File System for

LINAC2 / DESY2 / PETRA3
and FLASH

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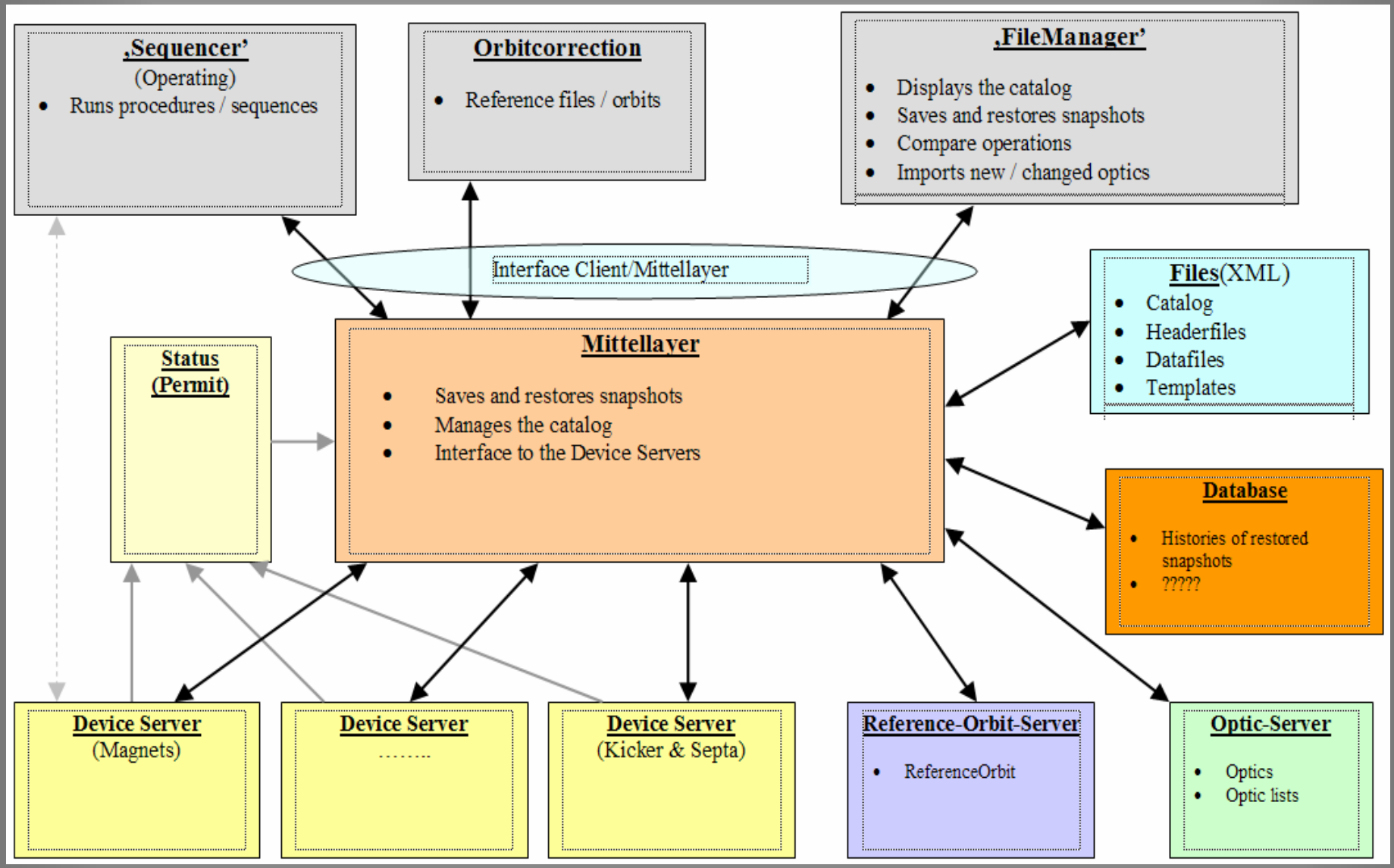
Overview


