Laboratory for Applied Ontology
Institute of Cognitive Science and Technology
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Core Vocabularies
per servizi pubblici e organizzazioni:

stato dell'arte e considerazioni metodologiche

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Sommario

- L'iniziativa europea ISA^2 *(Interoperability Solutions for European Public Administrations)*
- Cosa sono i *core vocabularies*
- *Core Public Services Vocabulary*
- *(Core Public Organisations Vocabulary)*

ISA

ISA² is the **follow-up programme to ISA**, which ran from 2010-2015. ISA² started on **1 January 2016** and it will last last until **31 December 2020**.

It was officially adopted on 25 November 2015 by the European Parliament and the Council of the European Union.

The new **EUR 131 million** programme will support the development of interoperable digital solutions, which will be available to all interested public administrations in Europe.

By using ISA² solutions, administrations can ensure interoperability between different IT systems responsible for the delivery of electronic services, thereby ensuring seamless electronic cross-border or cross-sector interaction between public administrations, businesses and citizens.

The **main beneficiaries** of ISA² are public administrators at EU, national, regional and local level (direct beneficiaries), as well as citizens and businesses (indirect beneficiaries).

What is new in ISA^2

- a focus on businesses and citizens
- an essential contribution to the Digital Single Market strategy
- the goal of increased collaboration and synergies with relevant EC initiatives
- the promotion of the use and maintenance of the
  - European Interoperability Strategy (EIS)
  - European Interoperability Framework (EIF)
  - European Interoperability Reference Architecture (EIRA)
  - European Interoperability Cartography (EICart)

The ISA^2 work programme

- KEY AND GENERIC INTEROPERABILITY ENABLERS

Action 2016.29 catalogue of services

- SEMANTIC INTEROPERABILITY
- ACCESS TO DATA / DATA SHARING / OPEN DATA
- GEOSPATIAL SOLUTIONS
- E-PROCUREMENT / E-INVOICING - SUPPORTING INSTRUMENTS
- DECISION MAKING AND LEGISLATION – SUPPORTING INSTRUMENTS
- EU POLICIES – SUPPORTING INSTRUMENTS
- SUPPORTING INSTRUMENTS FOR PUBLIC ADMINISTRATIONS
- ACCOMPANYING MEASURES

Catalogue of services (Action 2016.29)

The main objective of the action is to achieve interoperability around national and European service descriptions that would help European public administrations build national as well as cross-border **harmonised catalogues** of public services.

The action will work towards the fulfilment of these objectives:

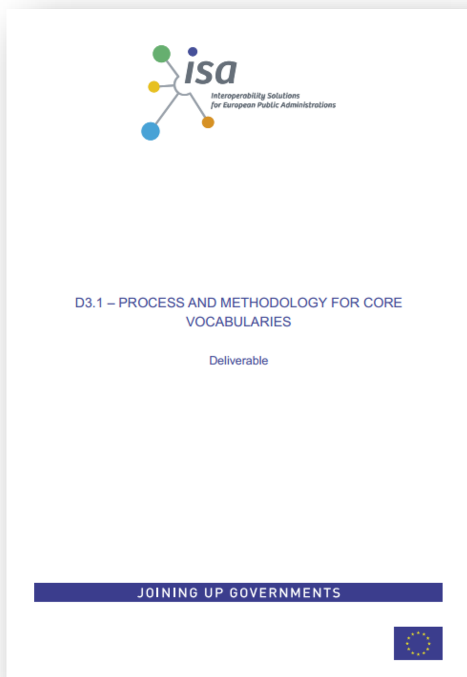
- implement some **interoperability specifications** that will help European public administrations to describe public services a group them under life and business events

- implement solutions to enable the link and federation of national and European public service into a **Single Digital Gateway** in order to foster them as one-stop-shops;

- **test in real life** how those solutions can provide the expected benefits and based on the practical results improve them

- promote the **federation and in some cases aggregation** of the public services offered by the various levels of public administrations into the Single Digital Gateway. This would lead at a later stage to the creation of a European catalogue of public services in various domains;

