

VAMDC

Implementation

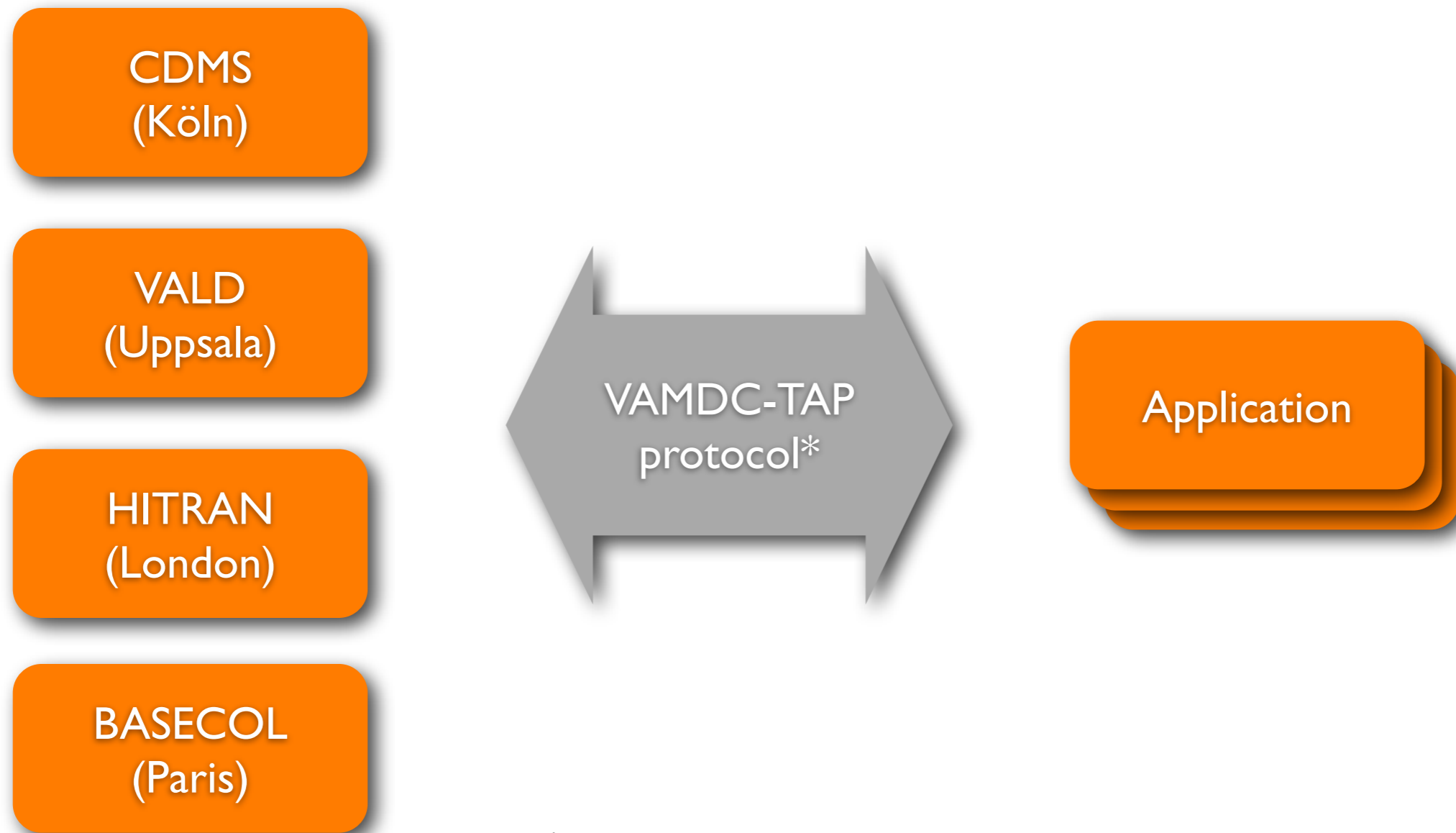
VAMDC workshop, ICAMDATA 2012
Guy Rixon

Technical policy

- No centralization
- Everything searchable on WWW
- Access from web browsers *and* applications
- Self-describing data

“No centralization”

“VAMDC nodes”



etc.

* <http://www.vamdc.org/documents/standards/dataAccessProtocol/index.html>

“Searchable on the WWW”

See: <http://www.vamdc.org/documents/standards/queryLanguage/index.html>

“Searchable on the WWW”

<http://some.server/some/data?QUERY=select ...>

Address of database

Query to DB

See: <http://www.vamdc.org/documents/standards/queryLanguage/index.html>

“Searchable on the WWW”