‚Sequencer'
(Operating)
Runs procedures / sequences
Orbitcorrection
Reference files / orbits
‚FileManager'
Displays the catalog
Saves and restores snapshots
Compare operations
Imports new / changed optics
Interface Client/Mittellayer
Files(XML)
Catalog
Headerfiles
Datafiles
Templates
Status
(Permit)
Mittellayer
Saves and restores snapshots
Manages the catalog
Interface to the Device Servers
Database
Histories of restored snapshots
?????
Device Server
(Magnets)
Device Server
……..
Device Server
(Kicker & Septa)
Reference-Orbit-Server
ReferenceOrbit
Optic-Server
Optics
Optic lists

Files

- **ascii and human readable**

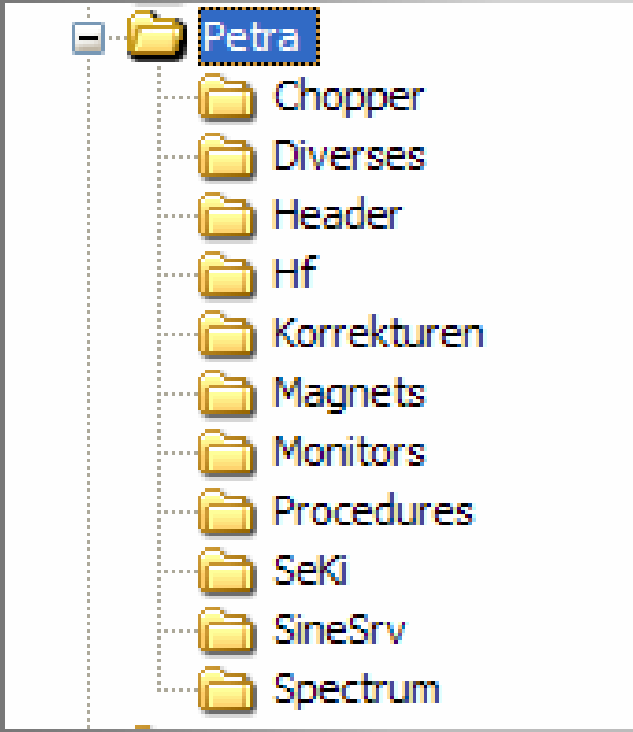
  → XML-Files
- **separated files for**

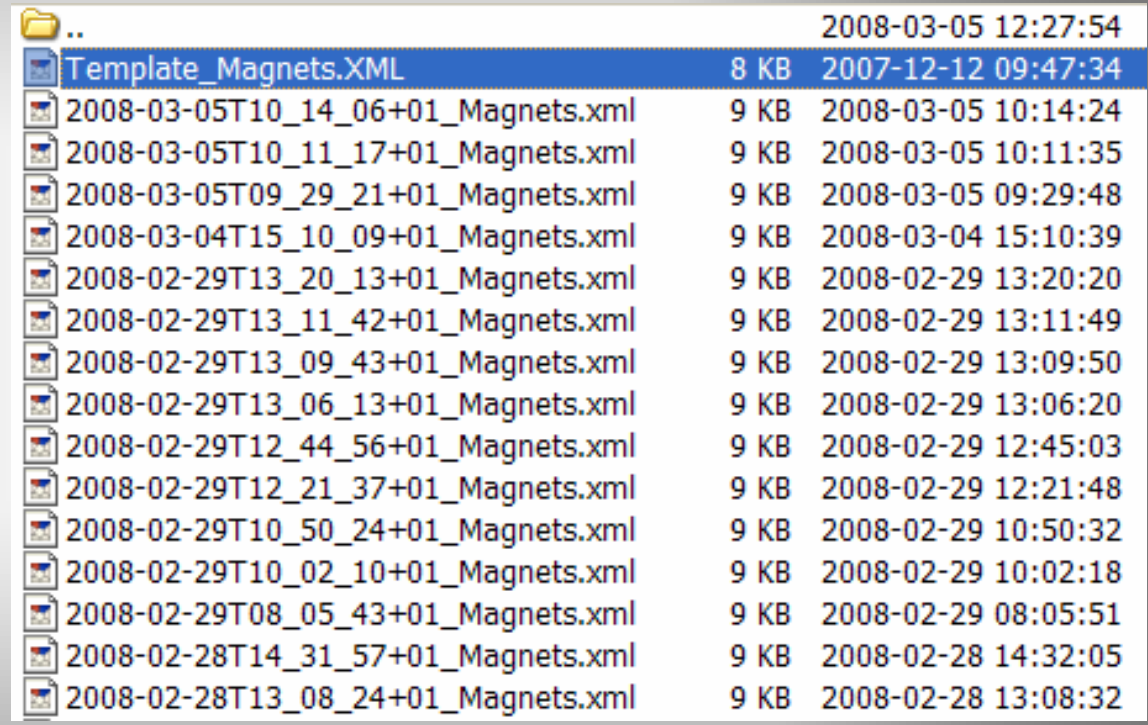
  magnets / RF / orbit / …..
- **file names**

