

A Conceptual Framework for the Description of Place Identifiers

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Understanding of “Place”

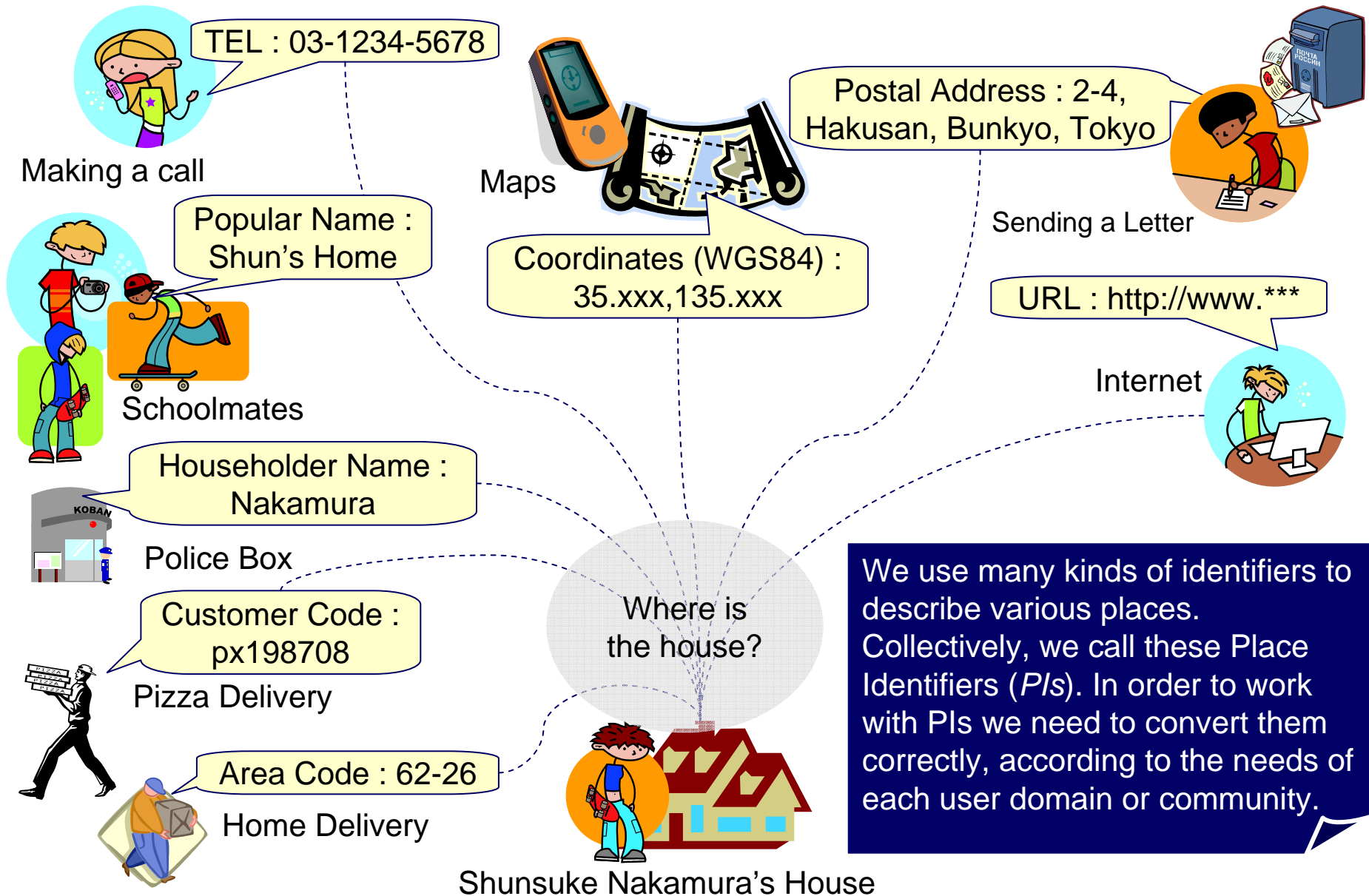


- Often means something different to each community
- Many different ways to represent “Place”
- Some are exact and are linked with map related reference systems – coordinates, GPS
- Some are hierarchical, classifying a place in order to reference it – addresses, postcodes,
- Others are more descriptive -- “over there”, “near that intersection”
- The same “Place” is often required by different communities, sometimes unaware of each others requirements

Thus, each community of users have their own:

- methodologies for defining, referencing and managing place information
- requirements for using and sharing place information

Some Representations of Place





In the simplest terms, what is a Place Identifier (PI)?