<http://some.server/some/data?QUERY=select ...>

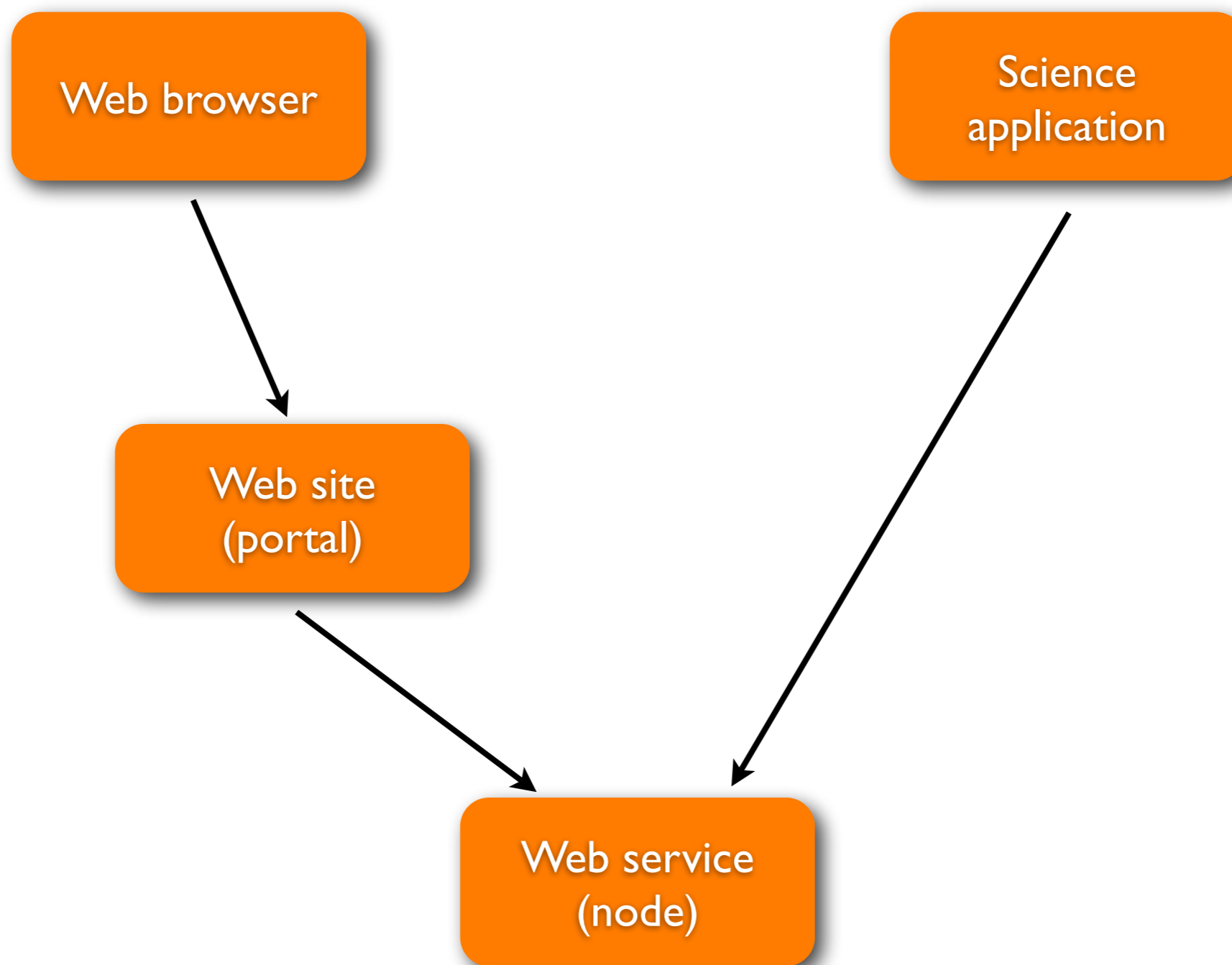
Address of database

Query to DB

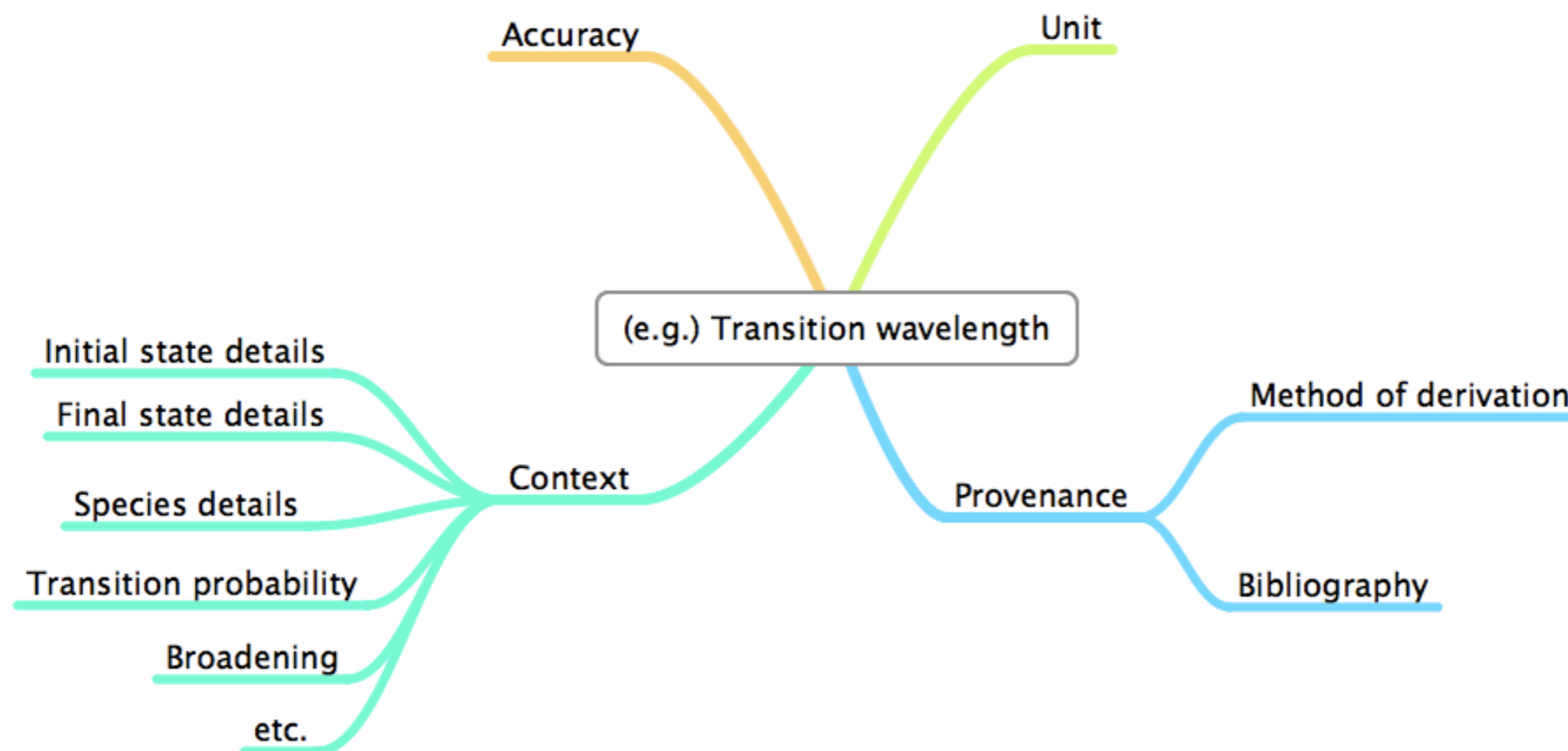
- Example queries:
 - `SELECT * WHERE RadTransWavelength > 4500 AND RadTransWavelength < 5500`
 - `SELECT Collisions WHERE ((target.InchiKey = 'UGFAIRIUMAVXCW-HQMMCQRPSA-N')) AND ((collider.AtomSymbol = 'He'))`
 - `SELECT Species`

See: <http://www.vamdc.org/documents/standards/queryLanguage/index.html>

“Browser *and* applications”



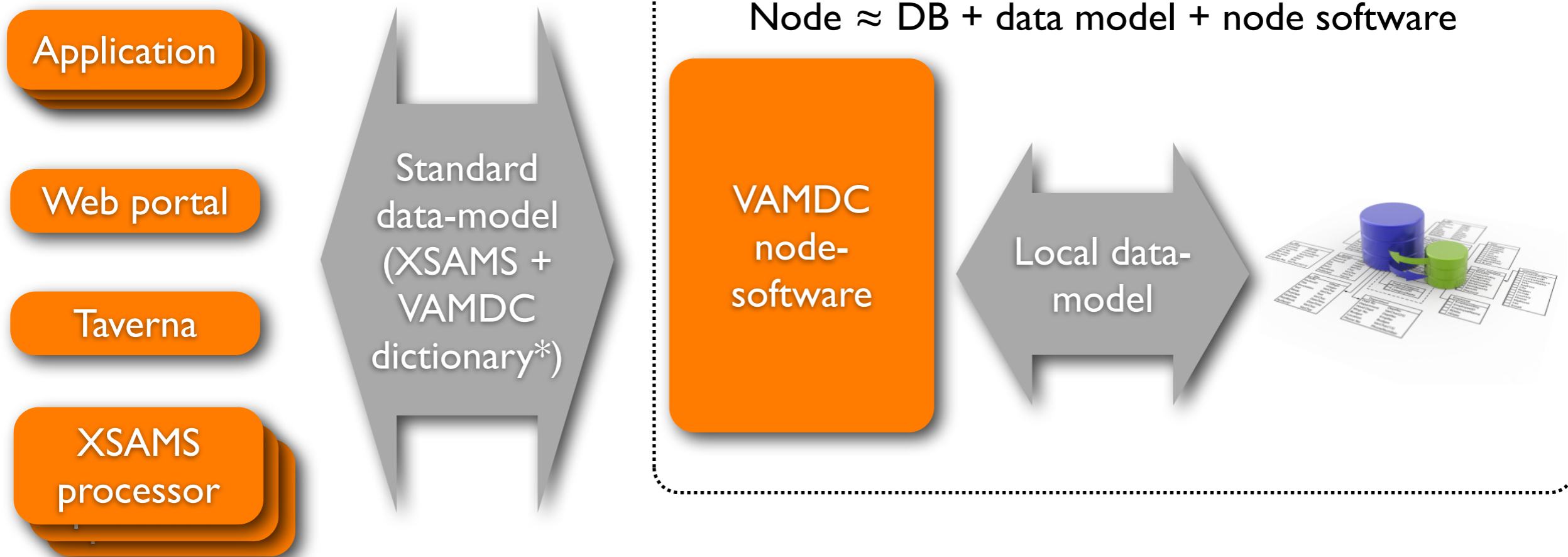
“Self describing data”



XML Schema for Atoms, Molecules and Solids (XSAMS)

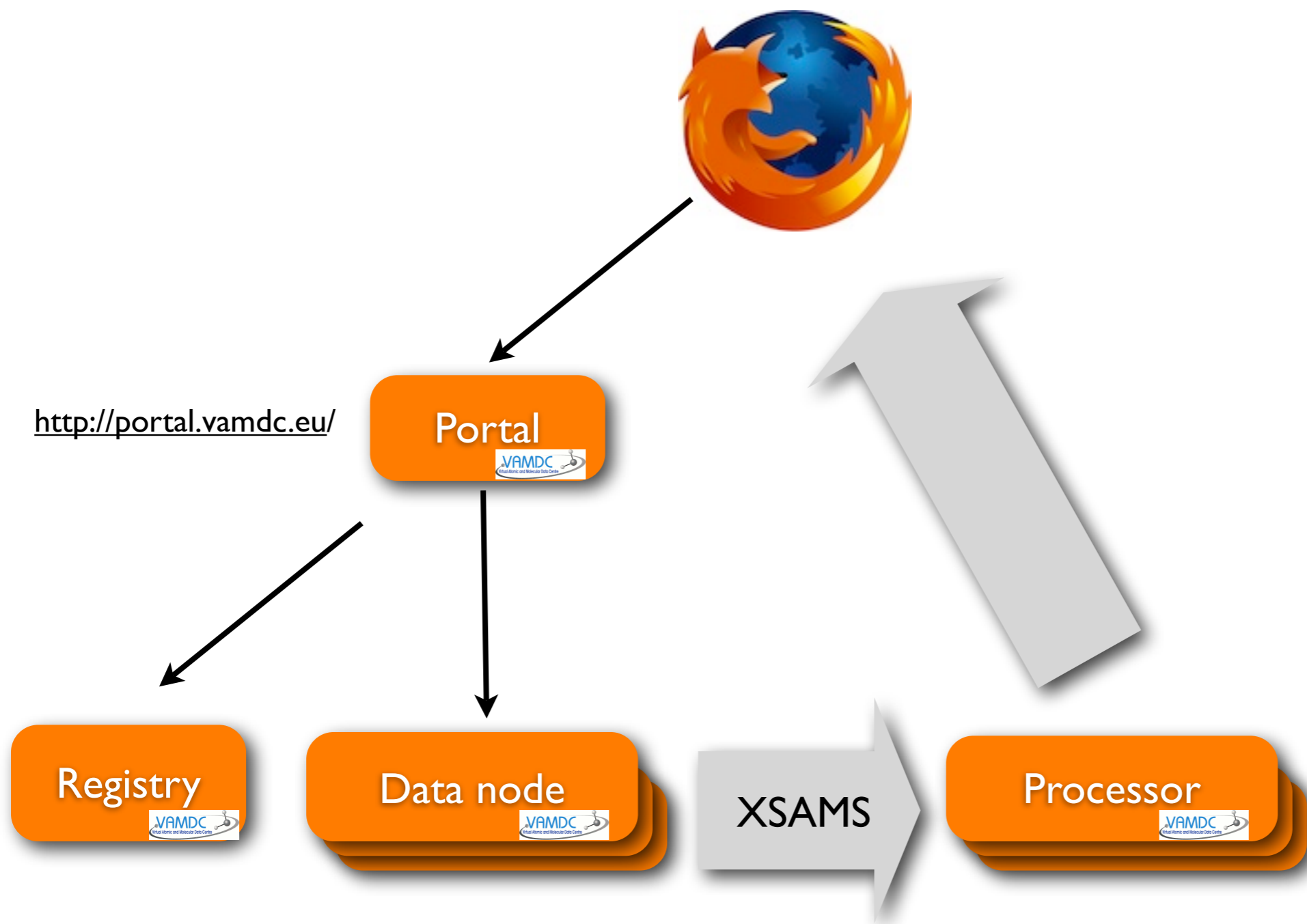
See <http://www.vamdc.org/documents/standards/dataModel/vamdcxsams/index.html>

