

# MORFEO **DDR Simple API** Implementation

<http://forge.morfeo-project.org/ddr-ri>



## DDR-RI

# Implementation of the DDR Simple API



FIT-350405-2007-1

FIT-350401-2006-2

José M. Cantera Fonseca  
[jmcf@tid.es](mailto:jmcf@tid.es)

and

Cristian Rodríguez  
[crdlc@tid.es](mailto:crdlc@tid.es)



# DDRs

- In the desktop Delivery Context, the number of different Properties that affect the usability is limited but in mobile Delivery Context this number is higher and affect the usability of the resulting content.
- Historically, it has been difficult or impossible to upgrade Web browser software on mobile devices or to add support for features not present in the Web browser originally shipped with the device.
- **DDRs** have become **essential components** of development of content targeted at the mobile Delivery Context.
- Screen size, markup language support or image format support information is stored in “**Device Description Repositories**” (DDRs).

# DDR Simple API (I)

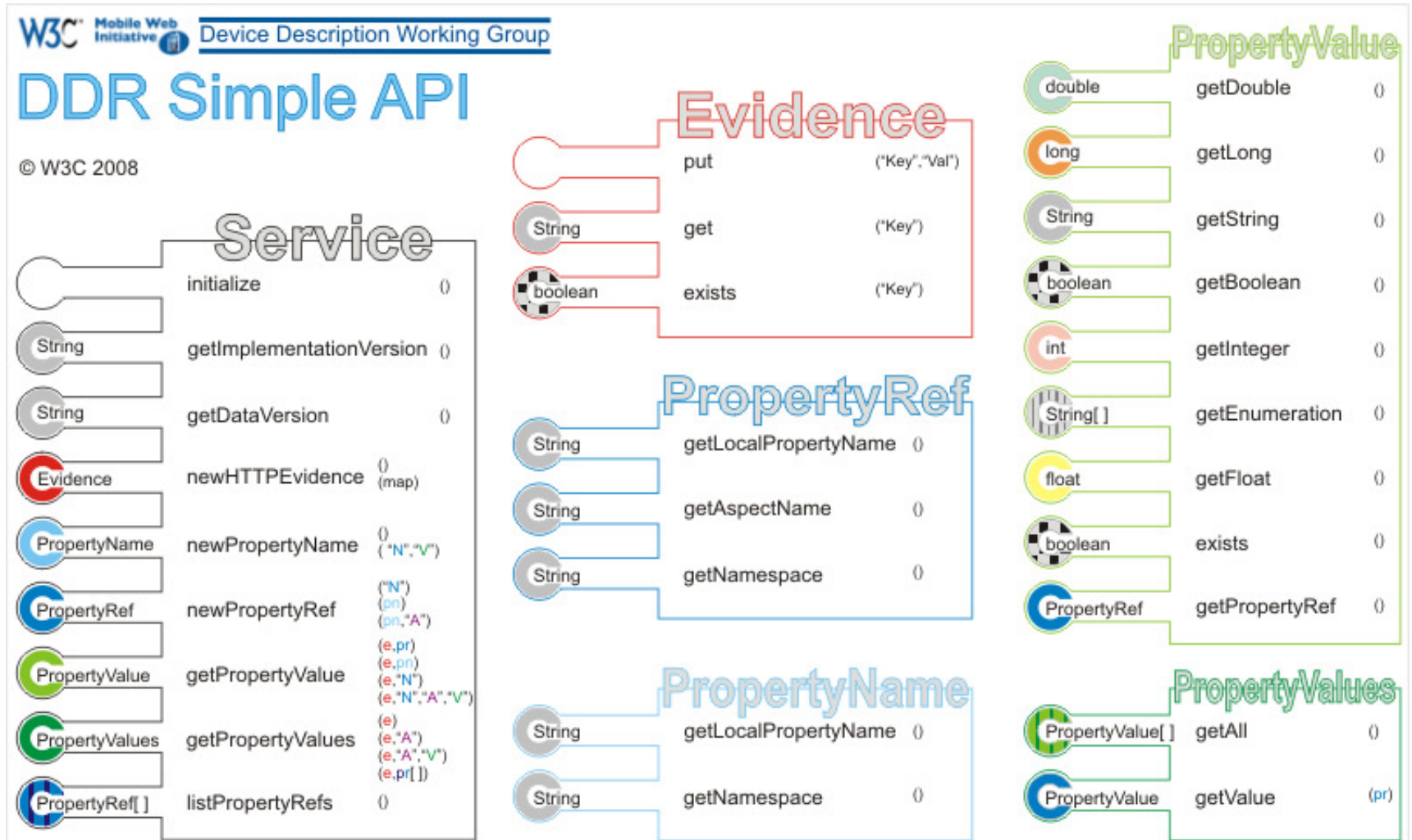
- **Minimal API** for retrieving device properties needed for content and application adaptation.
  - <http://www.w3.org/TR/DDR-Simple-API/>
- Promote the development of Web content that adapts to its Delivery Context.
- From the point of view of the DDR Simple API
  - **Aspect:** represents a category of hardware or software that participates in delivering a Web experience.
  - **Property:** characteristic of an aspect that can affect the Web experience.
  - **Vocabulary:** set of properties and the aspects with which the properties are associated