  → 2007-03-28T09_38_48+02

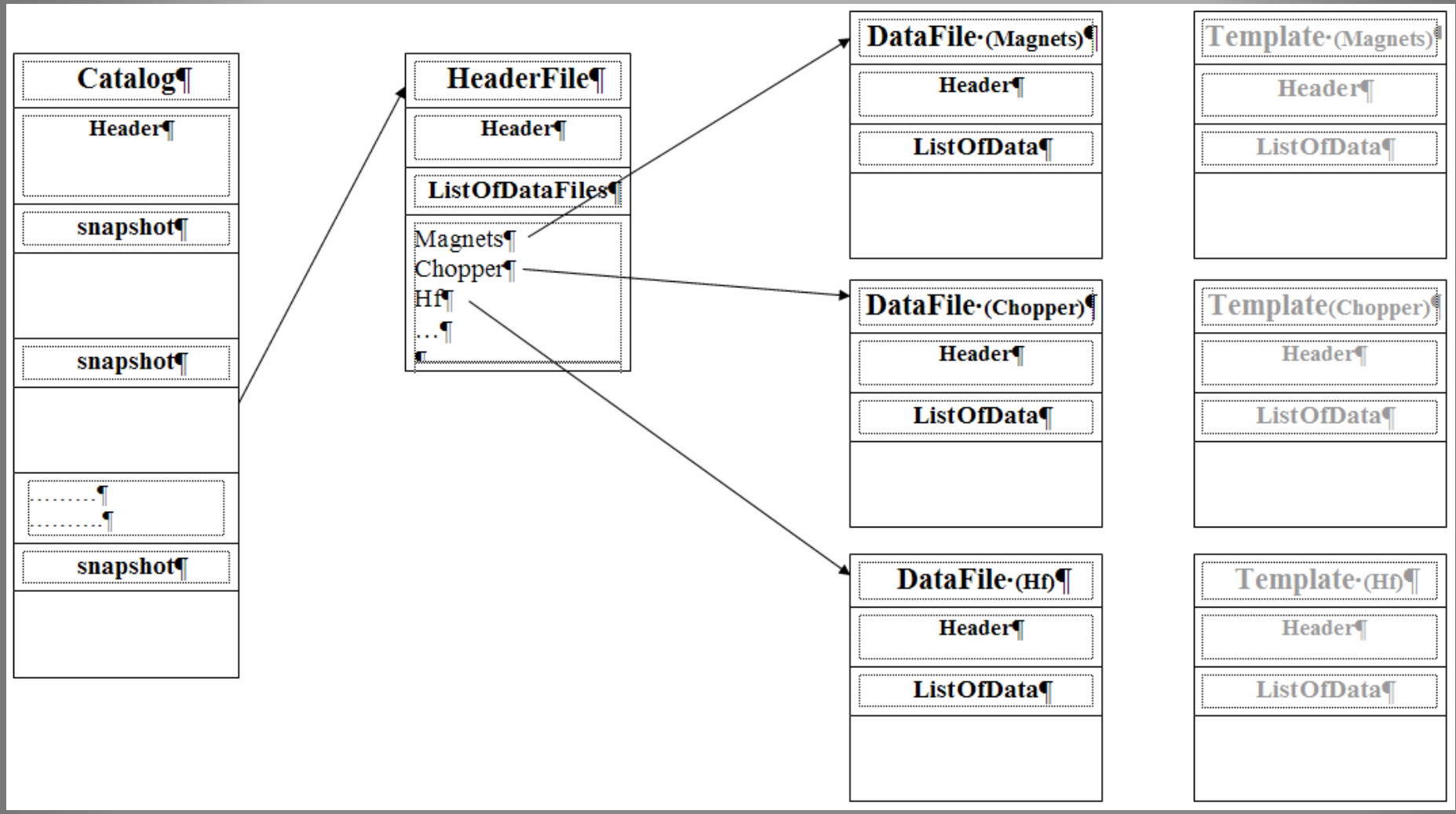
http://ferrari10.desy.de/mediawiki/index.php/Machine_status_file_format