Nodes translate data models

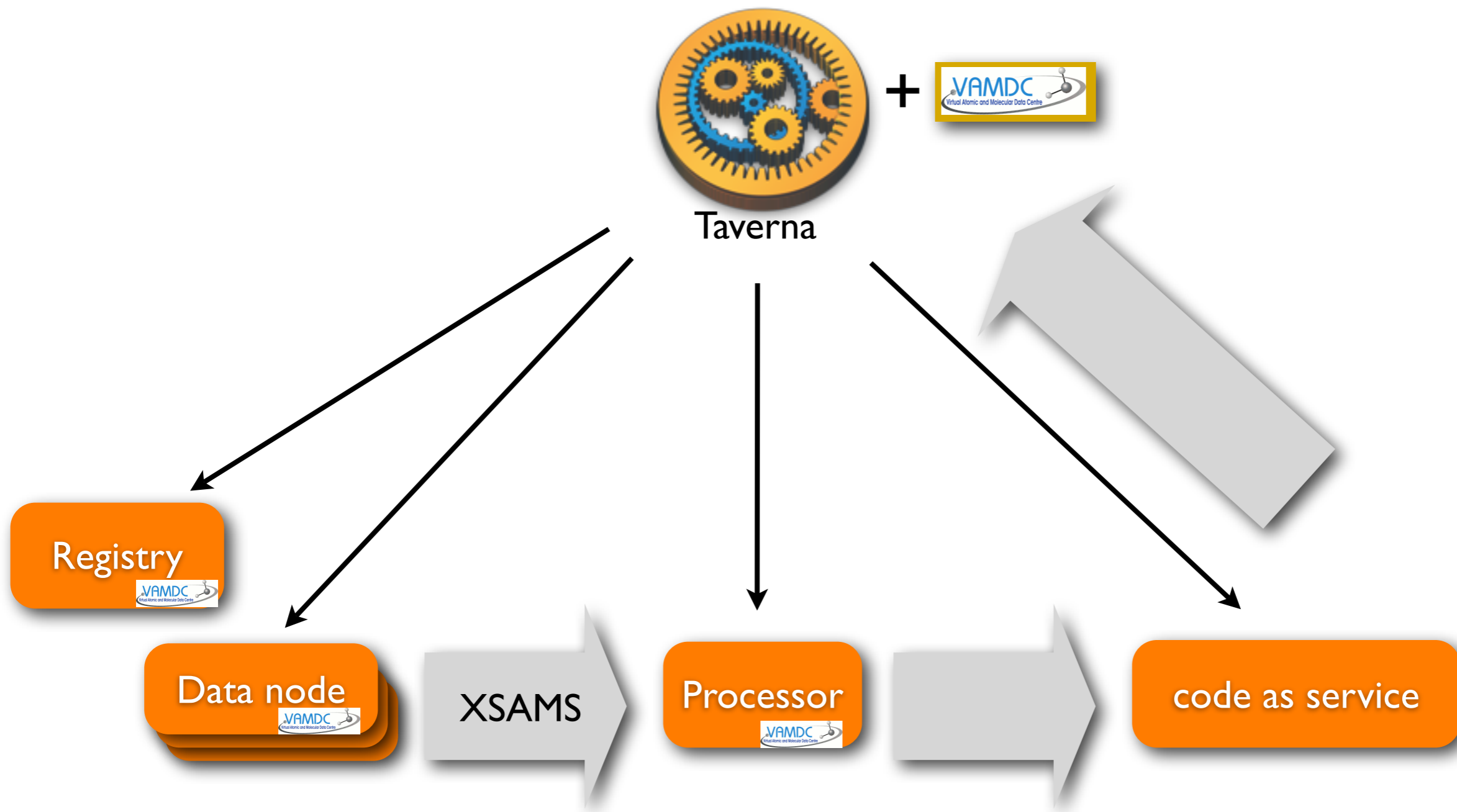


* See <http://dictionary.vamdc.org/>

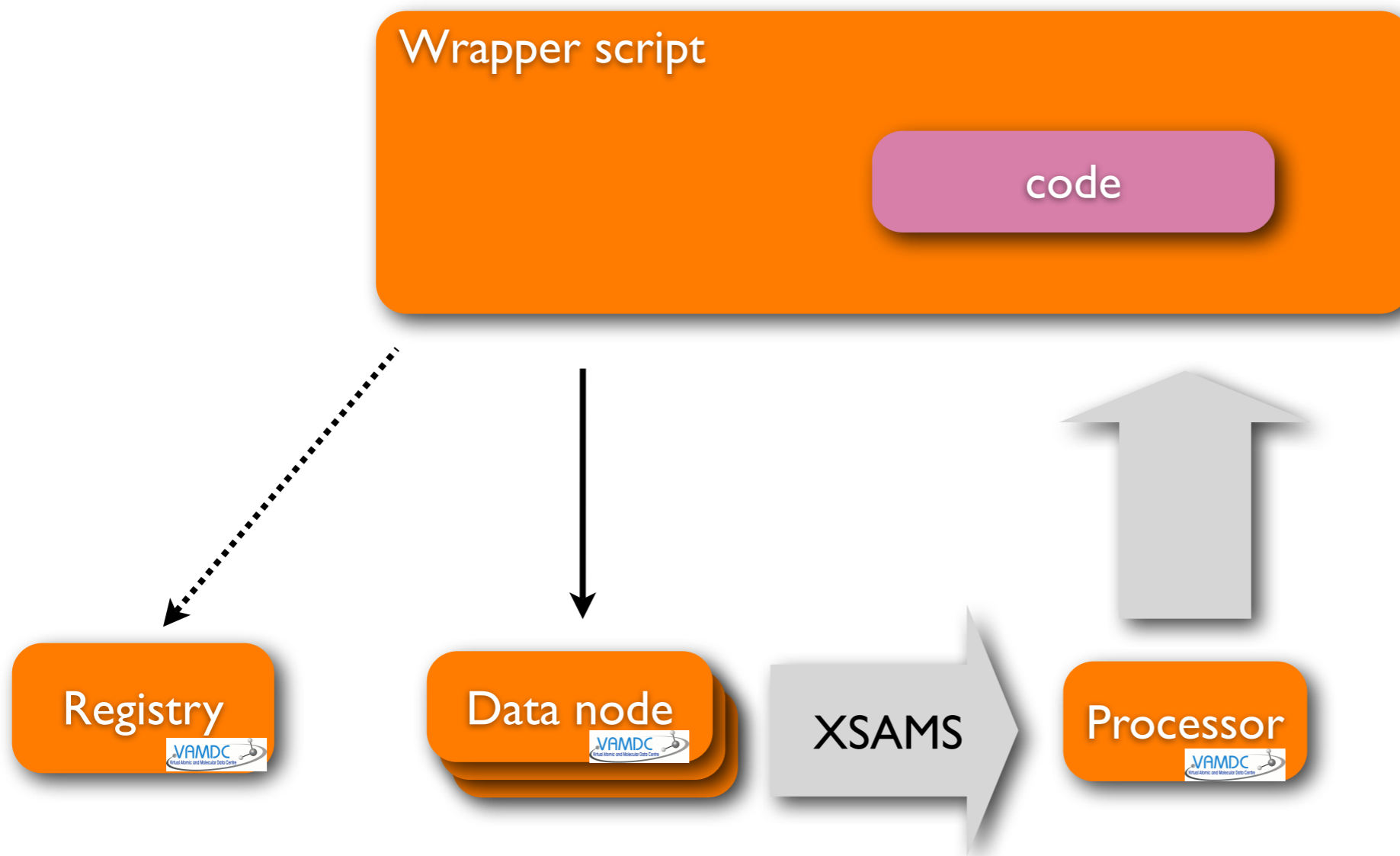
Usage: portal & processors



Usage: code as service



Usage: code as client



Data nodes available

[BASECOL](#)