# DDR Simple API (II)

- **Interfaces:**

- **Evidence:** to allow it to determine the Delivery Context.
- **PropertyName:** the name of a Property together with its namespace.
- **PropertyRef:** the name of a Property together with its Aspect together with the namespace they are in.
- **PropertyValue:** models a PropertyRef together with its value.
- **PropertyValues:** a set of PropertyValues.
- **Service:** the core of the DDR Simple API.
- **ServiceFactory:** factory for instantiating Service with the supplied default namespace and configuration.
- Several exceptions together with its codes (DDRException, SystemException,...)

# DDR Simple API (III)



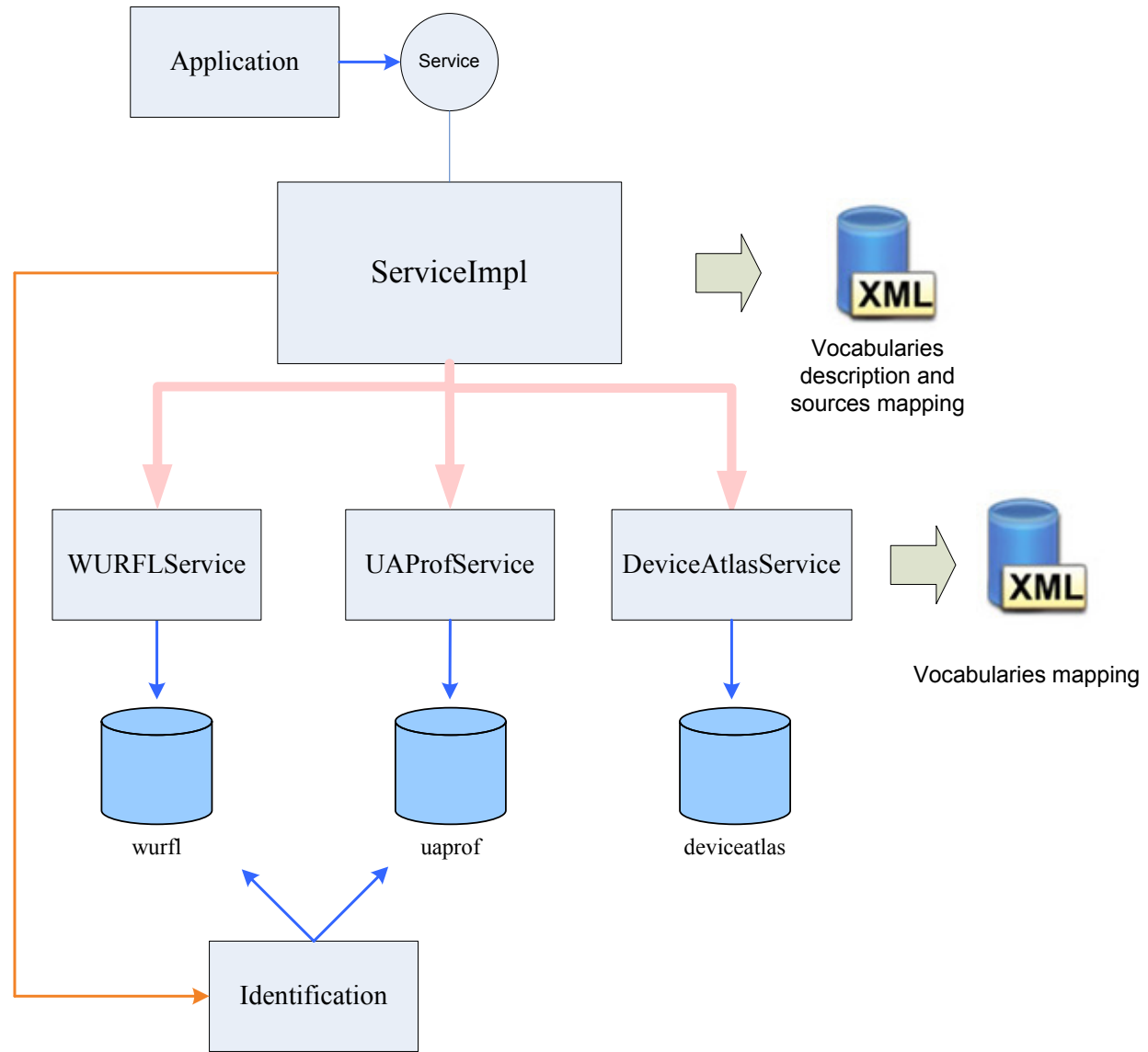
# DDR Core Vocabulary

- **Essential vocabulary** of properties **for adaptation** in the Mobile Web environment
  - <http://www.w3.org/TR/2008/NOTE-ddr-core-vocabulary-20080414/>
  - Not intended to represent an exhaustive set of properties for content adaptation
  - DDR Implementations might require additional properties and vocabularies
- This vocabulary defines two aspects:
  - device: apparatus through which user can interact with de Web (default aspect)
  - webBrowser: a User Agent for Web pages
- Properties: vendor, model, version, displayWidth, inputDevices, ...

# Implementation Description

- Early implementation of W3C's DDR Simple API Specification
