1 Install Doxygen

http://www.doxygen.nl/

2 Configure the configuration file (Doxyfile as default) as follows:

```
PROJECT_NUMBER         = $(PROJECT_VERSION)

# The INPUT tag is used to specify the files and/or directories that contain
# documented source files. You may enter file names like myfile.cpp or
# directories like /usr/src/myproject. Separate the files or directories with
# spaces. See also FILE_PATTERNS and EXTENSION_MAPPING
# Note: If this tag is empty the current directory is searched.

INPUT                  =

# The OUTPUT_DIRECTORY tag is used to specify the (relative or absolute) path
# into which the generated documentation will be written. If a relative path is
# entered, it will be relative to the location where doxygen was started. If
# left blank the current directory will be used.

OUTPUT_DIRECTORY       =

OUTPUT_LANGUAGE        = English

GENERATE_HTML          = NO
GENERATE_LATEX         = NO
GENERATE_XML           = YES
XML_PROGRAMLISTING     = YES
XML_NS_MEMB_FILE_SCOPE = YES
AUTOLINK_SUPPORT       = NO
IDL_PROPERTY_SUPPORT   = NO
RECURSIVE              = YES
ENABLE_PREPROCESSING   = NO
CLASS_DIAGRAMS         = NO
```

3 Add comments in the source code files as follows:

3.1 Examples in C/C++ files:

```
/*!
*  \file LoadVis.h
*  \brief Load a CASA Measurement Set in the DaliugeApplication Framework
*  \details We will build on the LoadParset structure - but use the contents
*  of the parset to load a measurement set.
*  \par EAGLE_START
*  \param gitrepo $(GIT_REPO)
*  \param version $(PROJECT_VERSION)
*  \param category DynlibApp
*  \par EAGLE_END
```

```
*/

/*!
 * \par EAGLE_START
 * \param[in] param/start_frequency/500M/Integer
 *       \~English the start frequency to read from\n
 *       \~Chinese  要读取的起始频率\n
 *       \~
 * \param[in] param/end_frequency/500M/Integer
  *           \~English the end frequency to read from\n
 *       \~Chinese  要读取的结束频率\n
 *       \~
 * \param[in] param/channels/64/Integer
 *       \~English how many channels to load\n
 *       \~Chinese  需要加载的通道数量\n
 *       \~
 * \param[in] port/config
 *       \~English the configuration of the input_port\n
 *       \~Chinese  输入端口的设置\n
 *       \~
 * \param[in] port/event
 *       \~English the event of the input_port\n
 *       \~Chinese  输入端口的事件\n
 *       \~
 * \param[in] local-port/event
 *       \~English the event of the input_port\n
 *       \~Chinese  输入端口的事件\n
 *       \~
 * \param[out] port/File
 *       \~English the file of the output_port \n
 *       \~Chinese  输出端口的文件\n
 *       \~
 *   \par EAGLE_END
 */
```

3.2 Examples in Python files:

```
/##
 # \par EAGLE_START
 # \param gitrepo $(GIT_REPO)
 # \param version $(PROJECT_VERSION)
 # \param category Python
 # \par EAGLE_END

/##
 # \par EAGLE_START
```

```
# \param[in] param/start_frequency/500M/Integer
#           \~English the start frequency to read from\n
#           \~Chinese  要读取的起始频率\n
#           \~
# \param[in] param/end_frequency/500M/Integer
#           \~English the end frequency to read from\n
#           \~Chinese  要读取的结束频率\n
#           \~
# \param[in] param/channels/64/Integer
#           \~English how many channels to load\n
#           \~Chinese  需要加载的通道数量\n
#           \~
# \param[in] port/config
#           \~English the configuration of the input_port\n
#           \~Chinese  输入端口的设置\n
#           \~
# \param[in] port/event
#           \~English the event of the input_port\n
#           \~Chinese  输入端口的事件\n
#           \~
# \param[in] local-port/event
#           \~English the event of the input_port\n
#           \~Chinese  输入端口的事件\n
#           \~
# \param[out] port/File
#           \~English the file of the output_port \n
#           \~Chinese  输出端口的文件\n
#           \~
# \par EAGLE_END
```

