex Dumitru (Jacobs University)
Day 1 afternoon	National experiences transforming EL and OI – ELF activities	NMCAs
Day 2 morning	WCS experiences	MIWP-7,ocean and meteo communities
Day 2 morning	Discussion on open issues	all

Following activities

- Webinar on January 2016
  - context: Peter Bauman (Jacobs University) to provide answers to remaining questions

- (continuously updated) list of open issues
  - Capture main conclusions
  - in a common understanding!

- All documents (presentations, videos, minutes) available on

 http://www.eurogeographics.org/content/inspire-ken-29-30-september-2015

Following activities

- INSPIRE conference
  - Today presentation
    - **Challenges Implementing INSPIRE coverage data**
    - Overview
    - For coverage "dummies" by coverage dummy!
  - Workshop on Friday 30/09
    - **Implementation and potential of INSPIRE coverage data and CRS**
    - 2 sessions (9h and 11 h)
    - By Jordi Escriu
    - For more detailed information and open discussion
    - With coverage experts!

Main general learnings

From workshop agenda

NMCAs had quite limited experience about coverage data and services

But other communities and experts may help

# From work on the list of open issues

Getting (common) understanding of coverage issues is an iterative process and requires lots of efforts

From training session

Web Coverage Services are (at least in theory) powerful tools to deliver and better harmonize the data expected by INSPIRE

Examples of WCS functionalities
- Extraction
- Format conversion
- CRS conversion
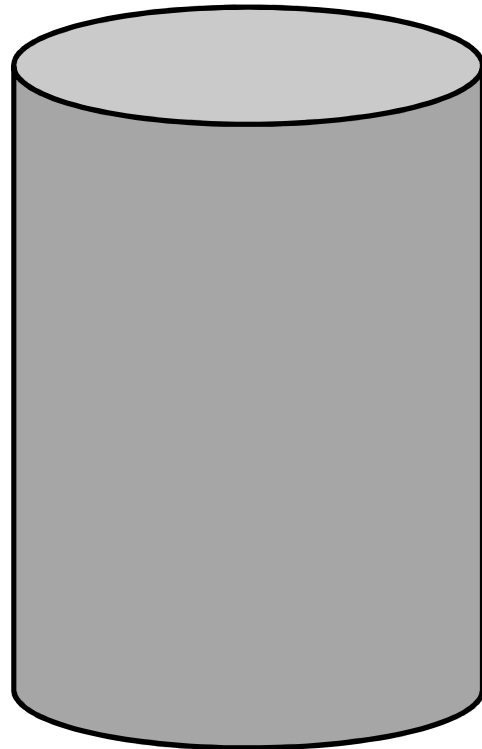- Resampling

trim | slice
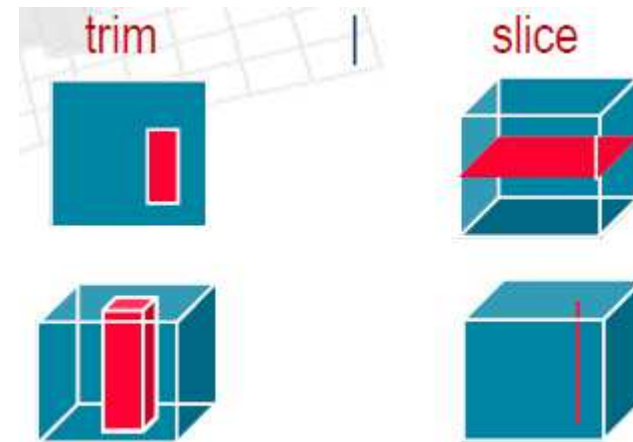
Extraction among space, time series, channels (e.g. RBG)