- A PI can be defined as an *SRS* (spatial reference system) and an *instance* (value string)
 - **SRS:Instance**
- The overall conceptual structure is very simple
- The content of the *instance* is flexible and unconstrained, allowing for each community to define and use the encodings of their choice

These two points are important and will allow for widespread adoption of the PI concept and propagation of other Place Identifiers

- The *SRS* is defined by each community
- An *SRS* is ***unique across communities***
- An *instance* is ***unique within each community***
- Each PI ***may be similar or even identical across communities***
- Each community maintains their own PIs

Place Identifier Examples

- Simple examples

WGS84:40.xxxx,139.xxxx,25.xx

BLDGID: BJP13103-10A6893394

POSTCODE: 105-0011

PRKLT: JPARK13103L095

SBMJPN:40.xxx,139.xxxx-UID09A334109

- Well defined examples

RFC4151 based tag scheme encoding

tag:bldgmt.tokyo.go.jp,2008-03-18:pi:13103-2454543-A1-6893394-12B

URI Schema Name Spatial Reference System (SRS) Temporal Qualifier PI Instance (Value String)

Place Identifier Examples, contd.

Bachus-Naur Form (BNF) simple tag scheme encoded instance

```
[1] Address ::= Value
[2] Value ::= Metropolis and prefecture.Name((Special ward.Name((Lot number.Name Lot number.Supplementary
number?)|(Town.Name((Lot number.Name Lot number.Supplementary number?)|(Block number.Name(House number.Name
House number.Road name?)|(House number.Name House number.Road name?))|(City.Name Ward.Name?((Town.Name((Lot
number.Name Lot number.Supplementary number?)|(Block number.Name(House number.Name House number.Road
name?)|(House number.Name House number.Road name?))|(County.Name(Town.Name|Village.Name)((Lot number.Name
Lot number.Supplementary number?)|(Town.Name((Lot number.Name Lot number.Supplementary number?)|(Block
number.Name(House number.Name House number.Road name?))|(House number.Name House number.Road name?)))
```

Encoding rule (Instance)

The unit names such as "street number", "house number", "number", etc. which are included in street or lot number, block number, house number are abbreviated by "- (half width hyphen)". Abbreviate the last "house number", "number". For numerical values use the half width Arabic numbers.

pi:addBnf.dpc.jipdec.jp (Tokyo-to, Minato-ku, Shinbashi 2-13-8)

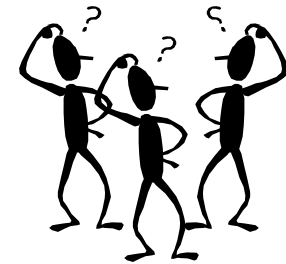
XML encoded example containing multiple PI instances

This example is based on an XML Schema for encoding Place Information inside of a building

```
<PI_Instance rs="pi.gis.mori-bldg.jp">
  <Fc>
    <Blg name="Roppongi Hills">
      <Rdg name="Mori Tower">
        <Lot name="General Information">
          <Rm name="Roppongi Hills Tour Counter"/>
        </Lot>
      </Rdg>
    </Blg>
  </Fc>
</PI_Instance>
```

Is that all?