Core vocabularies


isa
Interoperability Solutions for European Public Administrations

D3.1 – PROCESS AND METHODOLOGY FOR CORE VOCABULARIES

Deliverable

JOINING UP GOVERNMENTS

***Simplified*, *re-usable*, and *extensible* data models that capture the fundamental characteristics of a data entity in a context-neutral fashion.**

CORE PERSON VOCABULARY

CORE BUSINESS VOCABULARY

CORE LOCATION VOCABULARY

CORE PUBLIC SERVICE VOCABULARY

Source: https://joinup.ec.europa.eu/node/43160

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Building consensus on core vocabularies

- 2 WGs with each 60+ members
- 21+ EU Member States
- Following a formal open process and methodology
- Public review periods
- Re-using existing standards

Source: https://joinup.ec.europa.eu/node/43160

The CPSV

What's the value?

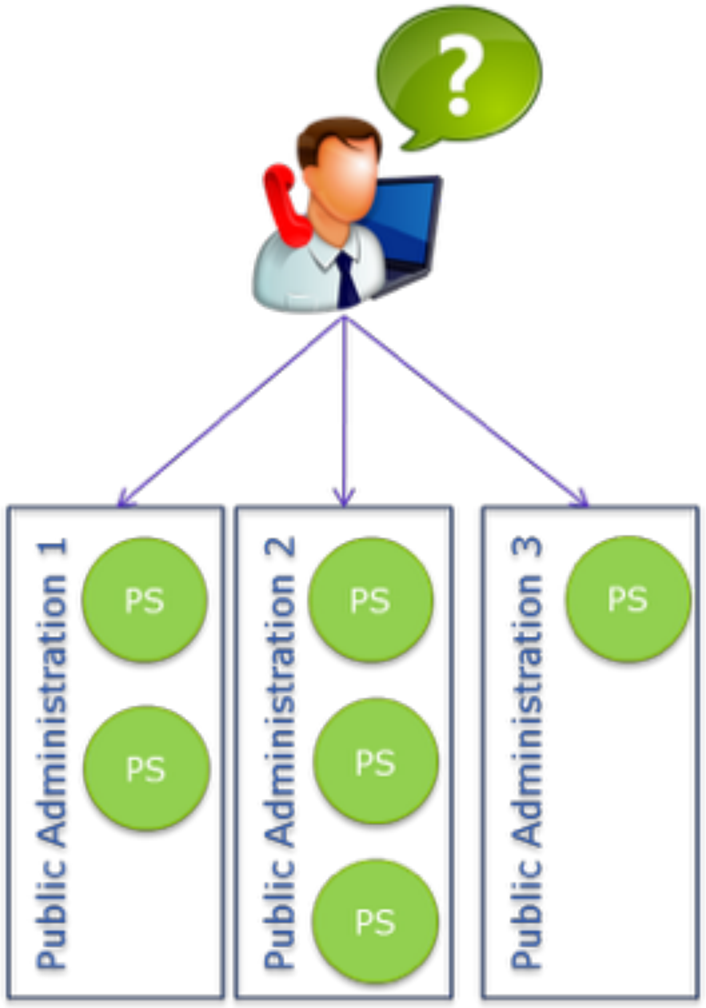
For public administrations…

- Improve the Points of Single Contact in an **easy**, **efficient** and interoperable manner through a standard data model;
- **Mapping** different public service models to a common model;
- **Cost savings** and **reduction of administrative burden** as a result of:
  - Having **more efficient communication** with businesses and reducing the amount of interactions with the front office;
  - **Better management** of public service information, i.e. describing public services only once and sharing these descriptions within and across MSs;
  - **Reusing software solutions** and **specifications** for implementing the PSCs;
  - **Managing the lifecycle** of public services and key business event, e.g. identifying gaps, retiring unused services, collecting service evaluation information for better informed investment in new services.