From transformation experience on OI and EL

A common issue: how to deal with huge volumes of coverage data. A typical issue for data producers is to decide on the approach to provide coverage data of a vast territory in a digestible way for the download services.
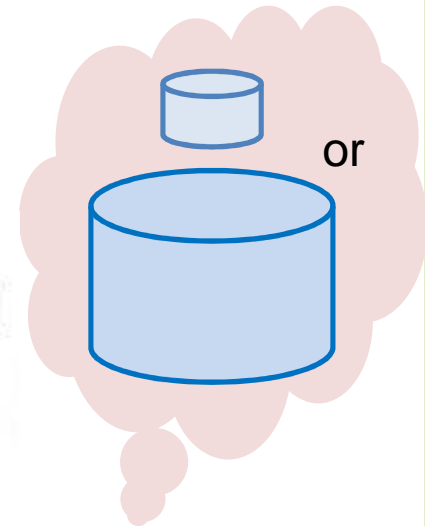
From transformation experience on OI and EL

or

(small) Internet
pipe

Server side:
big data

Client side:
user requests
(various
sizes)

From transformation experience on OI and EL
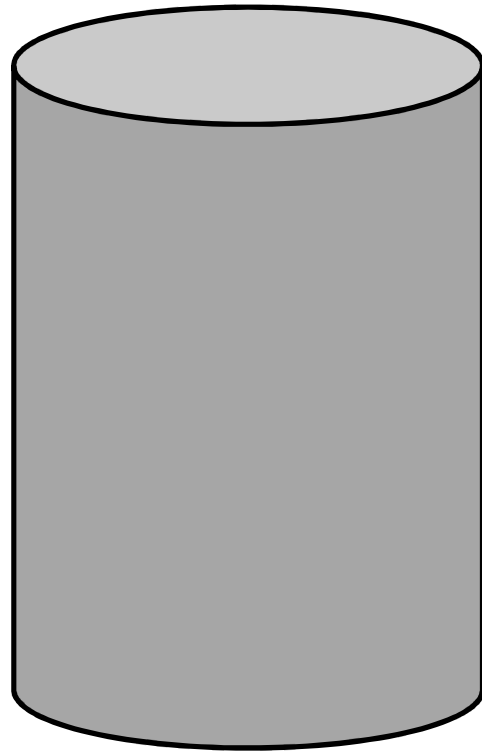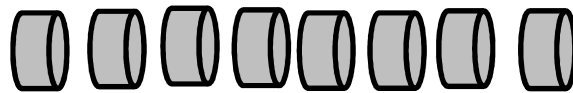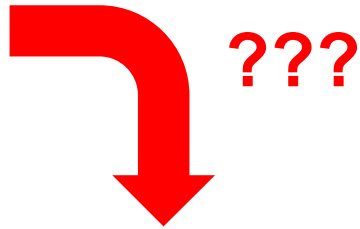
???