Hierarchy of Files





Organisation of files



Catalog

```
<machineStatusFile>
  <header>
    <id>1970</id>
    <filename>Catalog_Petra</filename>
    <filetype></filetype>
    <facility>Petra</facility>
    <catalogId>1891</catalogId>
    <timestamp>2008-03-05T10:14:06+01</timestamp>
    <comment>beste Version?</comment>
  </header>
  <listOfSnapshots>
    ......
    <snapshot ToBeUsed="yes" UsedCount="0" UsedDate="2008-03-05T10:14:24+01">
      <id>1970</id>
      <timestamp>2008-03-05T10:14:06+01</timestamp>
      <category>Sequencer</category>
      <classification>0</classification>
      <filetype>temp</filetype>
      <machineVersion>0.0.2</machineVersion>
      <status>Fehler</status>
      <comment>File vom Client erzeugt</comment>
      <author>X. XYZ</author>
      <operator>abc</operator>
      <recommended>ist das wirklich zu empfehlen</recommended>
      <operationMode>AUSBetrE</operationMode>
      <gunStatus>0</gunStatus>
      <procedure>Betrieb</procedure>
      <energy particle="Unbestimmt" units="GeV" current="1.88E30">6.2876044E26</energy>
    </snapshot>
  </listOfSnapshots>
</machineStatusFile>
```

Header File

```
<machineStatusFile>
  <header>
    <id>1970</id>
    <filename>2008-03-05T10_14_06+01_Header</filename>
    <timestamp>2008-03-05T10:14:06+01</timestamp>
    <facility>Petra</facility>
    <category>Sequencer</category>
    <classification>0</classification>
    <filetype>temp</filetype>
    <machineVersion>0.0.2</machineVersion>
    <status>Fehler</status>
    <comment>File vom Client erzeugt</comment>
    <operator>abc</operator>
    <author>X. XYZ</author>
    <recommended>ist das wirklich zu empfehlen</recommended>
    <operationMode>AUSBetrE</operationMode>
    <gunStatus>0</gunStatus>
    <procedure>Betrieb</procedure>
    <energy particle="Unbestimmt" units="GeV" current="1.88E30">6.2876044E26</energy>
  </header>
  <listOfFiles>
    <dataFile>2008-03-05T10_14_06+01_Chopper</dataFile>
    <dataFile>2008-03-05T10_14_06+01_Magnets</dataFile>
    <dataFile>2008-03-05T10_14_06+01_Diverses</dataFile>
    <dataFile>2008-03-05T10_14_06+01_Spectrum</dataFile>
    <dataFile>2008-03-05T10_14_06+01_Korrekturen</dataFile>
    <dataFile>2008-03-05T10_14_06+01_SeKi</dataFile>
    <dataFile>2008-03-05T10_14_06+01_Monitors</dataFile>
    <dataFile>2008-03-05T10_14_06+01_SineSrv</dataFile>
    <dataFile>2008-03-05T10_14_06+01_Hf</dataFile>
  </listOfFiles>
</machineStatusFile>
```

