Open APIs for Open Minds

Smart Data Models:

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FIWARE Foundation

FIWARE

Index

The Smart data Models Initiative

PART 1. Context

- Approach to data models. ‘De facto’ standardization.

PART 2. The initiative

- Principles. What is the Smart Data models Initiative
- Structure
- Governance and participation
- Data models sources and why using
- Data models lifecycle
- Services to users and contributors
- Roadmap and last news

PART 1

Approach to data models. ‘De facto’ standardization.

Approach to data models. ‘De facto’ standardization.

QUESTIONS

- How frequently changes the conditions on your business?
- Would the standards help you on the change?
- The standards meet your needs?
- Digital transformation at standardization speed?
- I.e. ISO 50001
  - First version 2011
  - Next version 2018
- 4 years is the right period?
- Could we think on something which complements current methods of standardization?

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Approach to data models. ‘De facto’ standardization.

Concept	Classic	De-facto
Standardization body	Stable and fully-dedicated entity → DIN	Unstable or not fully dedicated → Smart Data Models Initiative
Standardization groups	Extended and Balanced members from relevant and interested actors	Interested users and developers with expertise on the field
Consensus mechanisms	Global Reviews by participants	By contribution and Benevolent dictator
Prestige of standards	By source entity	By use of the results
Advantages	Low-biased standards. Coherence with former standardizations Predictable reviews Funding based on standard costs and members fees	Standard created together with implementation **Evolution by use** **Quick reviews** Low cost
Disadvantages	Creation of *theoretical* standards (never implemented) **Slow reviews**	Standardization hardly support costs Potential biased standards Low barriers to Potential competitors

Data models needs

As **user** what will happen to the data models you use when ….

- … your project ends.
- … you have to update them. Could you afford it?
- … you were asked to make them interoperable with other/new initiatives?
- … you need to update it to new regulations / standards?

As **contributor** what is the cost of using/integrating new standards …..

- … in terms of time-to-market?
- … in terms of costs?
- … being out of the definition of standards / adaptation?

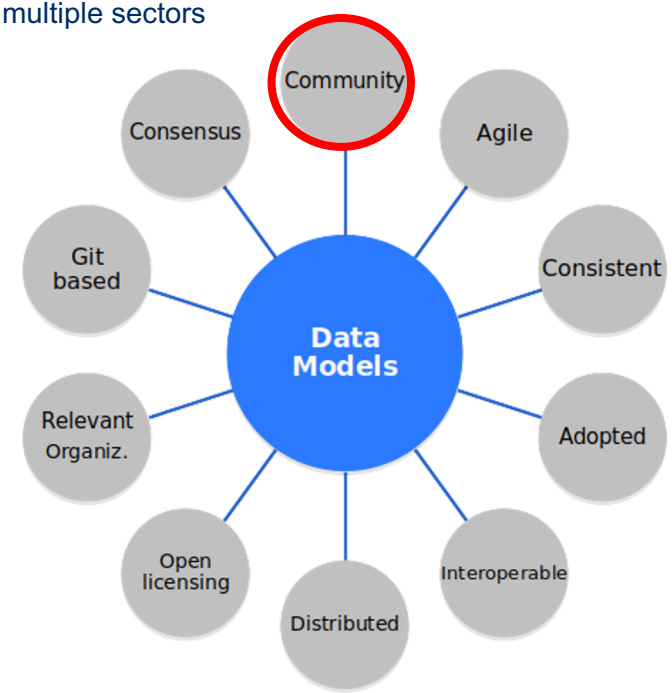
Wouldn’t be more efficient and useful to do it together?

PART 2

Principles of Smart data models initiative

Principles of Smart data models initiative

- A **community** site with **detailed data models** available for open and free use for multiple sectors



Principles of Smart data models initiative

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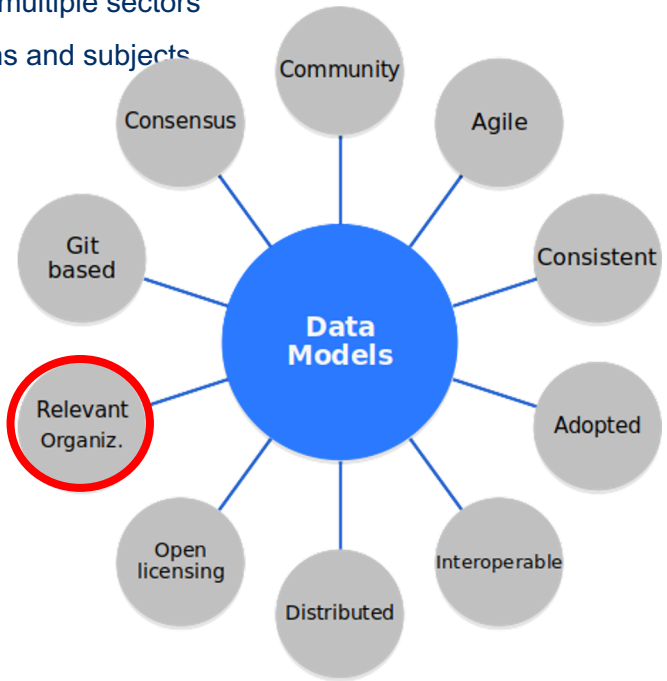