[Cagliari/Toulouse PAH](#)

[Carbon Dioxide Spectroscopic Databank](#)

[Chianti](#)

[Cologne Database for Molecular Spectroscopy](#)

[GSMA Reims S&MPO](#)

[GSMA Reims Ethylene](#)

[GhoSST](#)

[HITRAN-UCL resource](#)

[IDEADB - Innsbruck Dissociative Electron Attachment Database](#)

[ICB Dijon Methane](#)

[KIDA](#)

[Lund laboratory spectroscopy database](#)

[OACT - LASP Database](#)

[Spectr-W3](#)

[Stark-B](#)

[TIPbase](#)

[TOPbase](#)

[VALD \(atoms\)](#)

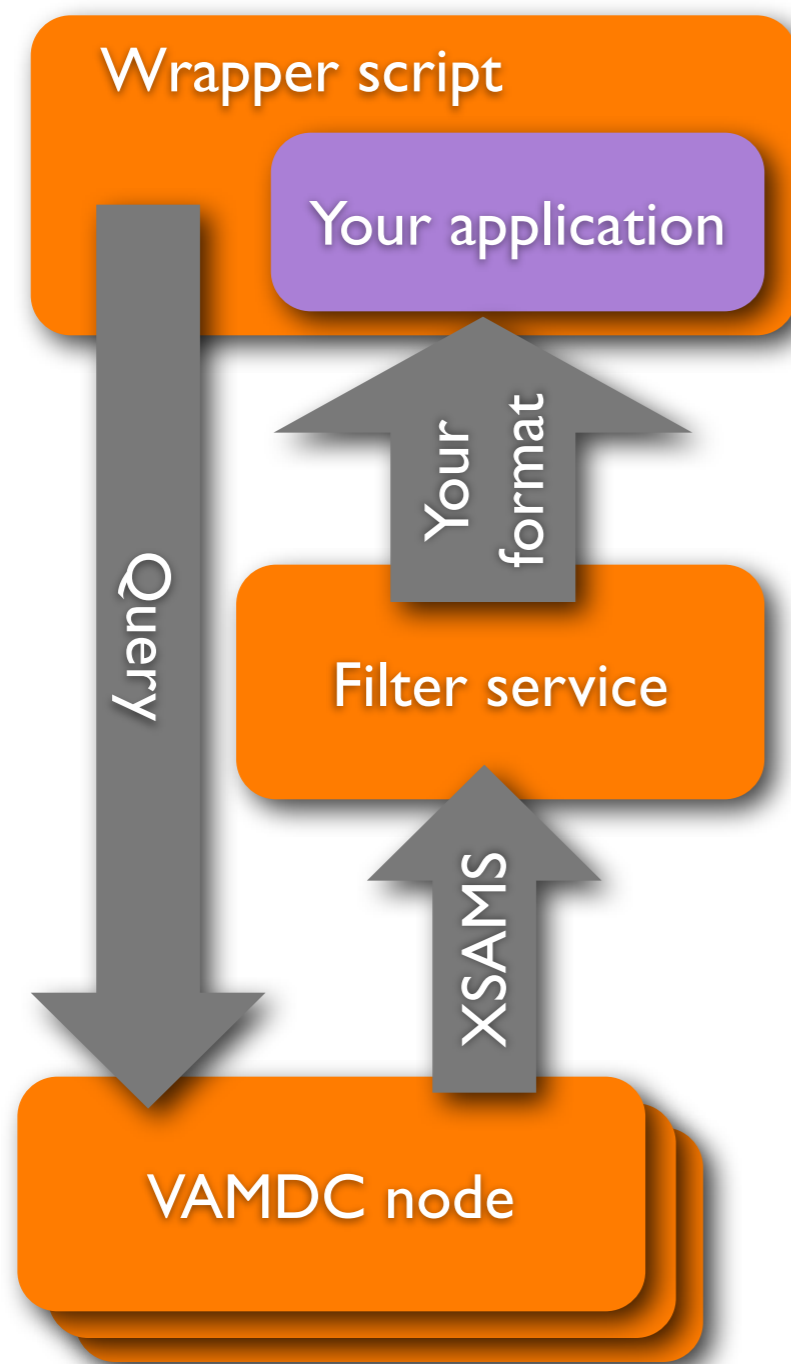
[VALD sub-set in Moscow \(obs\)](#)

[Water internet Accessible Distributed Information System](#)