- The implementation is based on WURFL, UAProf and DeviceAtlas data sources.
- Supported vocabularies:
  - [W3C's Core Vocabulary](#)
  - [MyMobileWeb's Vocabulary](#) (used by MyMobileWeb to adapt content and applications)
  - [WURFL Vocabulary](#)
- It is flexible enough to incorporate other data sources if available.
- MyMobileWeb is integrated with the API implementation.
  - The first open source adaptation tool that use this new API

# Architecture Overview





# Vocabulary Description

- DDR Core Vocabulary Description

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE VocabularyDescription SYSTEM "vocabulary-description.dtd" [
  <!ENTITY DEVICE "device">
  <!ENTITY WEBBROWSER "webBrowser">
  <!ENTITY ALLASPECTS "&DEVICE;; &WEBBROWSER;">
]>

<VocabularyDescription target="http://www.w3.org/2008/01/ddr-core-vocabulary">

  <Aspects>
    <Aspect name="&DEVICE;" />
    <Aspect name="&WEBBROWSER;" />
  </Aspects>

  <Properties>

    <Property name="vendor" datatype="xs:string"
      aspects="&ALLASPECTS;" defaultAspect="&DEVICE;" />

    <Property name="model" datatype="xs:string"
      aspects="&ALLASPECTS;" defaultAspect="&DEVICE;" />

    <Property name="displayWidth" datatype="xs:nonNegativeInteger"
      aspects="&ALLASPECTS;" defaultAspect="&DEVICE;" />

    <Property name="displayHeight" datatype="xs:nonNegativeInteger"
      aspects="&ALLASPECTS;" defaultAspect="&DEVICE;" />