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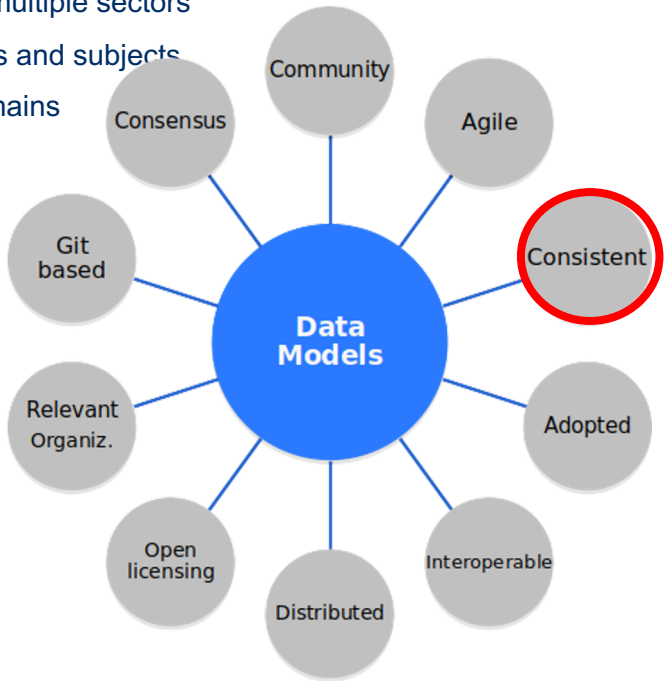

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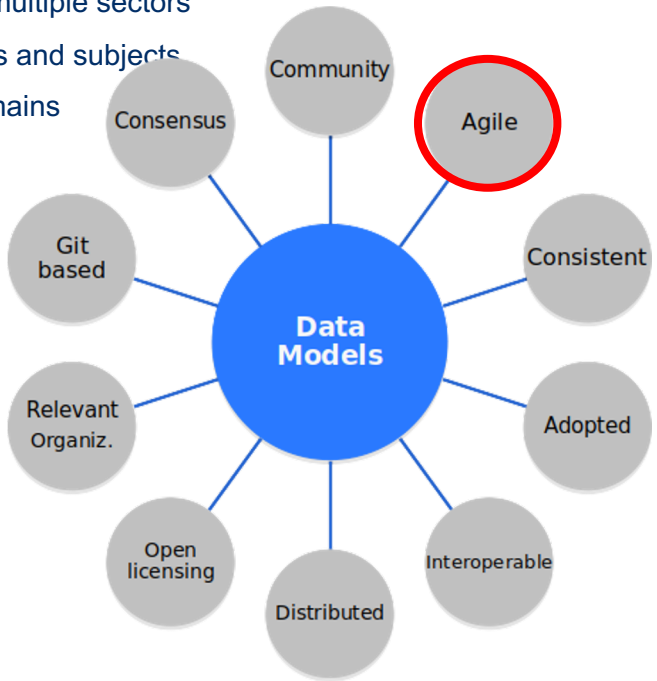

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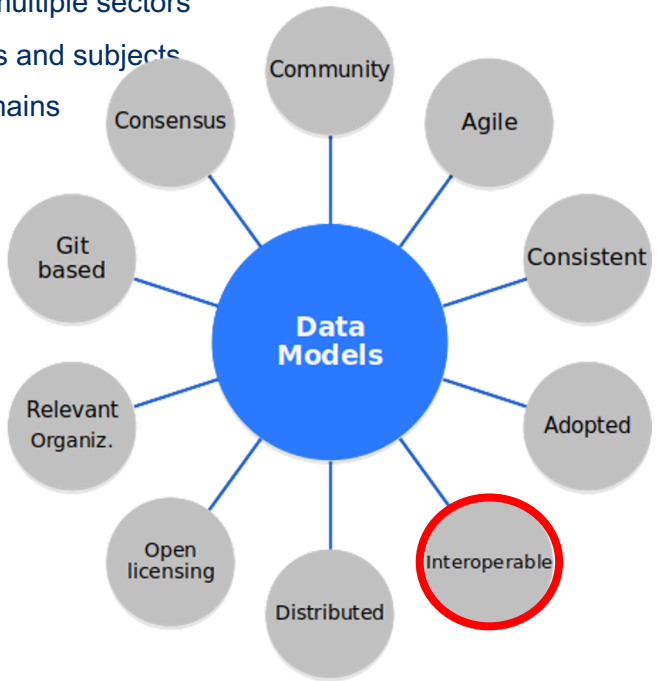
  - Extended **interoperability**
  - Reduced time dedicated to data model codying
  - Accumulated experience tested in real case scenarios
  - Mapped to be integrated with other platforms