Participating as an app author

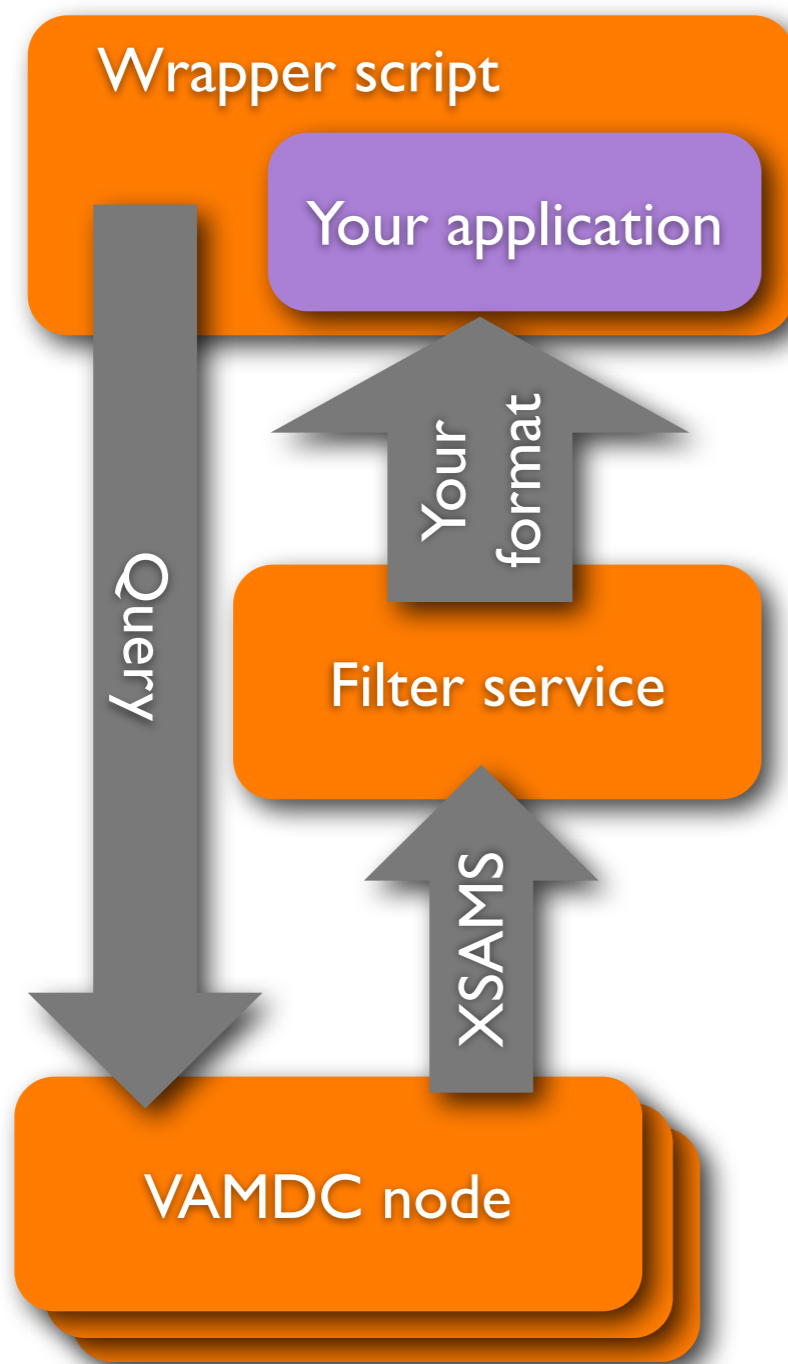
Participating as an app author

Option I

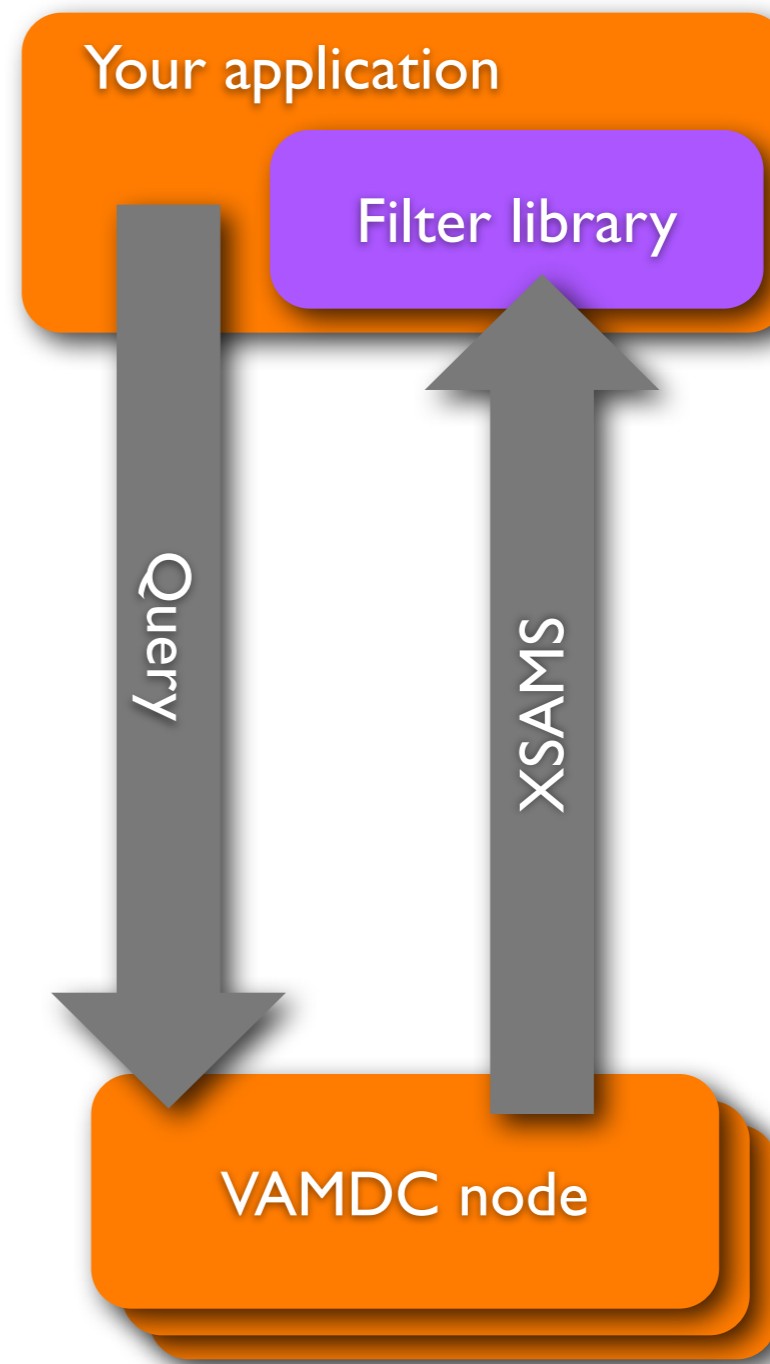


Participating as an app author

Option 1



Option 2



Advantages of adapting your code

- Use with wider range of data
- Wider range of potential users
- Easier to acquire data
- Data always up-to-date