Our understanding of the challenges PSCs face

Points of Single Contact in EU Member States are facing several challenges:

- **Lack of coordination** between **the electronic PSCs** within the same country;
- **Fragmentation of responsibilities;**
- **Different ways of describing** and **representing** business events and public services;
- **Lack of multilingual** descriptions;
- **Redundant descriptions** of business events and public services;
- **Lack of business-centric** approach for the PSCs;
- Higher costs for **maintenance of information**;
- **No "single window"** for accessing/initiating/ executing and following up on public services within and across borders.



What's the value?

For businesses…

- It will **lower** administrative **burden** for businesses, while also **improving** their **access** to and **experience** of digital public services;
- **Improve** the **efficiency** and **lower costs** for businesses in taking care of administrative procedures;
- It will improve the **perception of administration**.

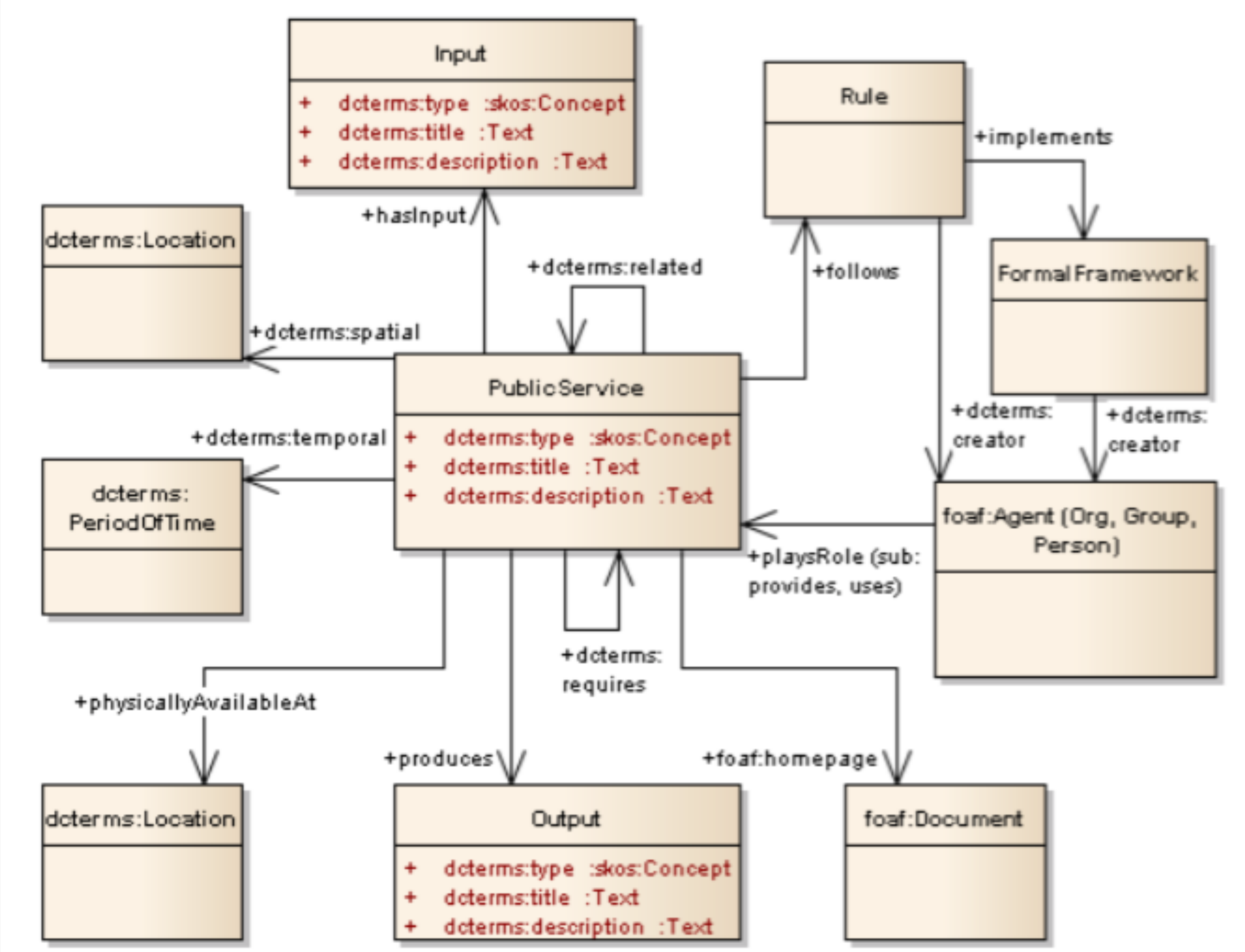
An example from communweb.it

CPSV-AP

- An **Application Profile** is a **specification** that **re-uses terms** from one or more base standards, **adding more specificity by identifying** mandatory, recommended and optional **elements** to be **used for a particular application**, as well as recommendations for controlled vocabularies to be used.

- The CPSV-AP will:
  - Add **new classes** and **properties** to the CPSV;
  - Cover the **representation of business events**;
  - Define a set of **mandatory, recommended and optional properties** for describing **public services**;
  - **Recommend** a number of **controlled vocabularies** for different properties, with a primary focus on the identification of a common controlled vocabulary for **public service types**, which can then be **linked to business events**;
  - Create **formal, machine-readable mappings to the public service models of the 8 participating MSs** to enable the semi-automatic exchange of information related to public services and key business events

The CPSV


Input
+ dcterms:type :skos:Concept
+ dcterms:title :Text
+ dcterms:description :Text
Rule
+implements
dcterms:Location
+hasInput
+dcterms:related
+follows
Formal Framework
+dcterms:spatial
PublicService
+ dcterms:type :skos:Concept
+ dcterms:title :Text
+ dcterms:description :Text
+dcterms:temporal
dcterms:
PeriodOfTime
+dcterms:
creator
+dcterms:
creator
foaf:Agent (Org, Group,
Person)
+playsRole (sub:
provides, uses)
+dcterms:
requires
+physicallyAvailableAt
+produces
+foaf:homepage
dcterms:Location
Output
+ dcterms:type :skos:Concept
+ dcterms:title :Text
+ dcterms:description :Text
foaf:Document