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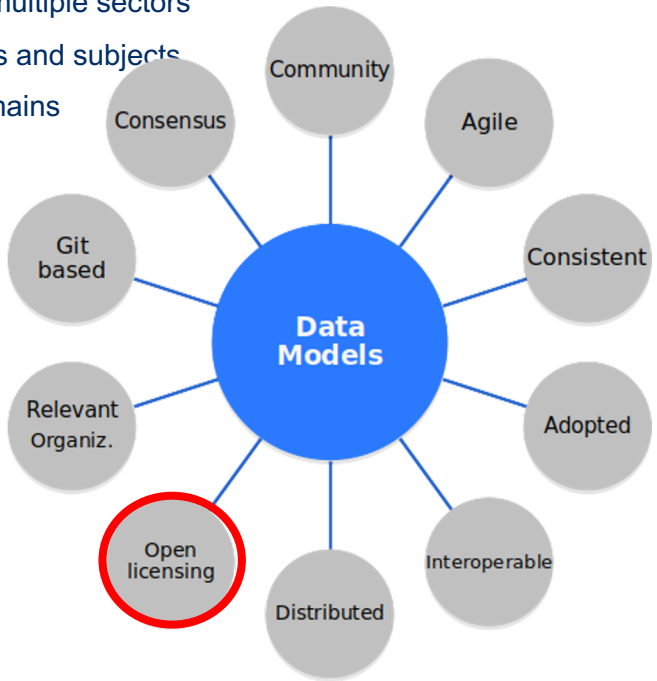

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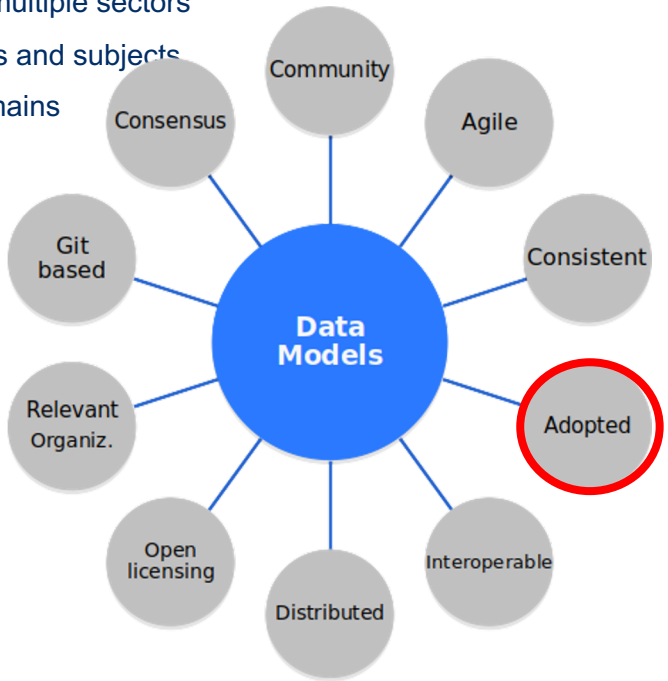

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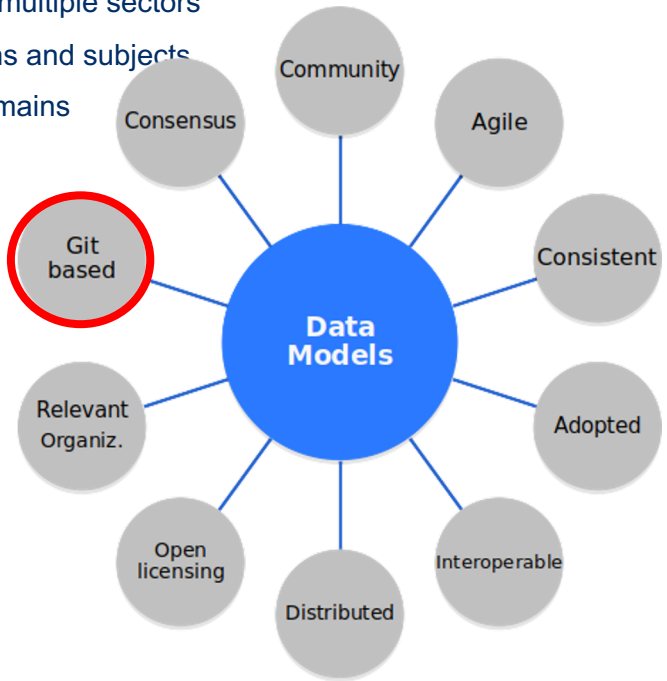

