

## ***IMPEX Configuration File***

The basic idea behind the global configuration file *impexconf.xml* (see Figure 1 an example) is to provide a **unique one-stop location for all relevant access information** of the IMPEX environment, i.e. tools and SMDBs that are part of the IMPEX system. The configuration file hence also defines the boundaries of IMPEX and it is assumed that every listed component is implementing the IMPEX protocol and all SMDBs expose the tree data using the **IMPEX data model**<sup>1</sup>.

The configuration data includes *names*, *IDs* and *descriptions*, as well as *DNS entries* and paths to the *xml* based *tree* data and *wsdl* files. Further also web links to detailed information on the respective component are included.

```
<?xml version="1.0"?>
<impexconfiguration xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://impex-fp7.oeaw.ac.at/xsd/configuration-
  1_0_0.xsd"
  xmlns="http://www.impex.org/2012/configuration.xsd">
  <database type="simulation" portal="true" id="impex://FMI">
    <name>FMI</name>
    <description>FMI Hybrid and MHD web archive</description>
    <dns>impex-fp7.fmi.fi</dns>
    <methods>/ws/Methods_FMI.wsdl</methods>
    <tree>/ws/Tree_FMI_HYB.xml</tree>
    <tree>/ws/Tree_FMI_GUMICS.xml</tree>
    <protocol>http</protocol>
    <info>http://hwa.fmi.fi/beta/login.php</info>
  </database>
  <tool>
    <name>AMDA</name>
    <description>
      Multi-mission data analysis tool for space plasma physics
    </description>
    <url>http://amda.cdpp.eu/</url>
    <info>http://cdpp-amda.cesr.fr/DDHTML/HELP/about.html</info>
  </tool>
  ..
  ..
```

**Figure 1:** A configuration example defining an SMDB and a tool node.

As shown in the example above, database nodes also include a *type* property that denotes simulation and observation databases as well as a unique *SPASE* compatible *ID* that ideally also can be used to address the respective *SPASE* component.

The corresponding **xml schema** that is also referenced in the example above, defines the valid structure of the configuration file. See **Figure 2** for a graphical representation of the xml schema.

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<sup>1</sup> For observational databases it is recommended to use the SPASE data model since it is naturally compatible with the SPASE based IMPEX data model.

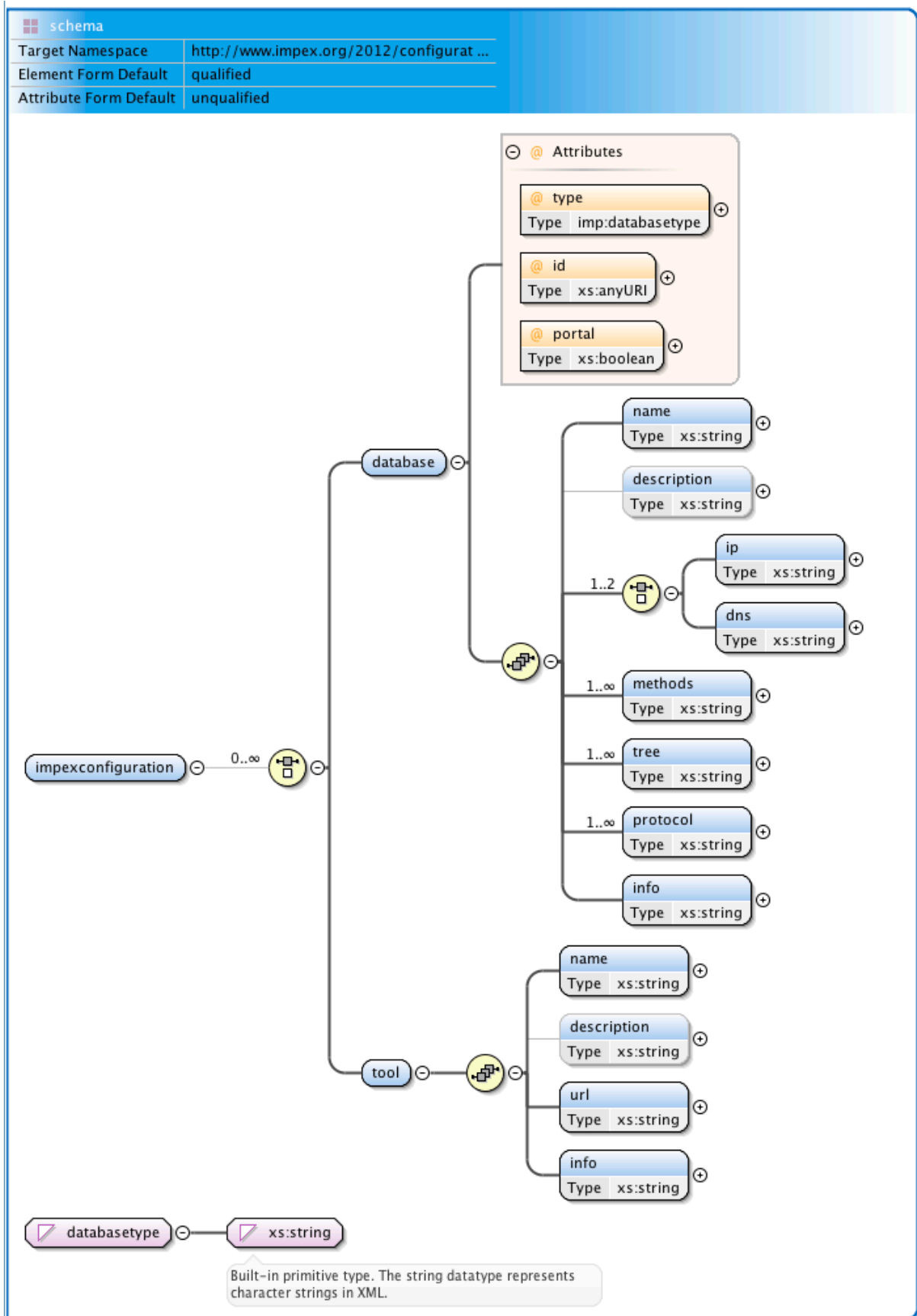


Figure 2: A graphical representation of the IMPEX configuration xml schema.

Any component of IMPEx as well as external applications must use the configuration file in order to **reliably access (other) components** of the system. The policy for accessing the configuration file is as follows:

- 1) Try to retrieve the configuration file from the agreed *unique* location in XML format (<http://impex-portal.oeaw.ac.at/config>) or alternatively in JSON format (<http://impex-portal.oeaw.ac.at/config?fmt=json>)
- 2) If the file is successfully accessed, use the information contained and cache the file.
- 3) If the file cannot be accessed for whatever reason, use the cached configuration file, and issue a warning (e.g. log entry ...).

The configuration information should always be accessed at the start of a user session (e.g. after log on to the web application or after start-up of a local application). Cached configuration data should be updated at least once per day if possible, i.e. the original configuration file is accessible.

It should be emphasized again, that there must only be one global location, where the original file is stored, so **uniqueness can be assured** and configuration updates must only be done at this **single location** and then propagate through the system automatically.