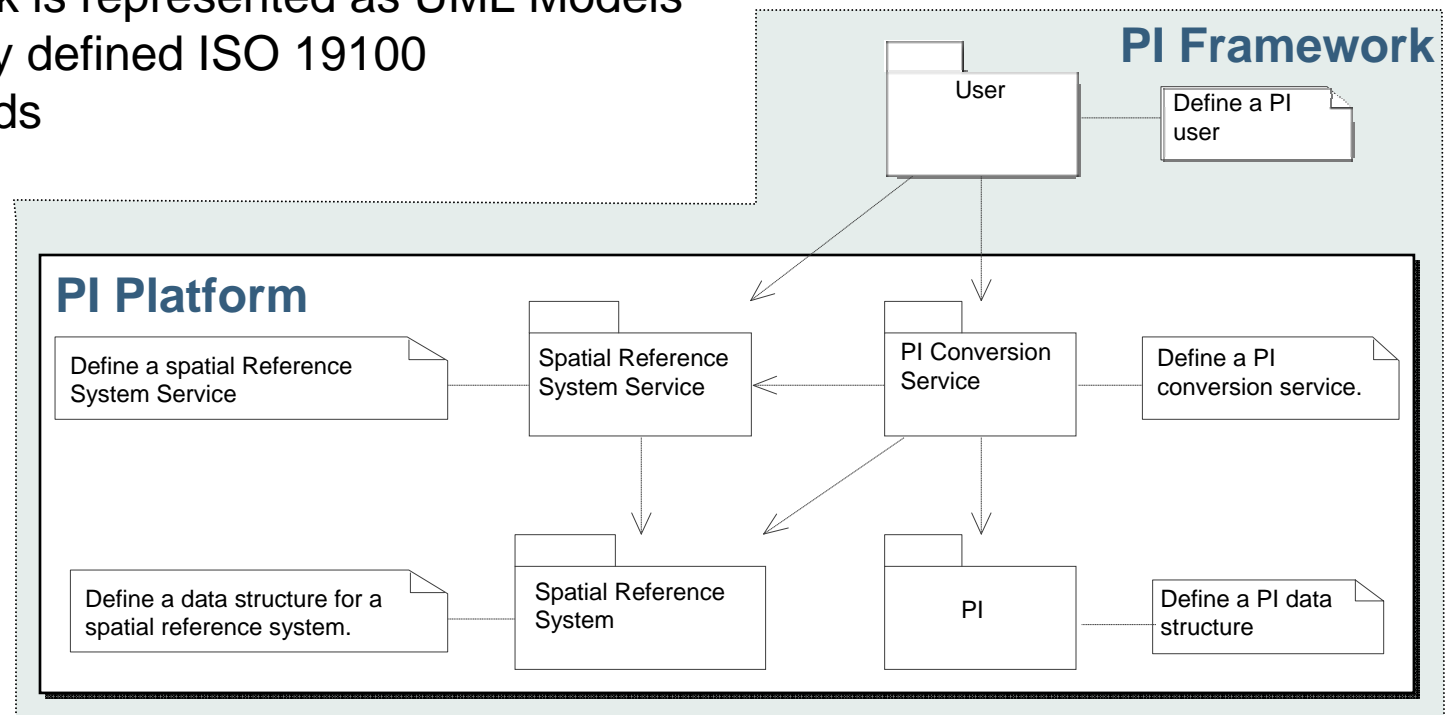
- Some of you may be wondering, “*Is this all a PI is?*” How can a construct so simple be used to represent and share Place Information?



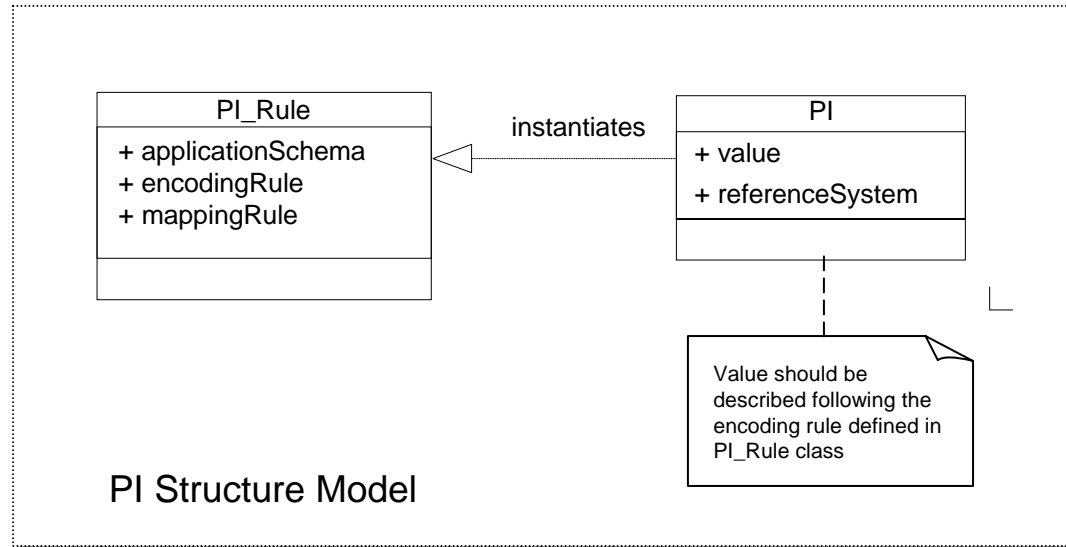
There is more to the PI concept, let me show you...