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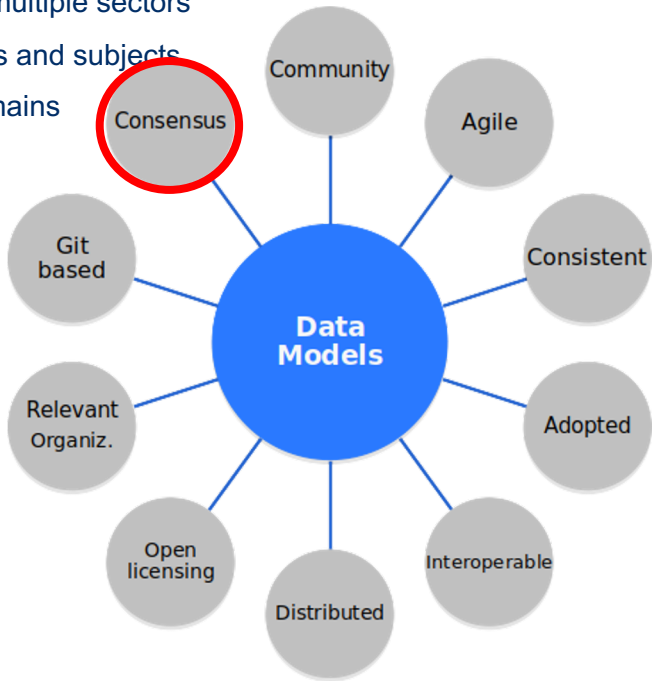

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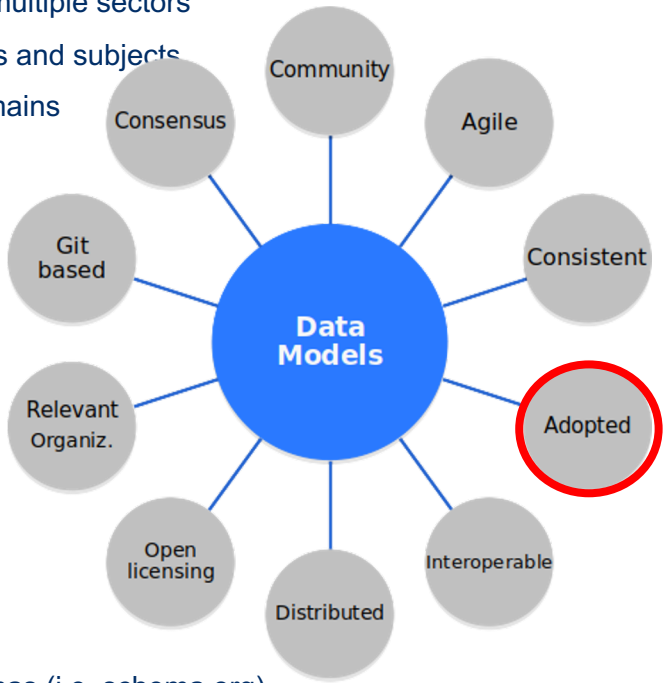
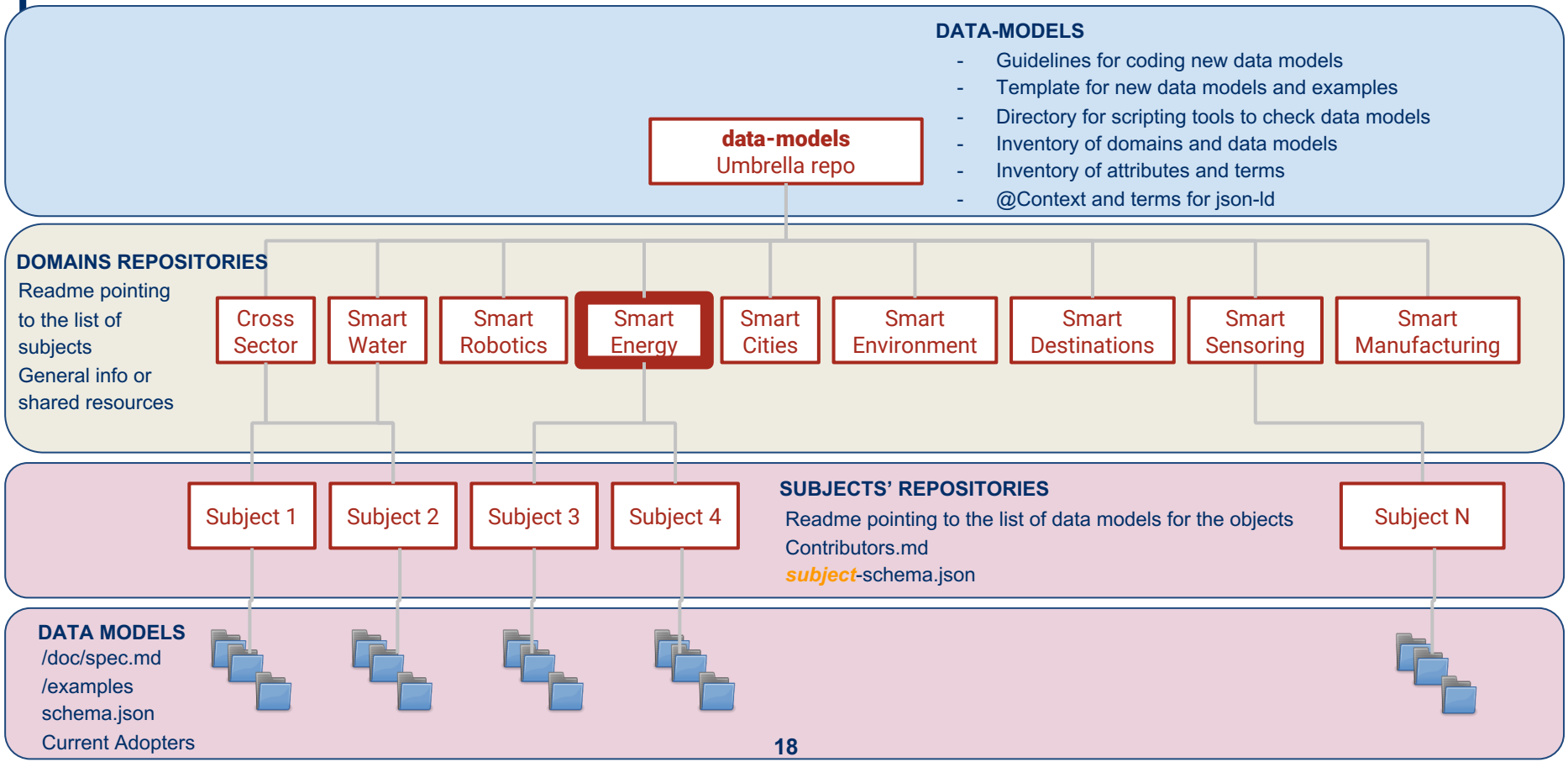
- Based on **widely adopted** standards (including ontologies and international schemas (i.e. schema.org)