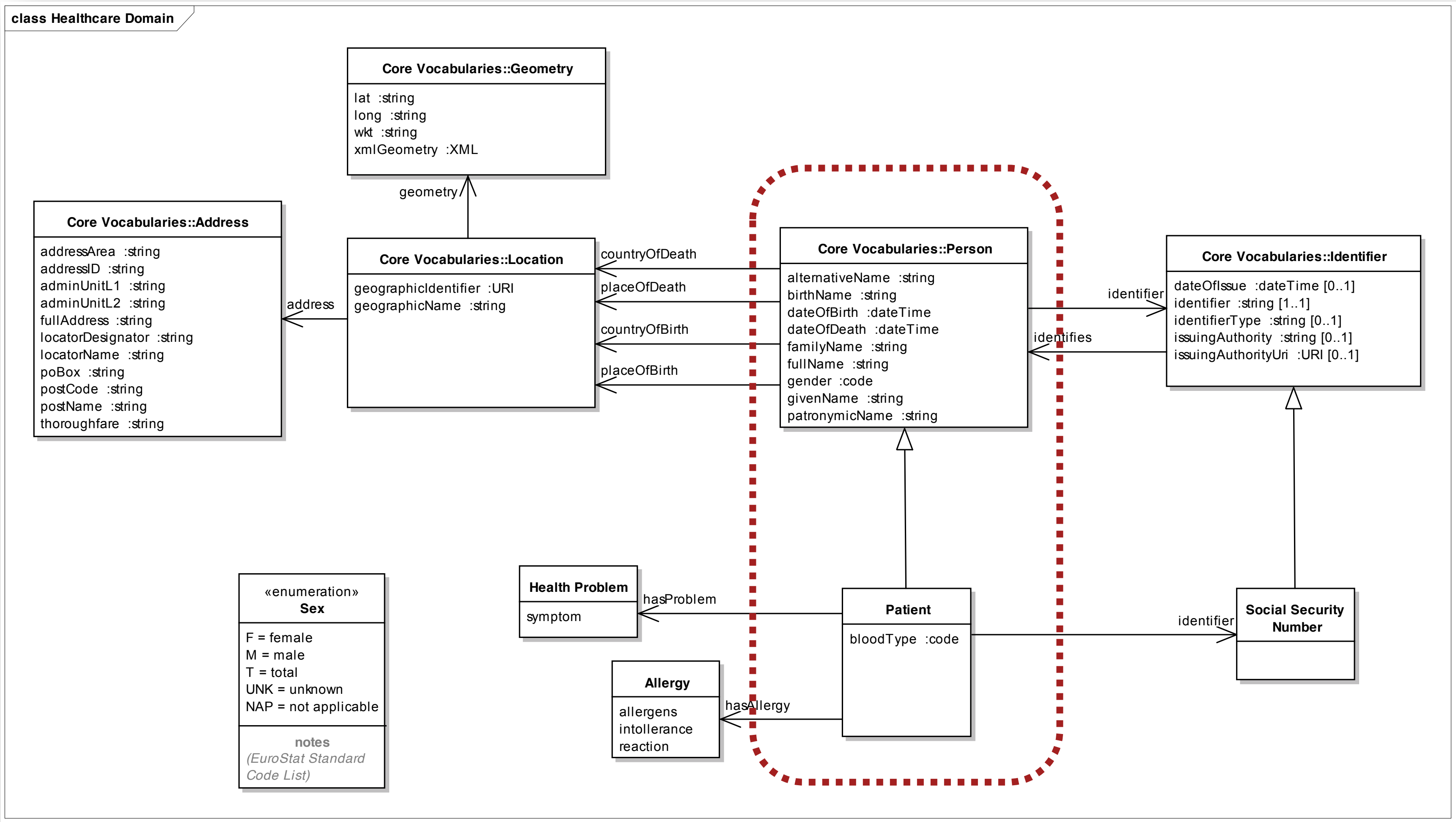
The Rules of Core Vocabularies

The Core Vocabularies are ***simplified, reusable and extensible data models*** that capture the fundamental characteristics of a data entity in a ***context-neutral*** and ***syntax-neutral*** fashion.

This means that the scope of the Core Vocabularies contains:

- ***No controlled vocabularies:*** the Core Vocabularies do not propose value vocabularies, i.e. code lists, taxonomies, etc. This is left to the context-specific vocabularies to specify.
- ***No range restrictions:*** the Core Vocabularies do not include cardinality constraints on associations or attributes. This is left to the context-specific data models to specify on the basis of domain-dependent business rules.
- ***No temporal aspects:*** the Core Vocabularies do not propose a mechanism to deal with temporal aspects. For example, if a country allows a person to change his given name, the Core Vocabularies do not include a mechanism to record the given name of a person at a speci c point in time. This is left to the context-specific data models to specify.
- ***No administrative metadata:*** the Core Vocabularies do not include any administrative guidelines on what should be done with data. For example, it does not contain any guidance on how to deal with personally identifiable information in the context of personal data protection regulations. This is left to the context-specific data models to specify.

Example of re-use by extension: defining Patient as a subclass of Core Person



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Service Definitions

D1. CPSV-AP: “a public service is the *capacity to carry out a procedure* and exists whether it is used or not. It is *a set* of deeds and acts performed by or on behalf of a public agency for the benefit of a citizen, a business or another public agency” (my emphasis).

D2. CPSV-AP_IT: “a public service is *any* mandatory or discretional act performed by or on behalf of a public agency for the benefit of a citizen or a business” (my emphasis).

D1 contains *two* mutually *incompatible* definitions, that convey two important intuitions:

(1) *a service exists whether it is used or not*.