Server side:
big data

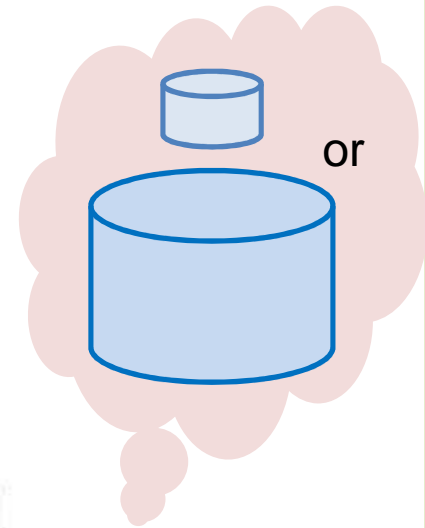(small) Internet
pipe

or

Client side:
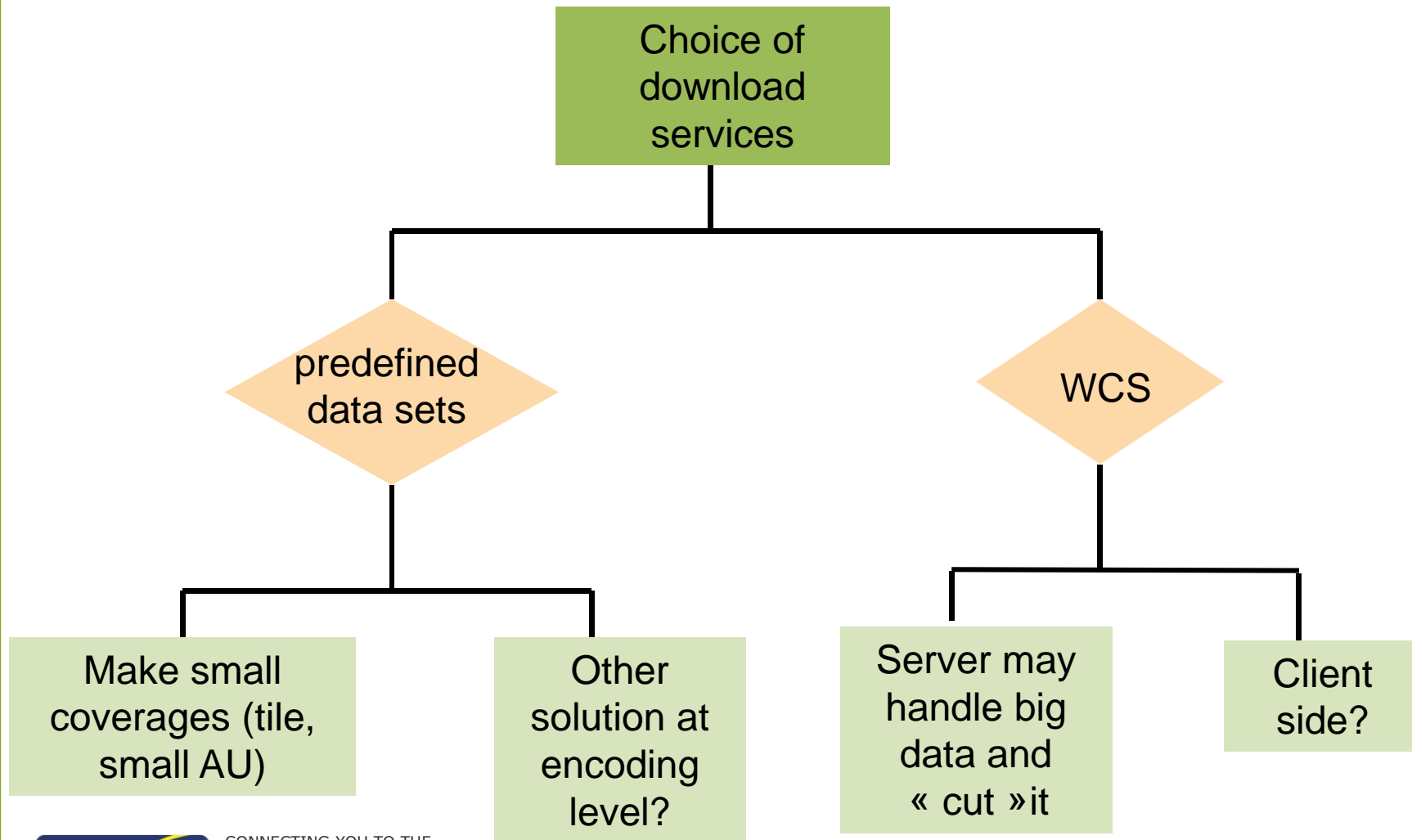user requests
(various
sizes)

From transformation experience on OI and EL

From WCS presentations

Get better understanding of MIWP-7 work:

- WCS standard proposes various functionalities, some mandatory, some optional

- Decide on the functionalities to be included in the IR about download network services by WCS