PI Framework

- The PI Platform consists of a set of **services** and **interfaces**
- Services defined by the PI Platform provide the necessary operations for working with the PIs
- These services and interfaces define methods for the:
Registration, Management, Discovery, Conversion, and Exchange
of the Place Identifiers
- The PI Framework is represented as UML Models
- Built on previously defined ISO 19100 series standards

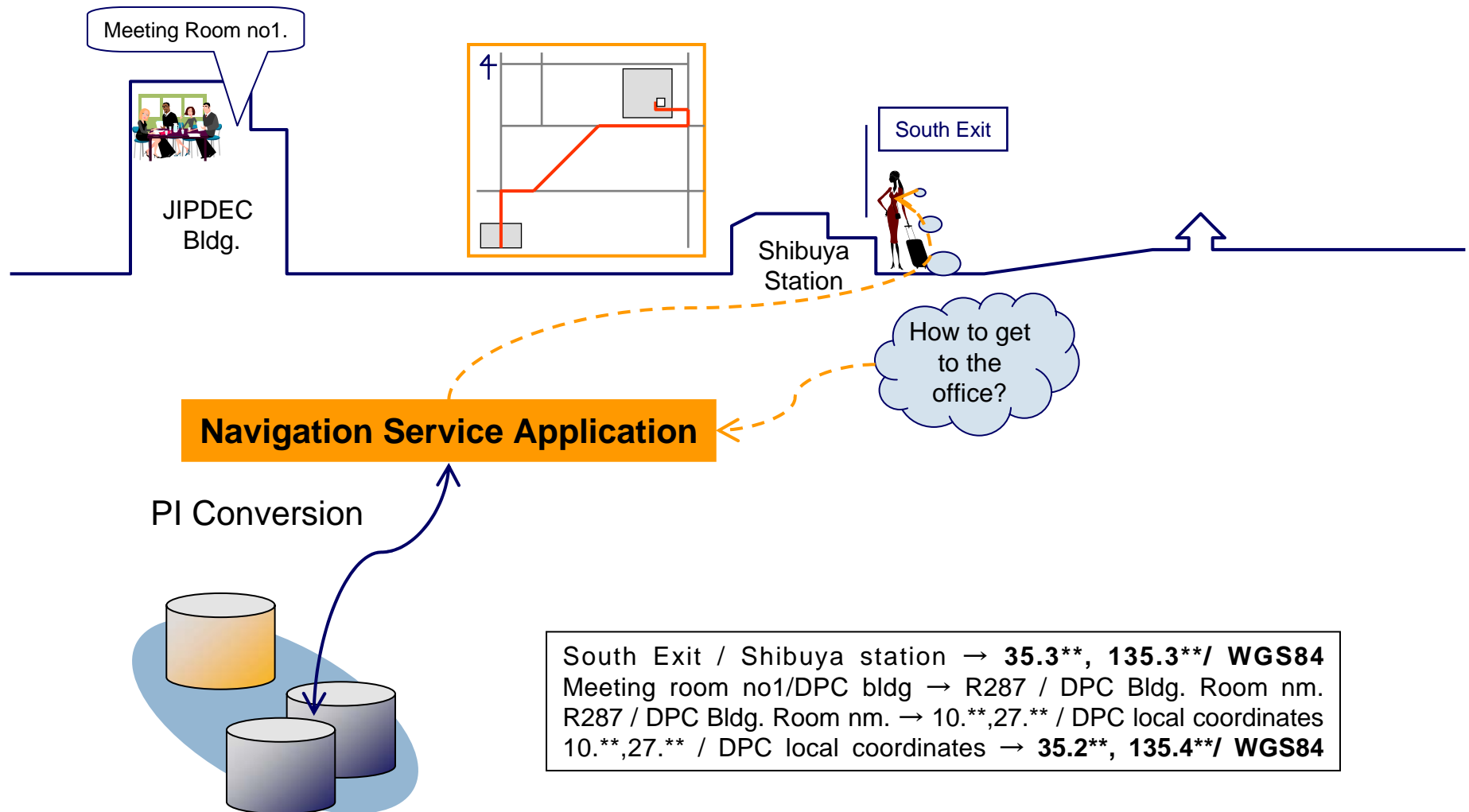


PI Structure UML



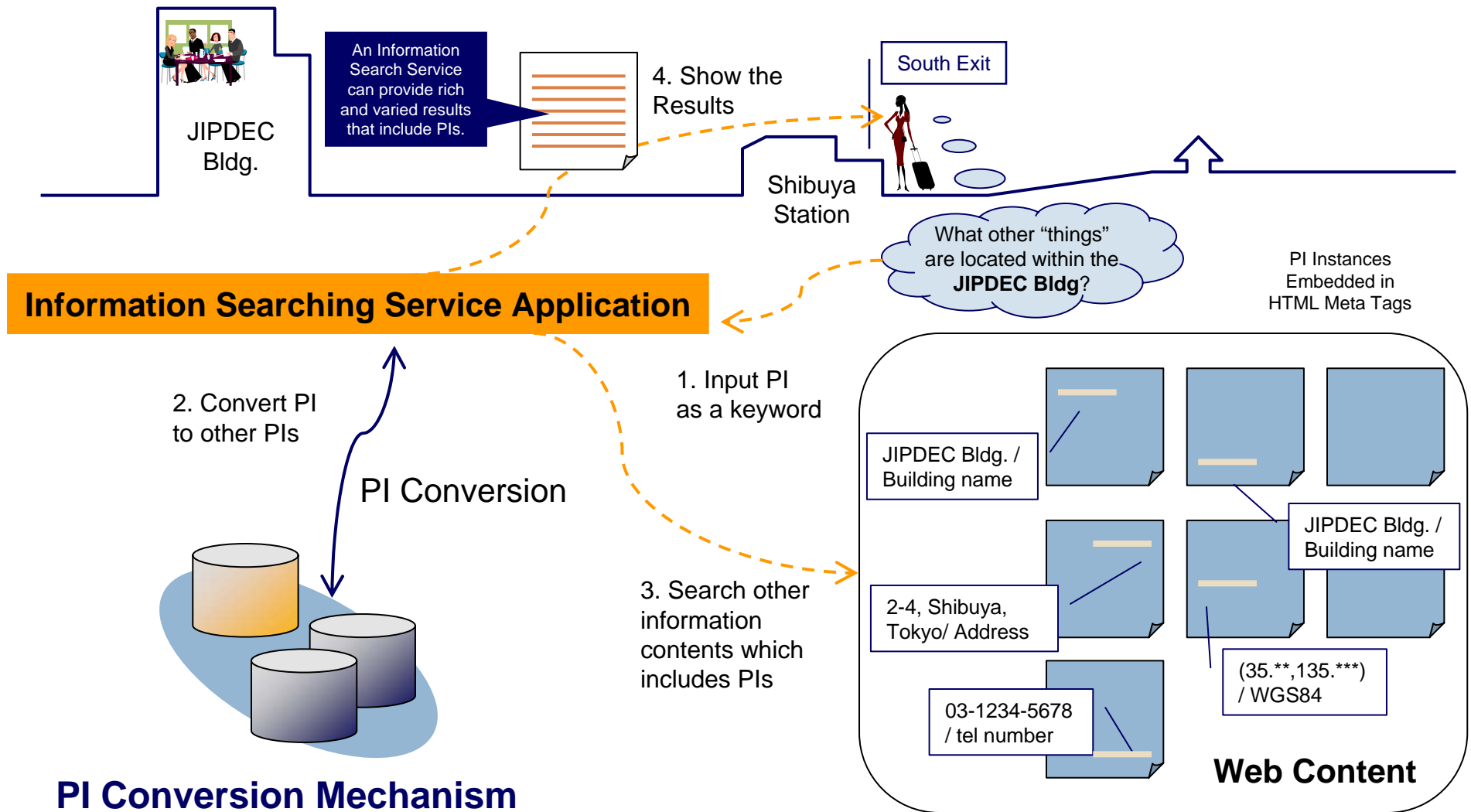
- UML diagram for the Place Identifier from DNWIP N2413
- More UML diagrams are shown in N2413