(2) *a service is NOT a single act*

Searching for a service

- Services should be ***searched*** *for*
  - *Is there a fire service here (and now)?*
- Services should be ***counted***, and located in space and time:
  - *how many restaurants are located in the Province of Trento?*
- Services should be ***evaluated*** on the basis of *how* they are delivered
- We do not search for an ***action***… but for somebody who ***commits*** on it
  - The implementation process can change…
  - The availability can change…
  - …still the service exists, as long as the commitment is there

Services are not actions
(*applications of a specific competence*)

- Should an action of *passing the salt* count as a service?…
- Doesn't account for a basic intuition behind "service": ***being at your disposal*** (see the ancient meaning of ***servus***)
- It is not so much the specific application of competence which counts as a service, but rather the ***commitment*** to perform some kinds of actions:
  - Example: a telephone company. We say it provides ***one*** service, even if we make multiple phone calls

We need a ***mesoscopic level*** definition of service

- European Service Directive: "'service' means any self-employed economic ***activity***, normally provided for renumeration". (Article 4)

The *mesoscopic* perspective
services as activities based on *commitments*

- ***Action-based***: *passing the salt* is a service
(application of competences - microscopic perspective)

- ***Commitment-based***: a previous commitment is needed
(economic activity - mesoscopic perspective)

The ***mesoscopic perspective*** is the one that accounts for the ordinary, business-level notion of service