PART 2

Structure

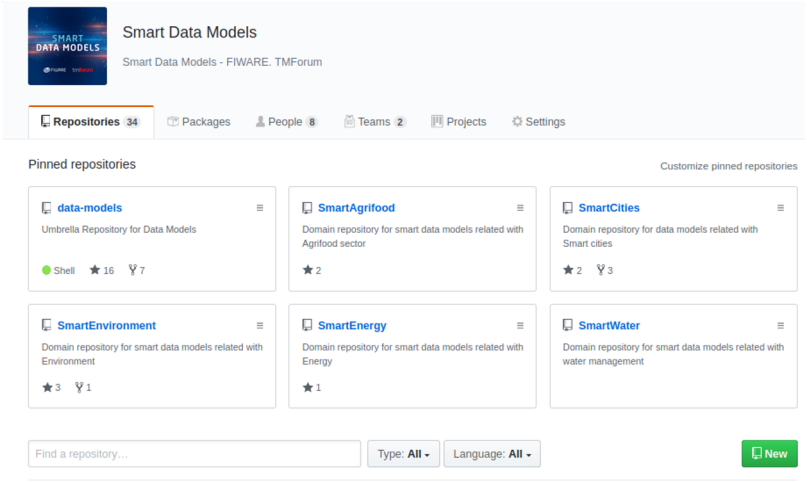
Structure: domains and subjects compile data models



Structure: Webs

GITHUB

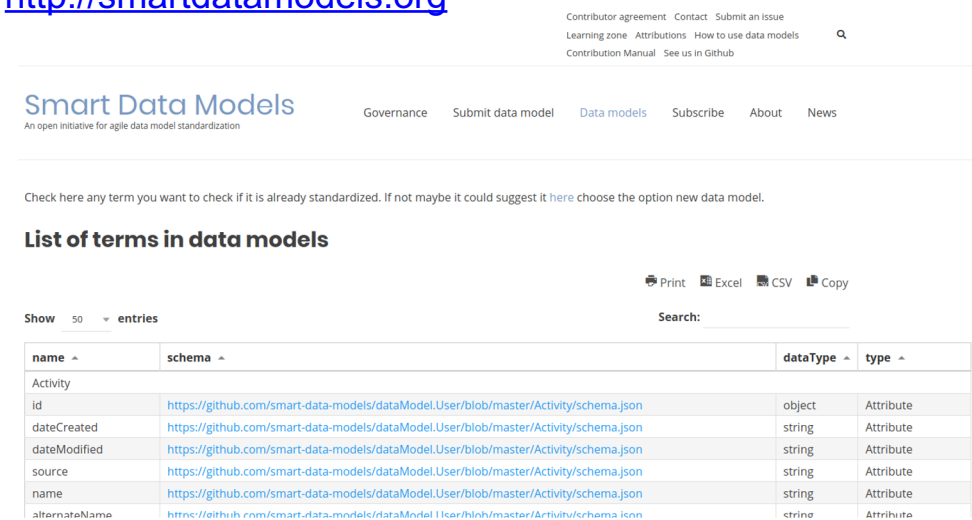
http://github.com/smart-data-models



- Oriented to **developers**
- Contribution by PR
- Issues on data models

SITE (wp)