- Check if implementation solutions (tools) exist
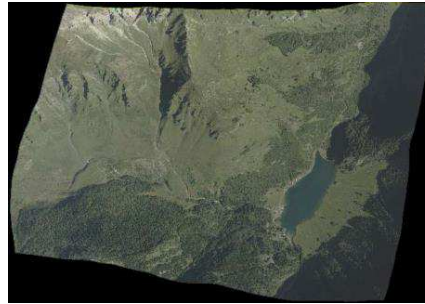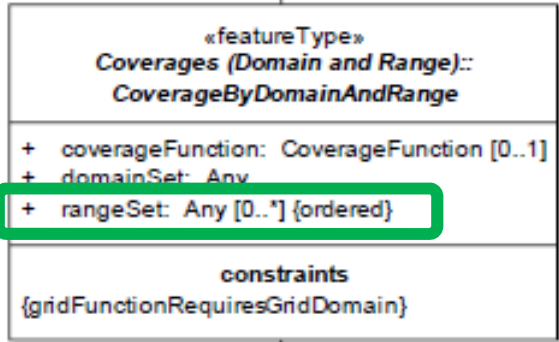
Personal learnings

Practical conclusion

What about data harmonisation?

«featureType»
Coverages (Domain and Range)::
CoverageByDomainAndRange

+ coverageFunction: CoverageFunction [0..1]
+ domainSet: Any
+ rangeSet: Any [0..*] {ordered}