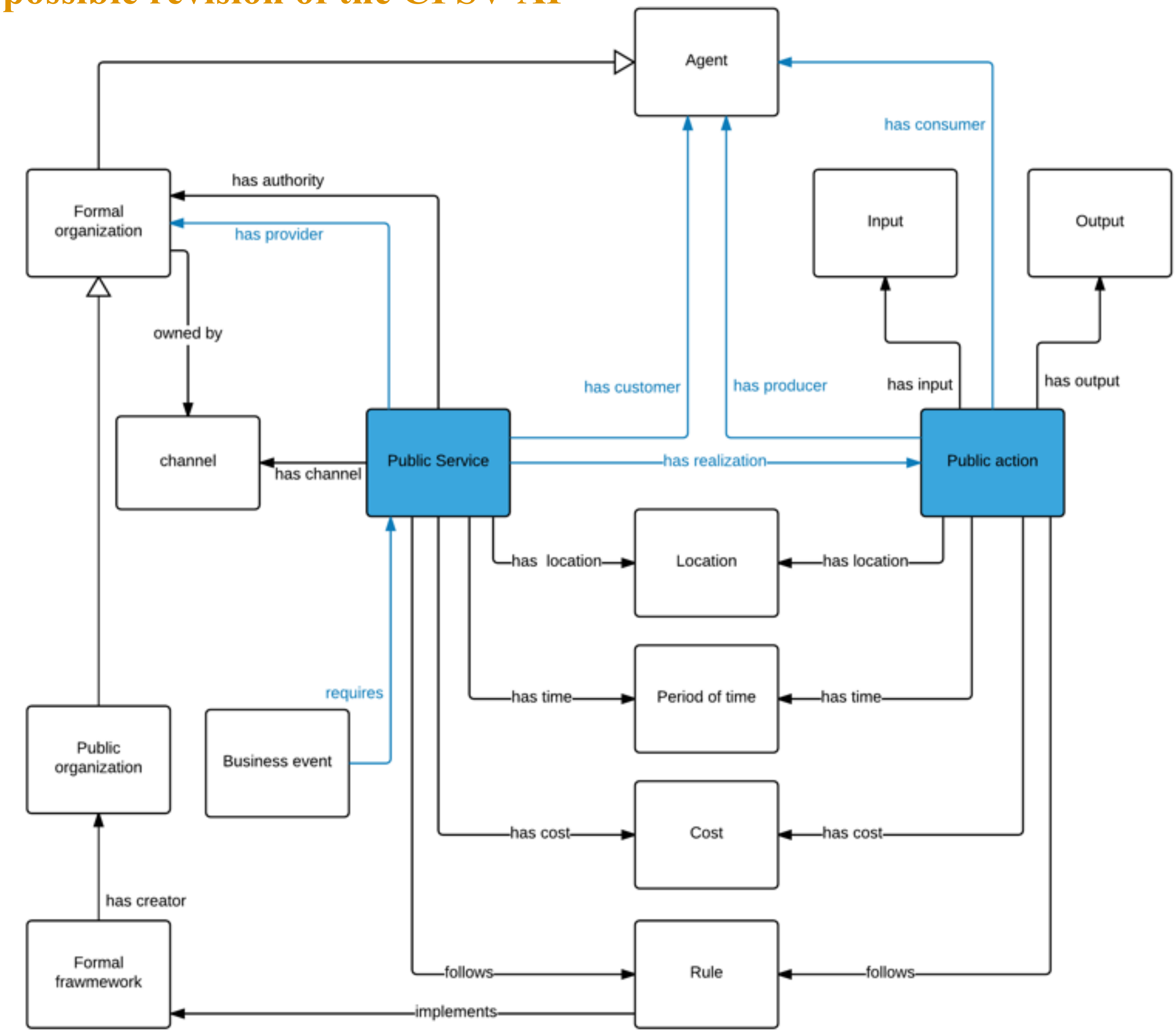
Services are based on *commitments*

- How can you tell that a service is ***present***, here and now?
  - ...if somebody is ***committed*** to do something here and now
  - (a service can be present without being *active*...)

service commitment

- a ***provider*** guarantees the execution of some ***type of actions***
- executed by a ***producer***
- on the occurrence of a certain ***triggering event***,
- in the interest of a ***customer***
- upon prior agreement with the customer
- according to a certain specification (***service description***)
- which constraints the *way* service actions will be performed (***service process***)
- a commitment ***state*** starts with a commitment ***act***