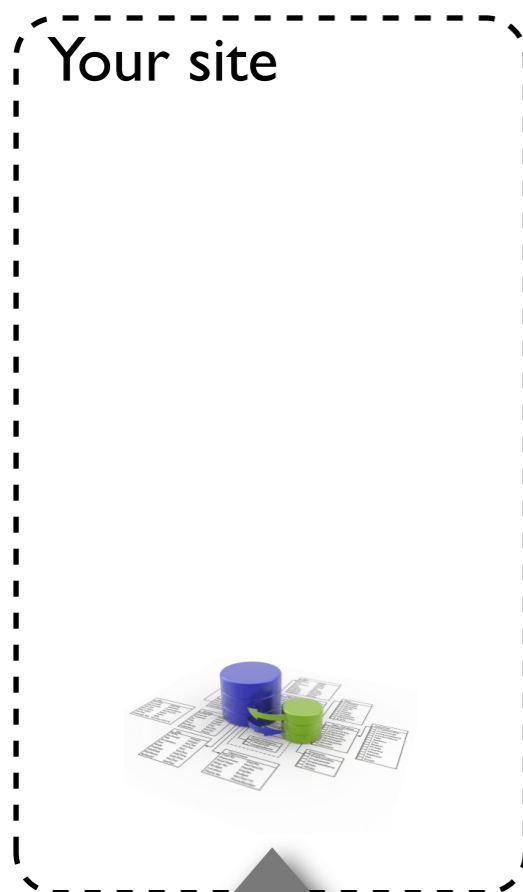
Participating as a data provider

Option 1



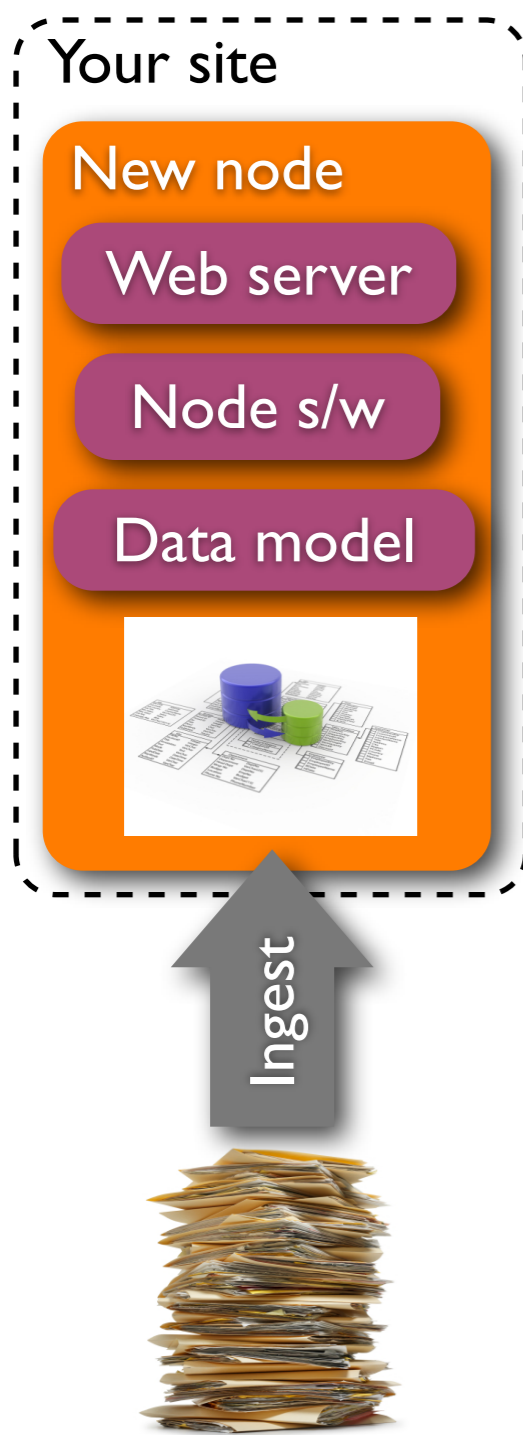
Participating as a data provider

Option 1



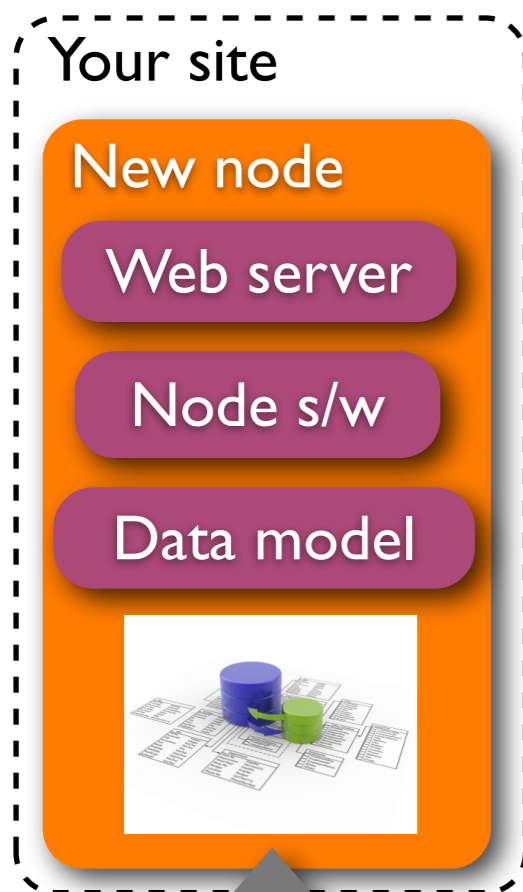
Participating as a data provider

Option 1

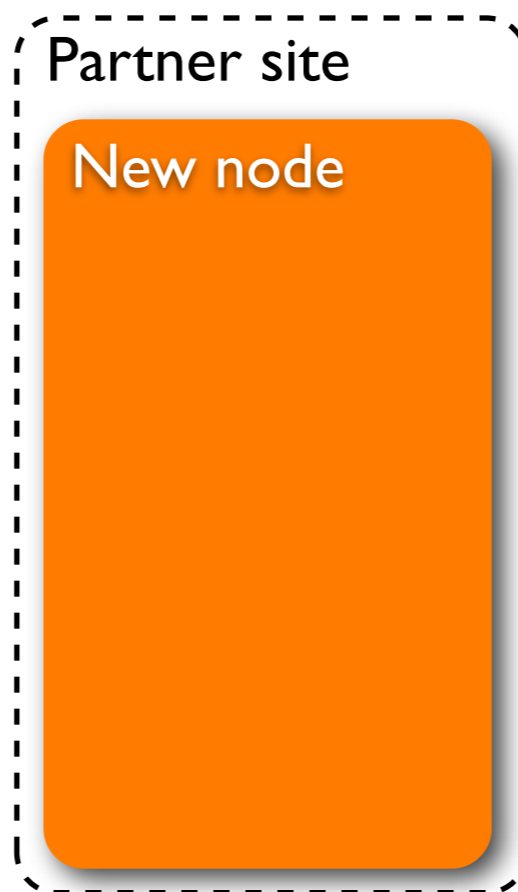


Participating as a data provider

Option 1



Option 2

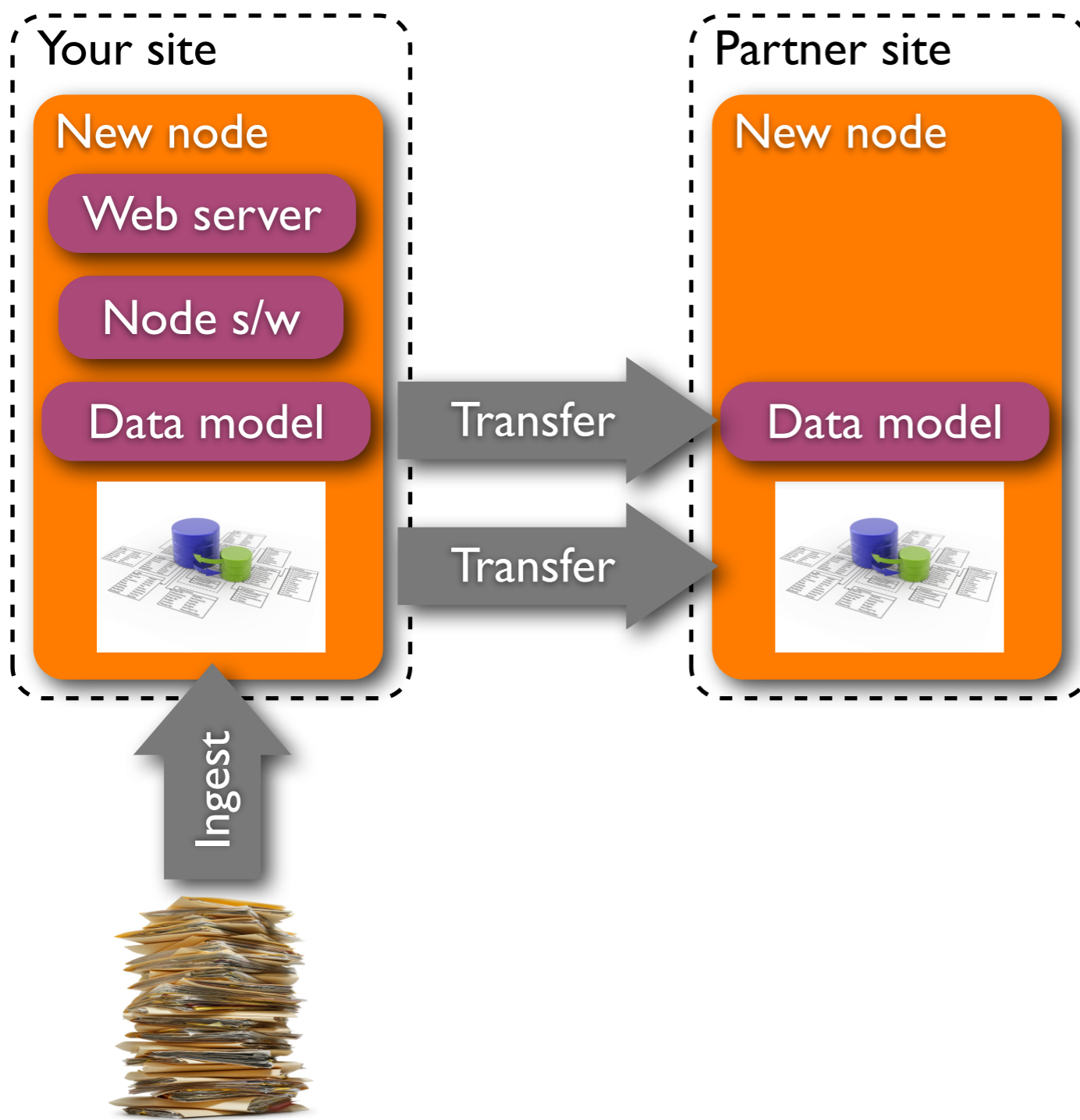


Ingest

Participating as a data provider

Option 1