Putting PI Concepts to Work



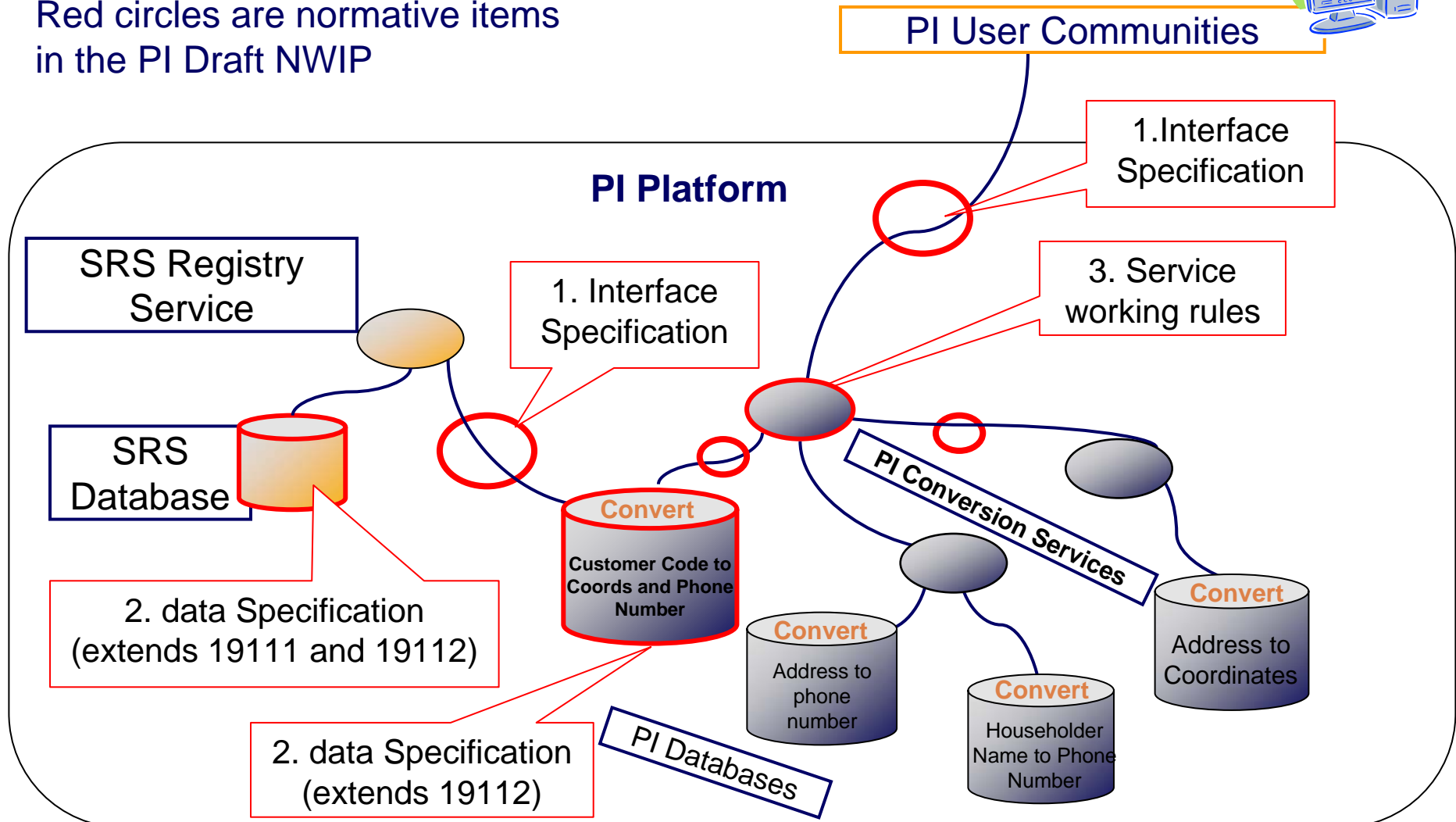
PI Conversion Mechanism

Putting PI Concepts to Work, contd.