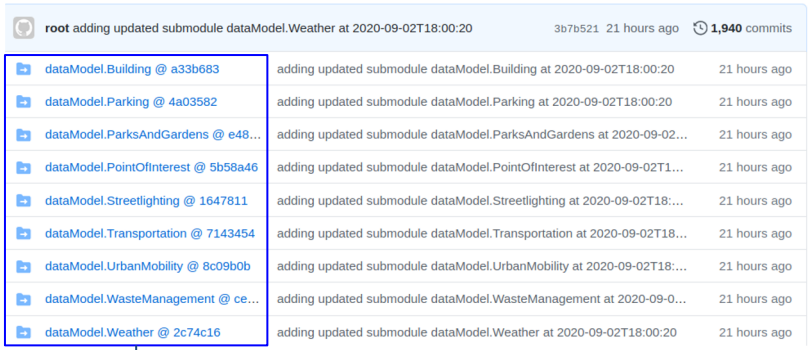
http://smartdatamodels.org



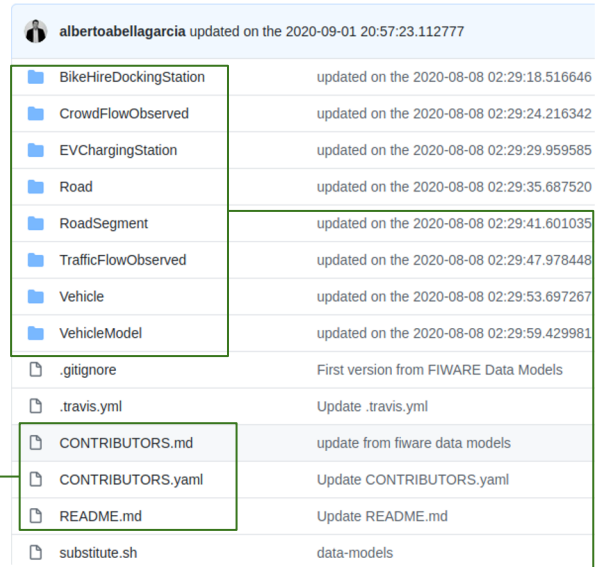
- Oriented to **end users**
- News on updates (subscription)
- Check attributes, enumerations and descriptions
- Learning zone

Structure: Github. Domains

Domain repositories and others. https://github.com/smart-data-models/dataModel.Energy



- Subjects as submodules of the Domain
- Updated daily to last commit



- Shared elements for all the Data models in the subject

- Data models in the subject

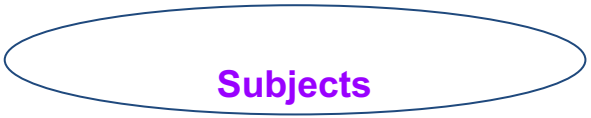
PART 2

Governance and participation

Governance and participation

Governing body
Consistency and participation
Consensus procedure
Resources committed

Relevant Organizations
Industrial sector. i.e. Smart city



Relevant organization or individuals
Groups of data models related .i.,e. BIM

Governance and participation

Steering board members

who can be member
- FIWARE foundation
- TMForum
- Others to come

Management
- Consensus decisions
- Support resources
- Strategy

How to belong
- Under strategic agreement

Incumbent Stakeholders

who can be member
- Relevant organizations (industrial sectors)

Management
- Manage domains' and subjects' repositories

How to belong
- Under strategic agreement

Contributors

who can be member
- Open contribution
- Manage evolution

Management
- Their contributions
- Contribution Guidelines

How to belong
- Contribution agreement (online form)
- Contributions' quality reviewed
- Real case scenario

Users

who can be member
- Open license
- Mapping of community

Management
- Data models use
- Feedback on use

How to belong
- Voluntary community
- Organizations Cross sector, Integrators, End users

Governance and participation

Requirements for participation

1. To become a **contributor** you need:
    1. A github account
    2. Sign the contribution agreement
    3. Use the guidelines and the contribution manual
    4. A contribution approved (a Pull Request or a submitted form)
    5. Listed in the contributors file, other example

1. To become a **administrator** of Subject (person or organization) or Domain (organization)
    1. Explicit agreement with management
    2. Agreement on the guidelines
    3. Resources (mostly time dedication for managing the repo)