4 Run Doxygen

```
GIT_REPO=$(git remote -v) PROJECT_VERSION=$(git rev-parse --short HEAD) doxygen
```

5 Examples of the output xml files

```
- <simplesect kind="par">
      <title>EAGLE_START</title>
      <para/>
  </simplesect>
- <parameterlist kind="param">
    - <parameteritem>
      - <parameternamelist>
            <parametername>gitrepo</parametername>
        </parameternamelist>
      - <parameterdescription>
        - <para>
              origin
              <ulink url="https://gitlab.com/llwang/jacal.git">https://gitlab.com/llwang/jacal.git</ulink>
              (fetch) origin
              <ulink url="https://gitlab.com/llwang/jacal.git">https://gitlab.com/llwang/jacal.git</ulink>
              (push)
          </para>
        </parameterdescription>
      </parameteritem>
    - <parameteritem>
      - <parameternamelist>
            <parametername>version</parametername>
        </parameternamelist>
      - <parameterdescription>
            <para>84a5066 </para>
        </parameterdescription>
      </parameteritem>
    - <parameteritem>
      - <parameternamelist>
            <parametername>category</parametername>
        </parameternamelist>
      - <parameterdescription>
            <para>DynlibApp </para>
        </parameterdescription>
      </parameteritem>
  </parameterlist>
- <simplesect kind="par">
      <title>EAGLE_END</title>
      <para/>
  </simplesect>
```

Or:

```
- <detailedescription>
    - <para>
      - <simplesect kind="par">
            <title>EAGLE_START</title>
            <para/>
        </simplesect>
      - <parameterlist kind="param">
        - <parameteritem>
          - <parameternamelist>
                <parametername>gitrepo</parametername>
            </parameternamelist>
          - <parameterdescription>
            - <para>
                  origin
                  <ulink url="https://github.com/ICRAR/daliuge.git">https://github.com/ICRAR/daliuge.git</ulink>
                  (fetch) origin
                  <ulink url="https://github.com/ICRAR/daliuge.git">https://github.com/ICRAR/daliuge.git</ulink>
                  (push)
              </para>
            </parameterdescription>
          </parameteritem>
        - <parameteritem>
          - <parameternamelist>
                <parametername>version</parametername>
            </parameternamelist>
          - <parameterdescription>
                <para>6d29b61 </para>
            </parameterdescription>
          </parameteritem>
        - <parameteritem>
          - <parameternamelist>
                <parametername>category</parametername>
            </parameternamelist>
          - <parameterdescription>
                <para>Python </para>
            </parameterdescription>
          </parameteritem>
        </parameterlist>
      - <simplesect kind="par">
            <title>EAGLE_END</title>
            <para/>
        </simplesect>
    </para>
  </detailedescription>
```

```
- <para>
  - <simplesect kind="par">
      <title>EAGLE_START</title>
      <para/>
    </simplesect>
  - <parameterlist kind="param">
    - <parameteritem>
      - <parameternamelist>
          <parametername direction="in">param/start_frequency/500M/Integer</parametername>
        </parameternamelist>
      - <parameterdescription>
        - <para>
            the start frequency to read from
            <linebreak/>
          </para>
        </parameterdescription>
      </parameteritem>
    - <parameteritem>
      - <parameternamelist>
          <parametername direction="in">param/end_frequency/500M/Integer</parametername>
        </parameternamelist>
      - <parameterdescription>
        - <para>
            the end frequency to read from
            <linebreak/>
          </para>
        </parameterdescription>
      </parameteritem>
    - <parameteritem>
      - <parameternamelist>
          <parametername direction="in">param/channels/64/Integer</parametername>
        </parameternamelist>
      - <parameterdescription>
        - <para>
            how many channels to load
            <linebreak/>
          </para>
        </parameterdescription>
      </parameteritem>
    - <parameteritem>
      - <parameternamelist>
          <parametername direction="in">port/config</parametername>
        </parameternamelist>
      - <parameterdescription>
        - <para>
            the configuration of the input_port
            <linebreak/>
          </para>
        </parameterdescription>
      </parameteritem>
    - <parameteritem>
      - <parameternamelist>
          <parametername direction="in">port/event</parametername>
        </parameternamelist>
      - <parameterdescription>
        - <para>
            the event of the input_port
            <linebreak/>
          </para>
        </parameterdescription>
      </parameteritem>
    - <parameteritem>
      - <parameternamelist>
          <parametername direction="in">local-port/event</parametername>
        </parameternamelist>
      - <parameterdescription>
        - <para>
            the event of the input_port
            <linebreak/>
          </para>
        </parameterdescription>
      </parameteritem>
    - <parameteritem>
      - <parameternamelist>
          <parametername direction="out">port/File</parametername>
        </parameternamelist>
      - <parameterdescription>
        - <para>
            the file of the output_port
            <linebreak/>
          </para>
        </parameterdescription>
      </parameteritem>
    </parameterlist>
  - <simplesect kind="par">
      <title>EAGLE_END</title>
      <para/>
    </simplesect>
</para>
```

6 Combine the files to one file if it is necessory

xsltproc combine.xslt index.xml >all.xml