Option 2

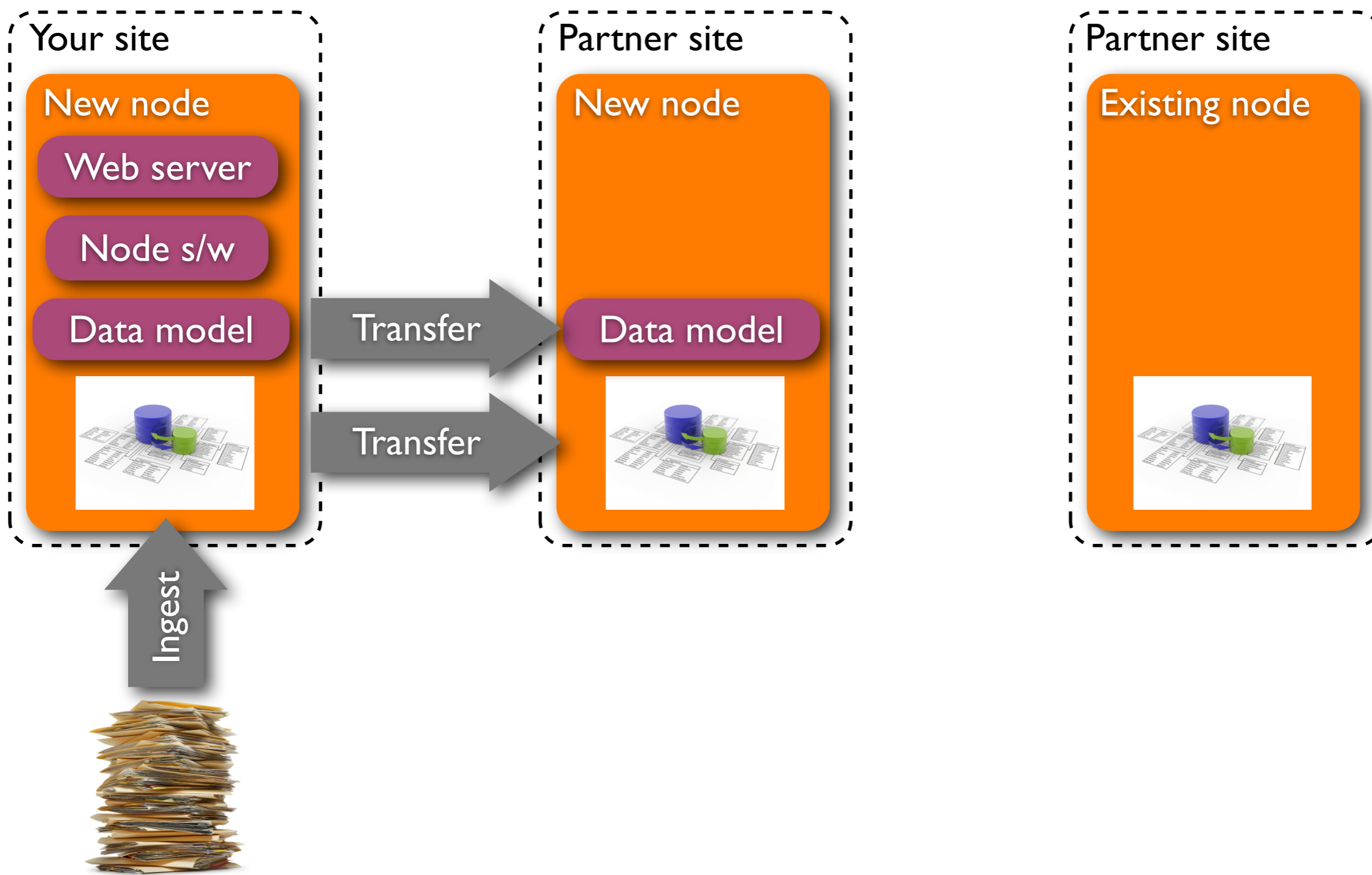


Participating as a data provider

Option 1

Option 2

Option 3

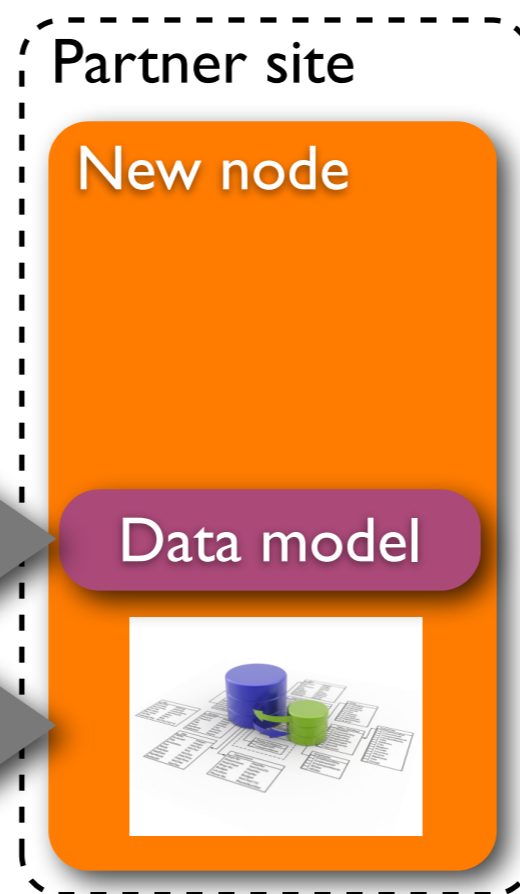


Participating as a data provider

Option 1



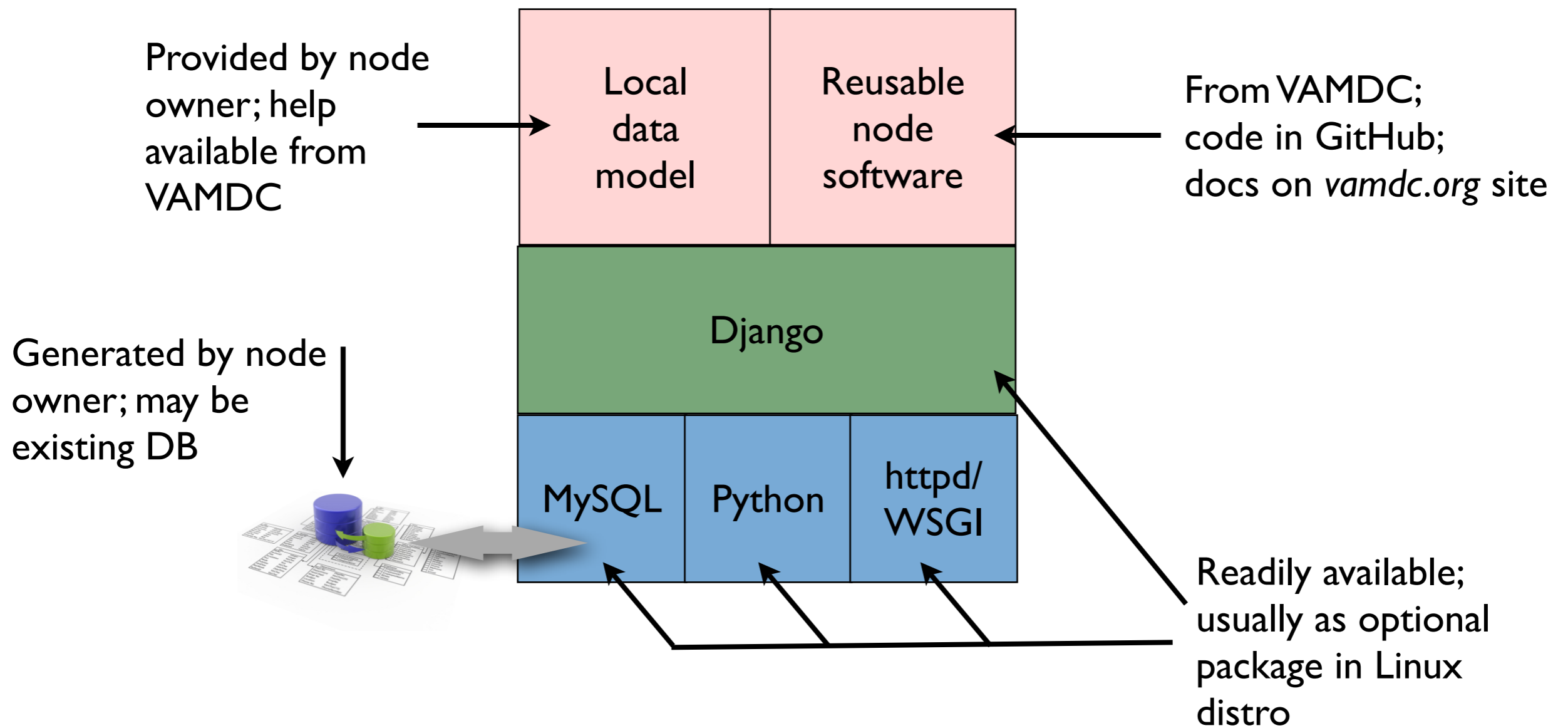
Option 2



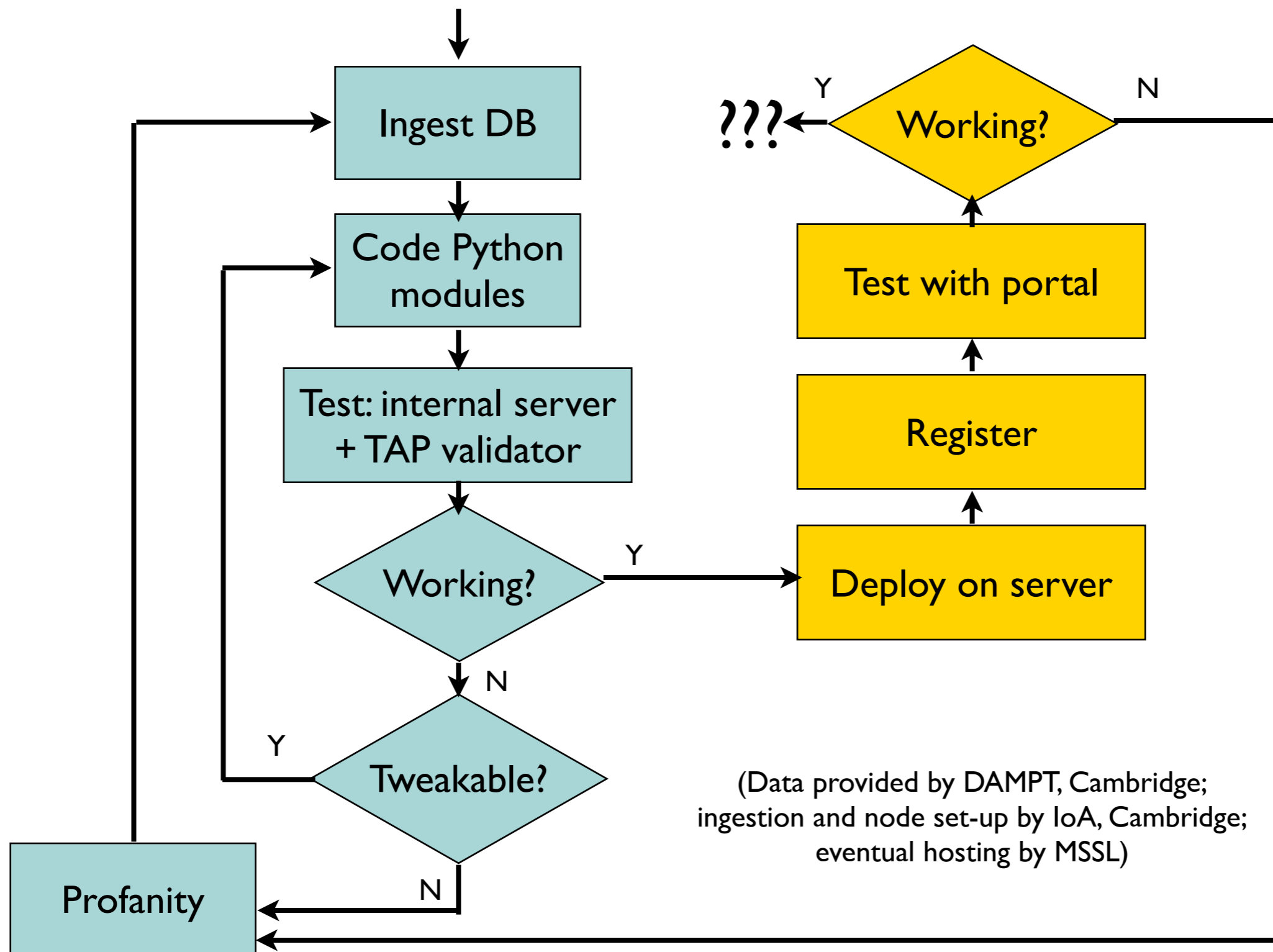
Option 3



Inside a node

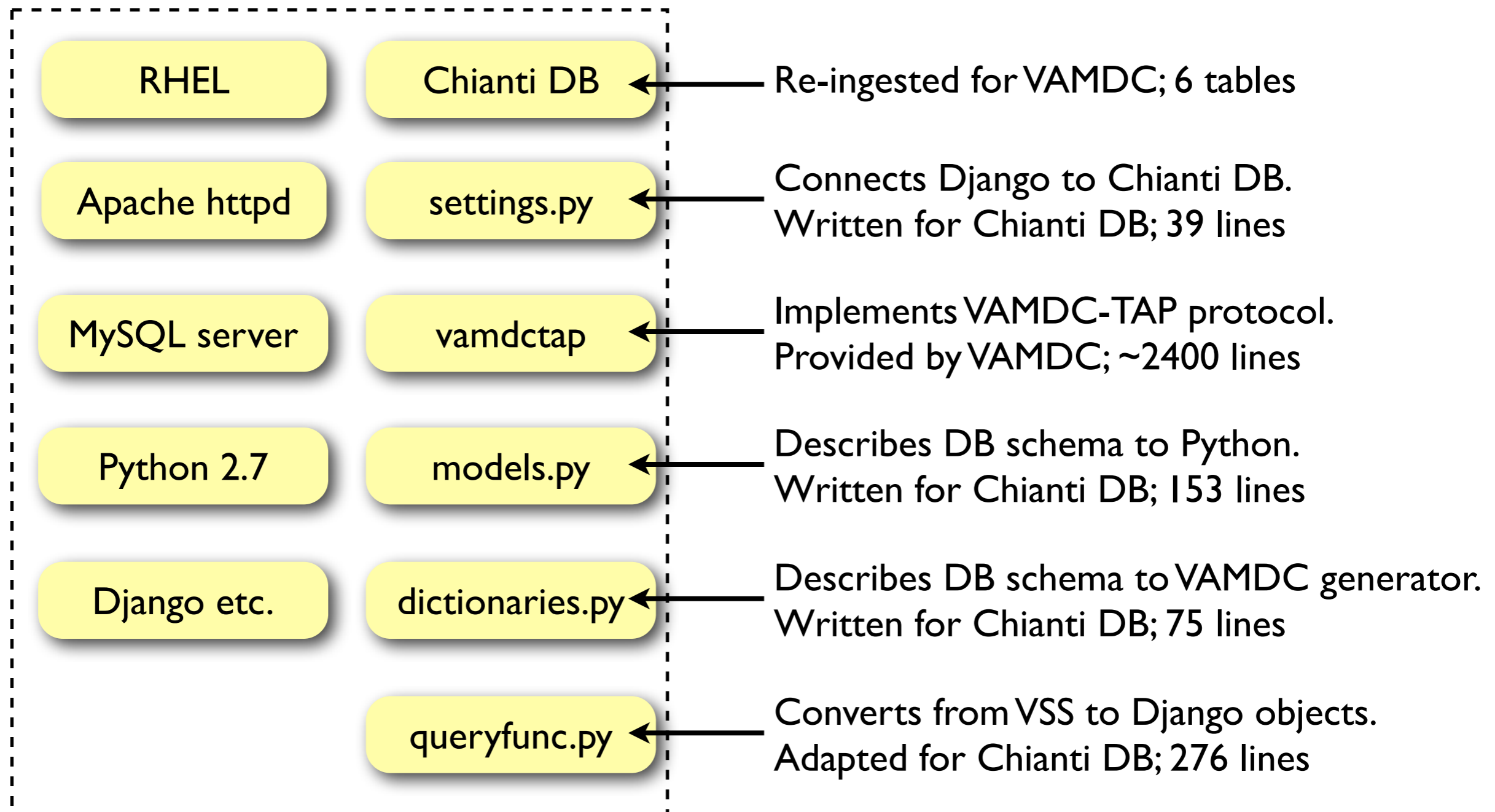


Node example: Chianti



(Data provided by DAMPT, Cambridge;