1. To get into the **steering board** (organization)
    1. Specific agreement

PART 2

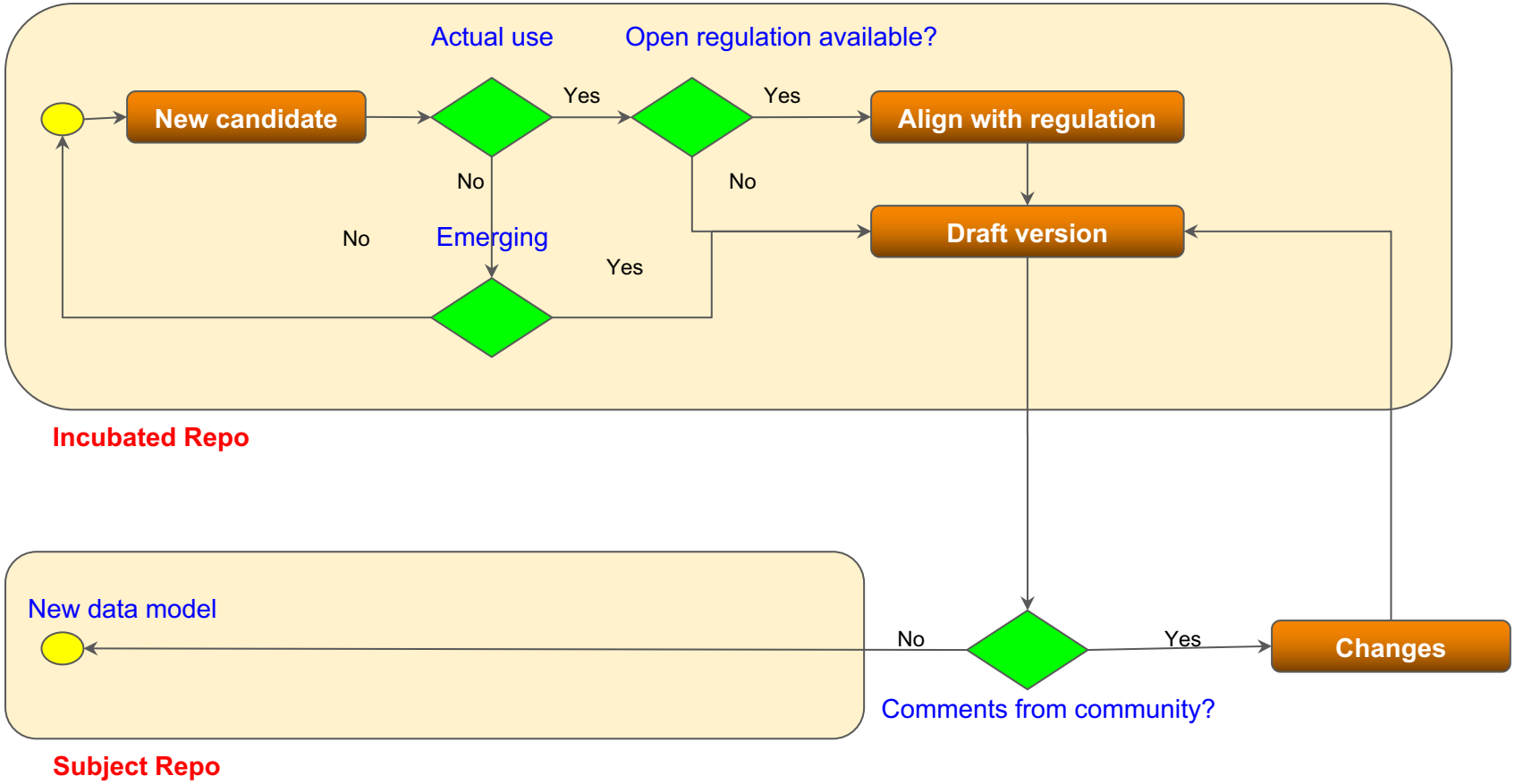
Data models

Data models sources

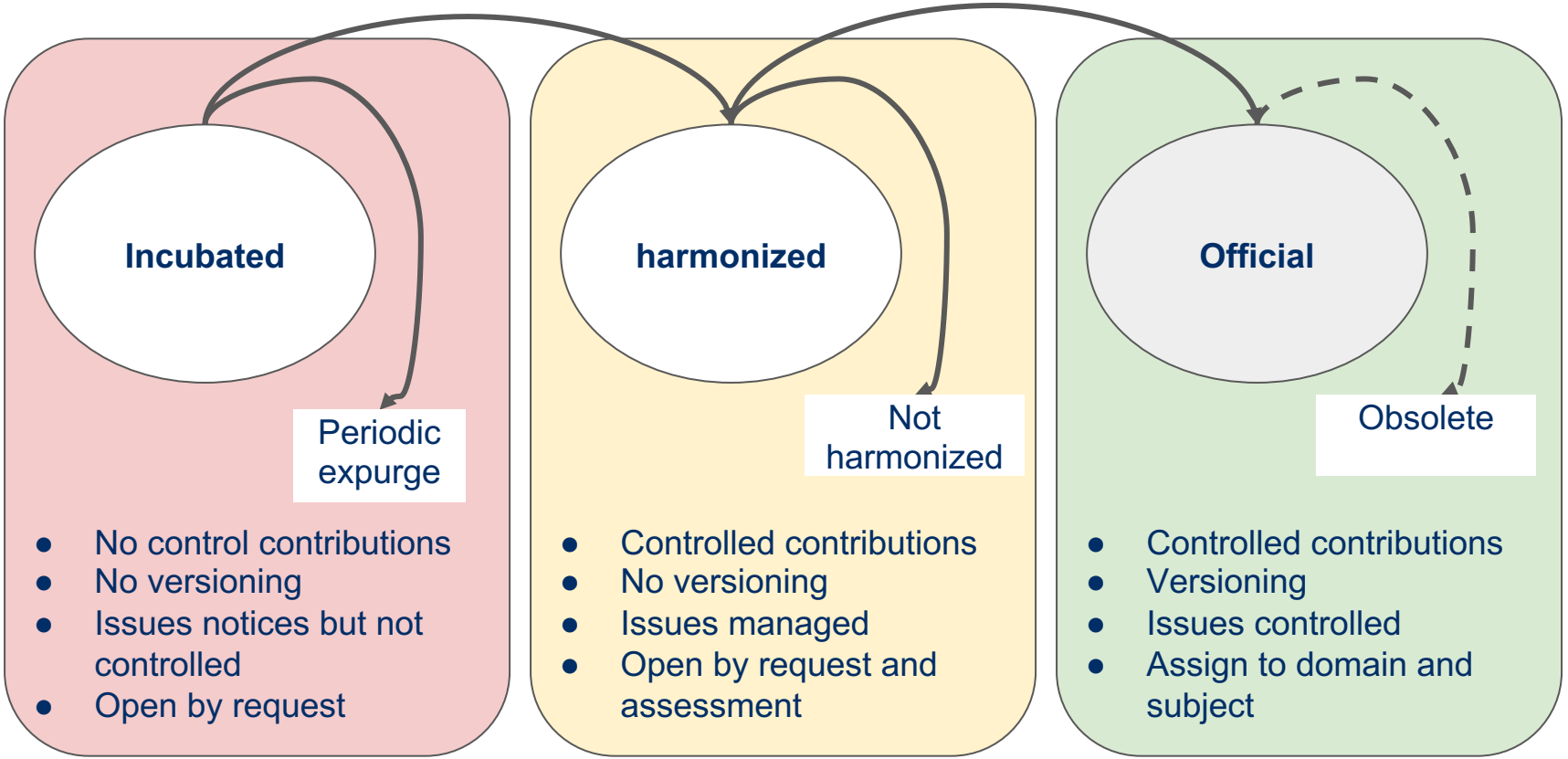
Data models' sources

- Translation of existing adopted regulations (**IEC 61970/61850**, UNE178503, Building hierarchies, etc)
- Voluntary contributions from real use cases
- Projects' results with real case scenarios
- Other sources (i.e. agreements with other organizations GS1's dictionaries)

New data model Lifecycle



Data model Lifecycle



- No control contributions
- No versioning
- Issues notices but not controlled
- Open by request

- Controlled contributions
- No versioning
- Issues managed
- Open by request and assessment

- Controlled contributions
- Versioning
- Issues controlled
- Assign to domain and subject

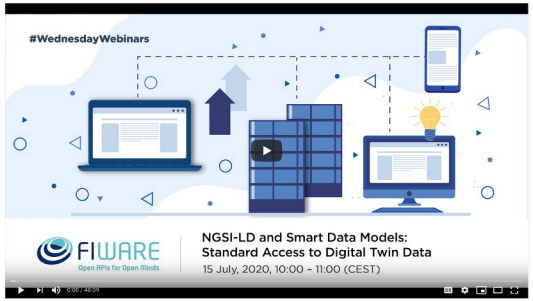
PART 2

Data Services for the users

Services to users and contributors

Frontpage. https://smartdatamodels.org/index.php/news/

1. DDBB of attributes and enumerations
2. DDBB of attributes' descriptions
3. Subscription to news (per domain i.e. water)
4. Support to issues
5. Submit data models
6. Training
7. Contribution manual
8. Contribution agreement
9. Services on line for checking data models



Example 1. Looking for attributes for a new data model

Example 2. Integration of data model with other system.

Licensing of data models.

How to contribute.

Governance.

Roadmap.

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PART 2

Roadmap and last news

Roadmap and last news

Last news (september - ocotber)

1. Automation of context and terms
2. Integration with EPANET in water domain
3. Updates on data models
    1. Smart cities: OnStreetParking
    2. Environment: AirqualityObserved
    3. Water: Valve, Pump, Pipe
4. Incubated data models (41)
5. Harmonization data models (16)
6. Updating of documentation
7. PoC for random payloads
8. Drafting data models for energy (483 elements)
9. Draft Service for checking properties a of new data model

Roadmap and last news

Roadmap data models

1. Extension of the data models coming from global data sources:
    1. Energy IEC 61970 and 61850
    2. Smart city models coming from other standardization initiatives
    3. Smart destinations semantics translation into data models
    4. New subject Ports
    5. Robotics data models (microROS)
    6. Agrifood data models
    7. Water Quality and water distribution data models
    8. Aeronautics domain
    9. Schema.org massive translation into data models (partially used)
    10. Smart buildings adaptation
2. **Automation**
    1. Payload generator beyond PoC
    2. Automatic check of complete documentation and examples
    3. Multilanguage documentation (specifications)

Q & A

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