constraints
{gridFunctionRequiresGridDomain}

```
        230 239 238 244 241 239 229 223 218
218 225 230 233 232 226 220 218 217
209 215 221 223 225 219 218 216 216
209 207 215 217 219 218 215 214 214
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```

Real data to be provided in
image format
(recommended option)

«featureType»
INSPIRECoverage

+ inspireId: Identifier
+ domainExtent: EX_Extent [1..*]
+ interpolationType: InterpolationMethodValue = nearestneighbor

«voidable»
+ footprint: GM_MultiSurface
+ name: CharacterString [0..1]
+ phenomenonTime: TM_Period [0..1]

«voidable, lifeCycleInfo»
+ beginLifespanVersion: TM_Position
+ endLifespanVersion: TM_Position [0..1]

Coverage touch =
« metadata » to be
provided in GMLCov

Practical conclusion

The 3 steps of INSPIRE coverage implementation

Provide the coverage touch (filling INSPIRE coverage model)
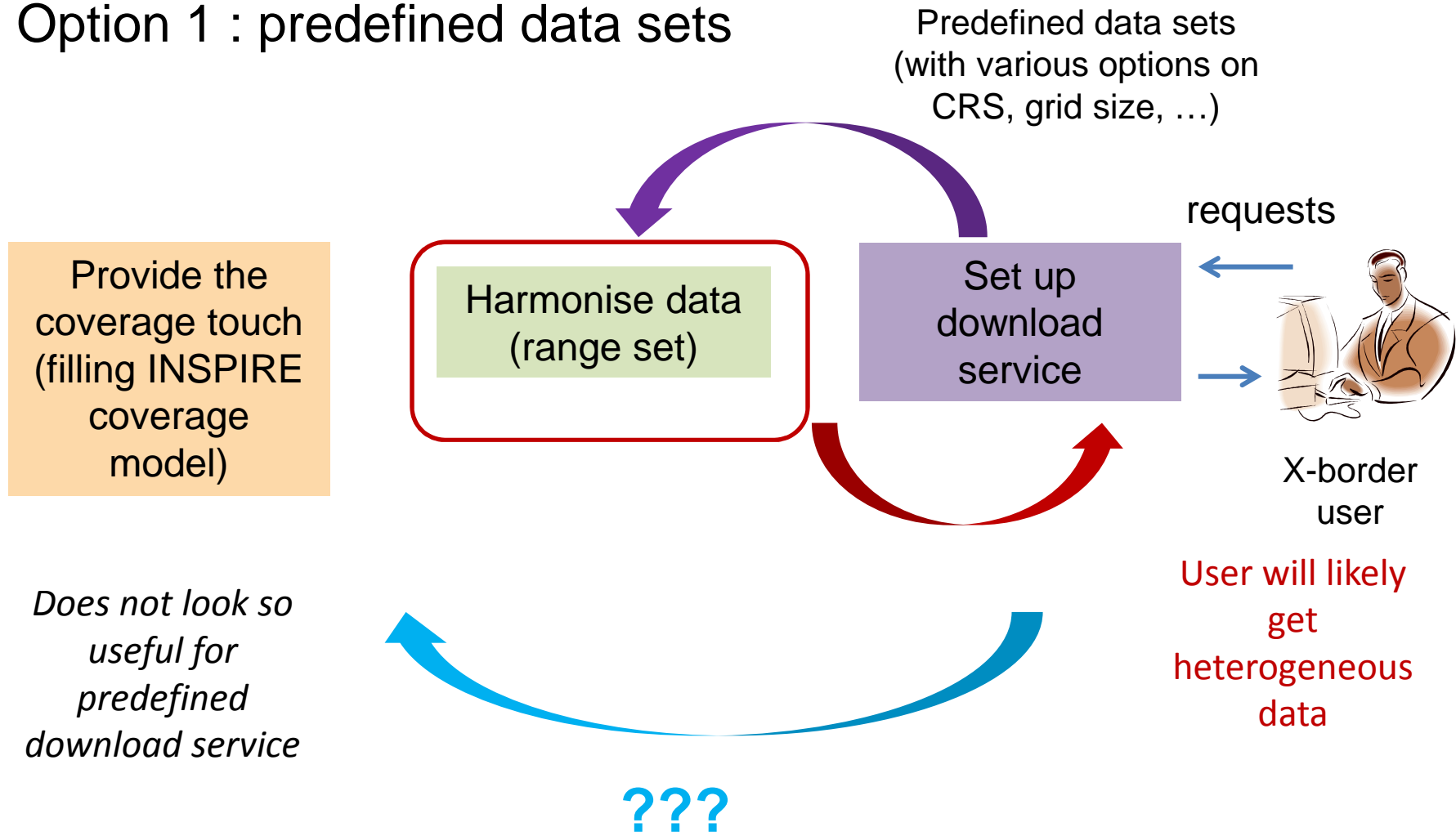
Harmonise data (range set)

Set up download service

INSPIRE coverage specifications are quite flexible: no constraints on grid size, several CRS allowed, ….

Practical conclusion

Option 1 : predefined data sets

Predefined data sets
(with various options on
CRS, grid size, …)

Provide the
coverage touch