ingestion and node set-up by IoA, Cambridge;
eventual hosting by MSSL)

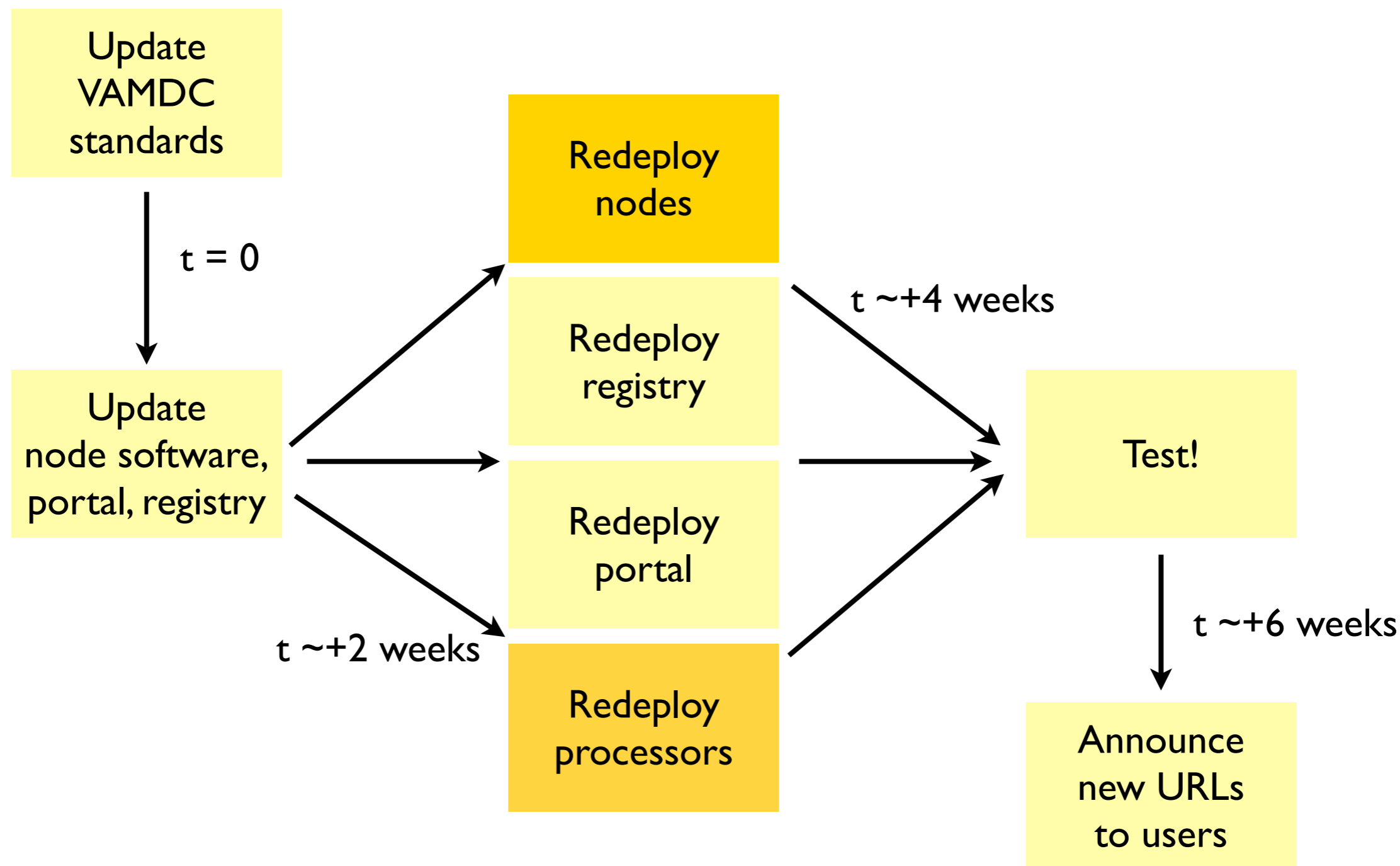
Chianti example (cont.)



Benefits of making a node

- More potential users
- All parts of data made available
- Branding; citation of your data
- Data preservation
- Easier than writing your own web-site

Annual updates of standards



For reference

<http://vamdc.org/>
<http://vamdc.eu/>

- Standards
- Software
- Documentation
- Support
- Contacts