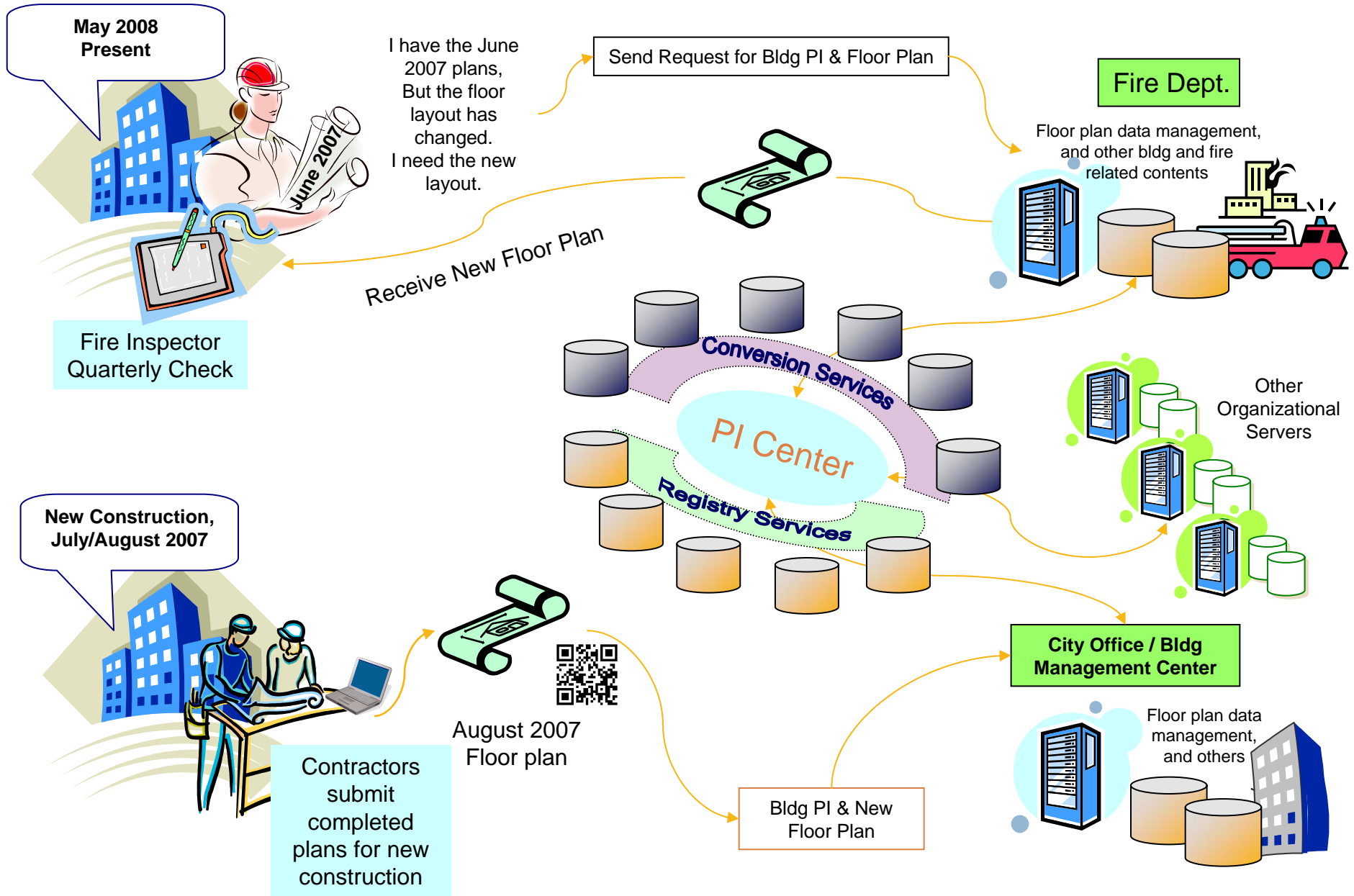


Standardization items of the PI Draft NWIP

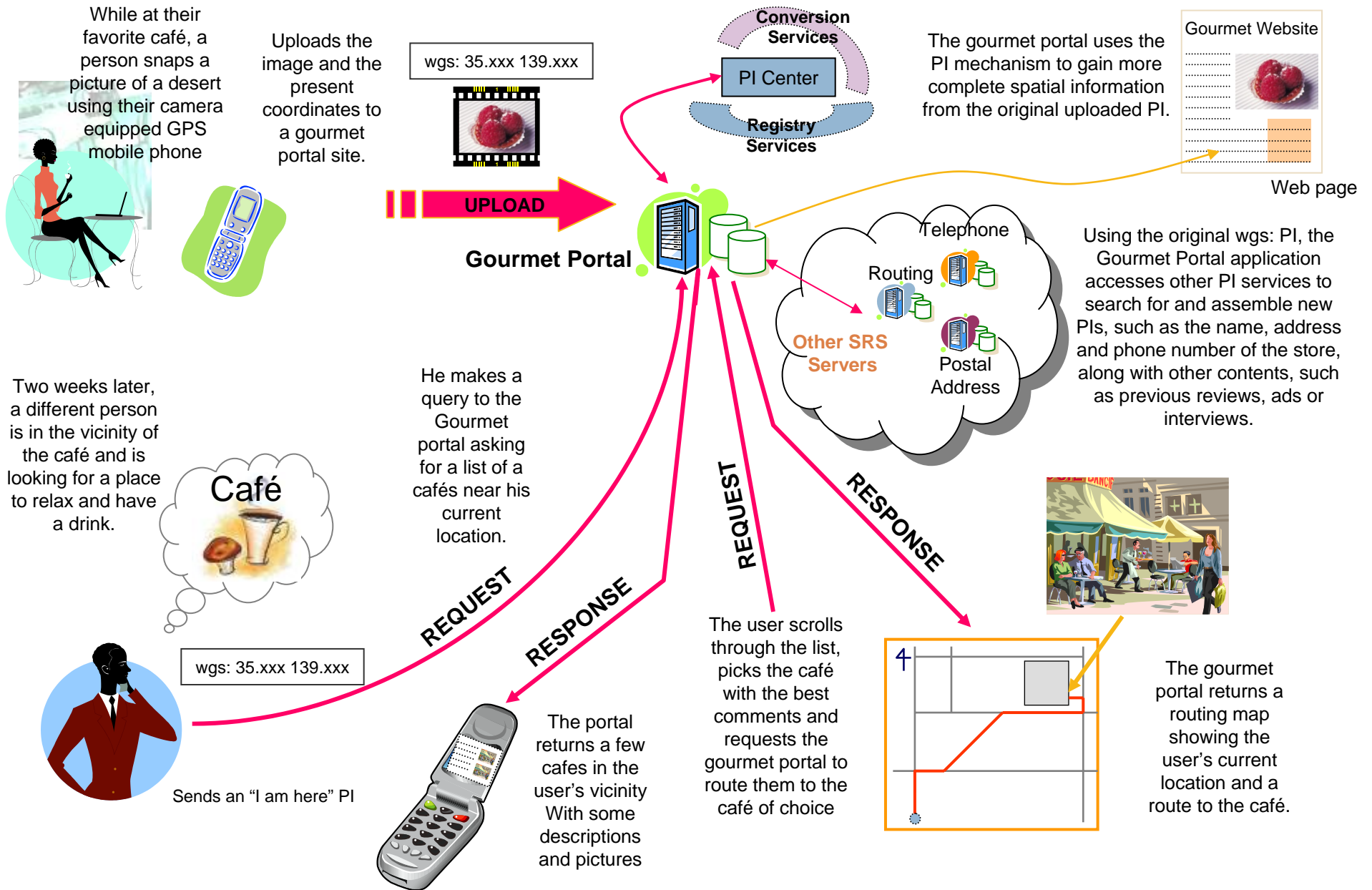
Red circles are normative items in the PI Draft NWIP



Extended Use Case Example – Fire Regulation Checking



Extended Use Case Example – Spatial Bookmark Service



Where things stand with the PI

- January – March 2008, PI Specification Prepared in ISO Format and NWIP written
- Late March 2008, Submission to TC211 as Draft NWIP (N2413)
- May 2008, Receipt of MB Comments (N2440)
- Late May 2008, Address Standards Workshop & ISO TC211 26th Plenary in Copenhagen

Thoughts about an International Address Standard

- The theme of the workshop is very current and important
- Addressing systems, when in place, are deeply related to each country's history, culture and legal systems.
- Due to the afore mentioned properties, an address standard would be abstract at most, thus interoperability would be low.
- Many countries, especially those with non-western writing systems will need to be involved, preferably from the early stages of this work.
- The feasibility of creating an International Address Standard will need to be examined more, but this workshop will provide a good place to start.

How the PI relates to a future International Address Standard

- The design of the PI Framework is suitable for handling what ever type of address format which would be based on an International Address Standard
- The services and interfaces of the PI Framework will enable linkages between the International Address Standard and any of the other PI communities
- A XML schema for encoding of Japanese Addresses was created as an example during the domestic development of the Place Identifier Specification. Due to the domestic nature of this example, it did not appear in the PI draft NWIP, however it could be made available, in English, if there is interest from the participants of this workshop.