(filling INSPIRE
coverage
model)

Harmonise data
(range set)

Set up
download
service

requests

X-border
user

*Does not look so
useful for
predefined
download service*

User will likely
get
heterogeneous
data

???

Practical conclusion

Option 1 : Web Coverage Service

WCS may harmonise data according to the user request

User request (CRS, extend, …)

Provide the coverage touch (filling INSPIRE coverage model)

Harmonise data (range set

Set up download service

User will get harmonised data

WCS will require the coverage 'metadata'
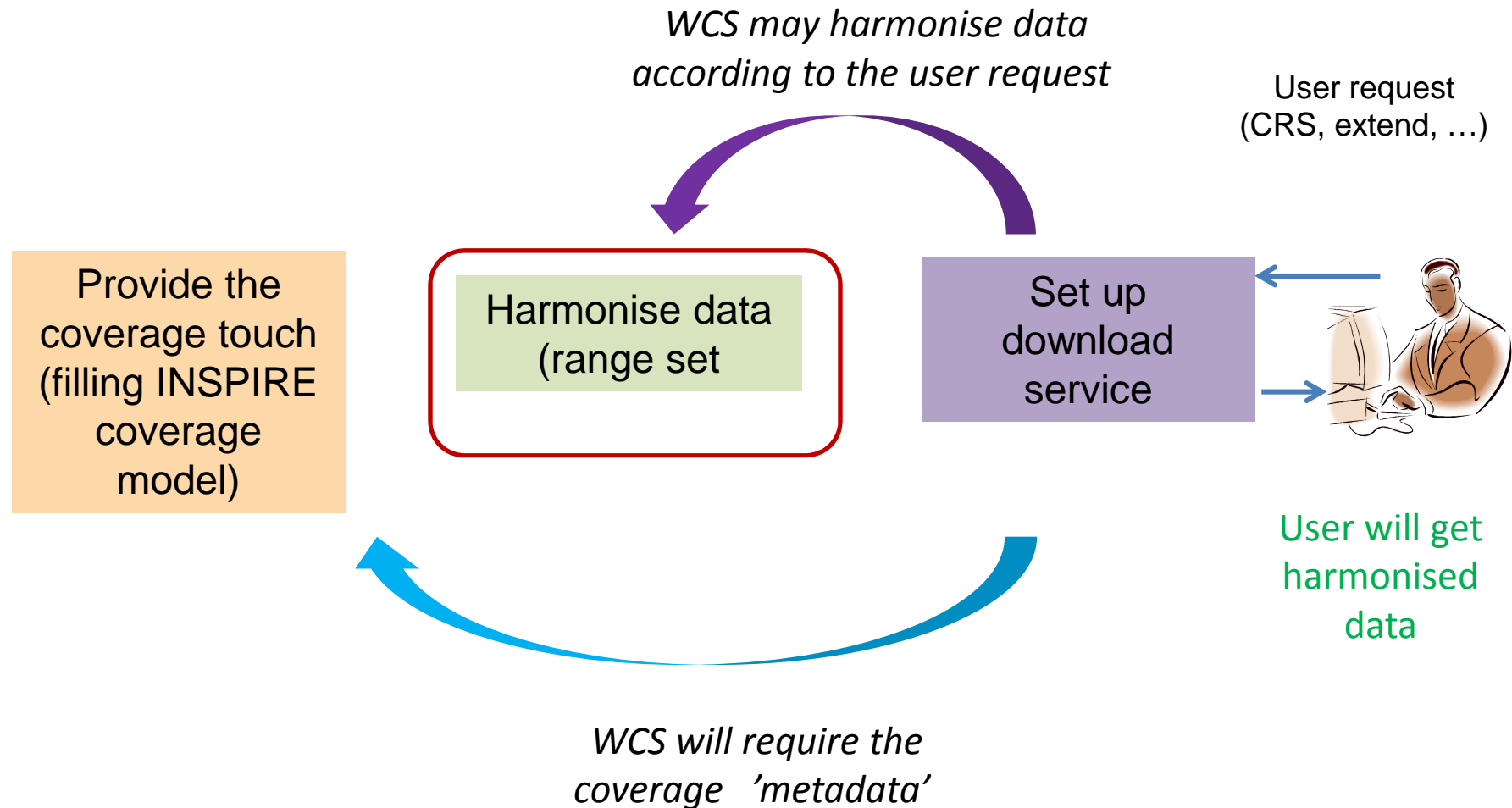
Practical conclusion

INSPIRE coverage data specifications bring real value to users only if

WCS is used for download service

=> We should choose the WCS option

Practical conclusion

Unfortunately, some legal uncertainty:

- Implementing Rule about WCS download services not yet ready

- Possible evolution from GMLCOV to CIS1.1

We should wait!

Dead-line for EL and OI is only in 2020.

What about future?

- These conclusions were proposed to IGN (and accepted) by end 2015

- But likely situation has evolved

  - Progress in MIWP-7?

  - End of waiting phase?

More detailed news expected from Friday 30/09/2016 workshop

INSPIRE EL

INSPIRE OI