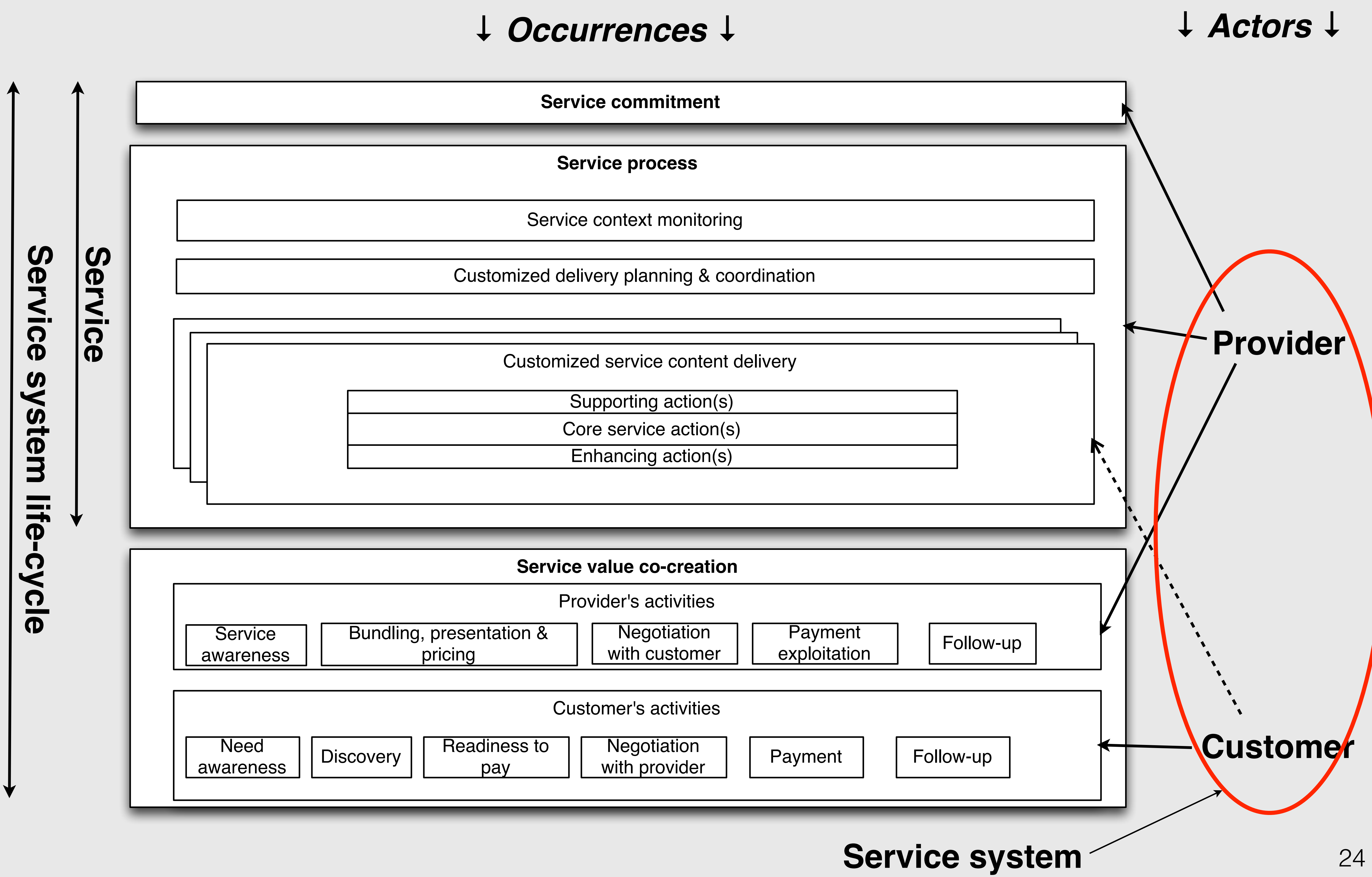
A possible revision of the CPSV-AP



The need for a global model of services

- Current (Web) service models focus on the ***external interface***, advocating its strict separation from the internal view
- Yet, business applications need to specify
  - ***how*** the service is performed at the business level, referring to *internal* details whose nature varies a lot from service to service
  - ***when*** the various processes involved in a service occur
- Business applications need to ***monitor*** and ***evaluate*** services quality with respect to their actual impact on the whole ***service system***
- Service Level Agreeements need to refer both to ***internal*** and ***contextual*** details
- Need to look ***inside the box*** and ***out of the box***...

Service, service process, and their *participants*



Generic commitment

- Towards ***potential customers***
- Directed to a ***service description***, that is intended to facilitate service ***discovery***
- It is a state resulting from an act that is in a sense ***uni-directional***, as it does not imply an explicit agreement
- It is ***not*** strictly speaking ***binding*** for the provider. Until there is at least one specific, actual customer, the provider cannot be directly sanctioned for not having respected his or her commitment
- So not honoring a generic commitment can obviously result in a loss of credibility or reputation, but not in a direct sanction

Specific commitment

- Specific commitment is a state that follows a ***mutual agreement*** between provider and customer, most of the times consisting in the signature of a ***contract***.
- The contract describes how the service will be implemented for the individual customer, so normally it specifies the service description in more detail.