Data File

```
<machineStatusFile>
  <header>
    <filename>2008-03-05T10_14_06+01_Chopper.xml</filename>
    <timestamp>2008-03-05T10:14:06+01</timestamp>
    <template>Template_Chopper_080304</template>
    <id>1970</id>
    <comment>File vom Client erzeugt</comment>
    <author>X. XYZ</author>
    <fileType>temp</fileType>
    <systemSet>Chopper</systemSet>
    <readDate>2008-03-05T10:14:03+01</readDate>
  </header>
  <listOfData>
    <dataGroup baseAddr="TEST/ChopPar/Ht" property="CurrentTarget">
      <data location="Ht" type="FLOAT" error="0" set="1">480.1099</data>
      <data location="T1G1" type="FLOAT" error="0" set="1">2.4005494</data>
      <data location="T2G2" type="FLOAT" error="0" set="1">-0.48010987</data>
      <data location="T2G1" type="FLOAT" error="0" set="1">2.4005494</data>
      <data location="T2G2" type="FLOAT" error="0" set="1">-0.48010987</data>
      <data location="HV1" type="FLOAT" error="0" set="1">0.4000916</data>
      <data location="HV2" type="FLOAT" error="0" set="1">0.024005493</data>
      <data location="BIAS" type="FLOAT" error="0" set="1">0.08001831</data>
    </dataGroup>
    <dataGroup baseAddr="TEST/ChopPar/Ht" property="VoltageTarget">
      <data location="Ht" type="FLOAT" error="0" set="1">320.07327</data>
      <data location="T1G1" type="FLOAT" error="0" set="1">3200.7327</data>
      <data location="T2G2" type="FLOAT" error="0" set="1">-3200.7327</data>
      <data location="T2G1" type="FLOAT" error="0" set="1">3200.7327</data>
      <data location="T2G2" type="FLOAT" error="0" set="1">-3200.7327</data>
      <data location="HV1" type="FLOAT" error="0" set="1">200045.8</data>
      <data location="HV2" type="FLOAT" error="0" set="1">320073.28</data>
      <data location="BIAS" type="FLOAT" error="0" set="1">104023.81</data>
    </dataGroup>
  </listOfData>
</machineStatusFile>
```

Template File

```
<machineStatusFile>
  <header>
    <id></id>
    <filename>Template_Chopper_080304.xml</filename>
    <comment></comment>
    <filetype>ScratchFile</filetype>
    <systemSet>Chopper</systemSet>
    <creationDate>2008-03-04T15:02:00+01</creationDate>
    <controlSystem>TINE</controlSystem>
  </header>
  <listOfData>
    <dataGroup baseAddr="TEST/ChopPar/Ht/" property="CurrentTarget">
      <data location="Ht" type="FLOAT" set="1"></data>
      <data location="T1G1" type="FLOAT" set="1"></data>
      <data location="T2G2" type="FLOAT" set="1"></data>
      <data location="T2G1" type="FLOAT" set="1"></data>
      <data location="T2G2" type="FLOAT" set="1"></data>
      <data location="HV1" type="FLOAT" set="1"></data>
      <data location="HV2" type="FLOAT" set="1"></data>
      <data location="BIAS" type="FLOAT" set="1"></data>
    </dataGroup>
    <dataGroup baseAddr="TEST/ChopPar/Ht/" property="VoltageTarget">
      <data location="Ht" type="FLOAT" set="1"></data>
      <data location="T1G1" type="FLOAT" set="1"></data>
      <data location="T2G2" type="FLOAT" set="1"></data>
      <data location="T2G1" type="FLOAT" set="1"></data>
      <data location="T2G2" type="FLOAT" set="1"></data>
      <data location="HV1" type="FLOAT" set="1"></data>
      <data location="HV2" type="FLOAT" set="1"></data>
      <data location="BIAS" type="FLOAT" set="1"></data>
    </dataGroup>
  </listOfData>
</machineStatusFile>
```

Conclusion

- Consol client
- Middle layer server
- File system / Sequencing