    <!-- More... -->

  </Properties>

</VocabularyDescription>
```

# Vocabulary Mappings

- DDR Core Vocabulary - WURFL

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE VocabularyMappings SYSTEM "vocabulary-mapping.dtd"[
  <!ENTITY DEVICE "device">
  <!ENTITY WEBBROWSER "webBrowser">
  <!ENTITY ALLASPECTS "&DEVICE;, &WEBBROWSER;">
]>

<VocabularyMappings source="WURFL" target="http://www.w3.org/2008/01/ddr-core-vocabulary">

  <TargetProperty name="vendor">
    <Match aspect="&DEVICE;">
      <SourceProperty name="brand_name" datatype="xs:string" />
    </Match>
  </TargetProperty>

  <TargetProperty name="displayColorDepth">
    <Match aspect="&DEVICE;">
      <SourceProperty name="colors"
        datatype="xs:nonNegativeInteger" decorator="org.morfeo.ddr.Color.getDepth"/>
    </Match>
  </TargetProperty>

  <TargetProperty name="inputModeSupport">
    <Match value="useFormatAttribute" aspect="&WEBBROWSER;">
      <SourceProperty name="xhtml_format_as_attribute" datatype="xs:boolean" />
    </Match>
    <Match value="useWCSS" aspect="&WEBBROWSER;">
      <SourceProperty name="xhtml_format_as_css_property" datatype="xs:boolean" />
    </Match>
  </TargetProperty>

  <!-- More... -->

</VocabularyMappings>
```

# Vocabulary Sources

- DDR Core Vocabulary Sources

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE VocabularySources SYSTEM "vocabulary-sources.dtd"[
  <!ENTITY DEVICE "device">
  <!ENTITY WEBBROWSER "webBrowser">
]>

<VocabularySources target="http://www.w3.org/2008/01/ddr-core-vocabulary">

  <Sources>
    <Source name="WURFL" class="org.morfeo.devinfo.simple.WURFLService"/>
    <Source name="UAPROF" class="org.morfeo.devinfo.simple.UAProfService"/>
    <Source name="DEVICEATLAS" class="org.morfeo.devinfo.simple.DeviceAtlasService"/>
  </Sources>

  <Mappings>
    <TargetProperty name="vendor">
      <Match aspect="&DEVICE;">
        <PropertySource name="DEVICEATLAS" priority="1"/>
        <PropertySource name="WURFL" priority="2"/>
        <PropertySource name="UAPROF" priority="3"/>
      </Match>
      <Match aspect="&WEBBROWSER;">
        <PropertySource name="UAPROF" priority="1"/>
      </Match>
    </TargetProperty>

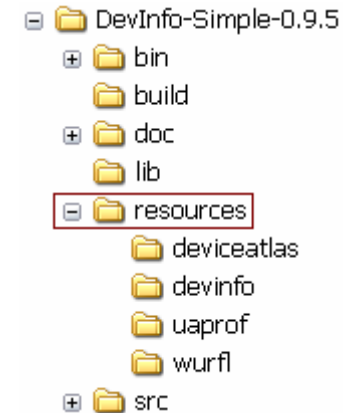
    <!-- More... -->

  </Mappings>

</VocabularySources>
```

# Configuration - Properties

- Path property
  - `org.morfeo.devinfo.simple.data`
- List of vocabularies to be loaded (comma-separated namespaces)
  - `org.morfeo.devinfo.simple.vocabularies` (optional)
- Default Service
  - `org.morfeo.devinfo.simple.Service.default` (optional)
  - `ServiceFactoryExt` extends `ServiceFactory`
    - `newDefaultService` (`defaultVocabulary, configuration`)



# Demonstration

- <http://mymobileweb.morfeo-project.org/ddr-ri>

## MORFEO DDR-RI Demonstration 0.9.4

### DDR Simple Service

Default Vocabulary: <http://www.w3.org/2008/01/ddr-core-vocabulary>

Supported Vocabularies:

All PropertyRefs the implementation knows about

### Evidence

Examples:

User-Agent:

X-Wap-Profile:

### Query Methods

**\* PropertyValues:**

Vocabulary IRI:  (= empty, default vocabulary)

Local Aspect name:  (= empty, combinations of property/aspect that are supported for all vocabularies)

**\* PropertyValue:**

Vocabulary IRI:  (= empty, default vocabulary)

Local Property name:  \*

Local Aspect name:  (= empty, default aspect of the property according to the property's vocabulary)

# References

- The implementation can be downloaded at:
  - <http://forge.morfeo-project.org/frs/download.php/343/DevInfo-Simple-0.9.5.tar.gz>
- Please send comments to:
  - [ddr-ri-develop@lists.morfeo-project.org](mailto:ddr-ri-develop@lists.morfeo-project.org)



# Thank you for your attention

<http://forge.morfeo-project.org/projects/ddr-ri>