- Two relevant differences with the generic commitment:
  - the contract commits ***both parties***, not only the provider
  - It has a greater ***binding power***, whose ***violation*** usually entails a ***sanction***, that may be described in the contract itself.

Looking inside a service system: the main actors

- ***Service Provider*** is the person or authority who commits to have the service executed
- ***Service Producer*** is the person or organization that actually performs the actions constituting the delivery of the service. Provider and producer may coincide, but this is not always the case.

- ***Service Customer*** is the one that requests the service and then negotiates for its customized delivery
- ***Service Consumer*** is the direct beneficiary of the service

- Customer and consumer may coincide, but not necessarily
- Consumer and producer may also coincide, in very particular situations

Describing a service: Mapping thematic roles to service roles

- Commitment’s agent
- Commitment’s beneficiary

- Core-action’s agent
- Core-action’s beneficiary
- Core-action’s patient
- Core-action’s instrument

- Service provider
- Service customer
- Service producer
- Service consumer
- Service object

Service as a case of systematic polysemy

- “The Bank is around the corner and gives good advice on sub-prime loans” (*Physical Object x Organizational Agent*)
- “The Book is heavy to carry but is easy to understand” (*Physical Object x Abstract Information Content*)
- “These ducks laying eggs in my backyard are common around Europe” (*Physical Object x Kind*)
- **“Dr.Smith’s Dental Service was fast but expensive” (*Service Delivery x Service Offering*)**

Commitment-based Service Modelling: the progress so far

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