VecGeom Documentation Sprint

Agreed actions

- Ensure that following brief licensing information is present in all file:

```
// This file is part of VecGeom and is distributed under the
// conditions in the file LICENSE.txt in the top directory.
// For the full list of authors see CONTRIBUTORS.txt and `git log`.
```

- Add `\brief`, `\file` and `\author` information just after the header above (after one blank line). Example:

```
/// \brief Declaration of the unplaced hyperboloid shape
/// \file volumes/UnplacedHype.h
/// \author First version created by Marilena Bandieramonte (CERN)
```

  We agreed to mention only the author who made the first version of the file listed under `\author`:
  - Full list of authors in a `CONTRIBUTORS.txt` file - and `git log`

- Doxygen parsing
  - Need to have **doxygen** and (optionally, for generating the diagrams) **graphviz** packages installed in the system
  - Run cmake, then `make doxygen` from your local build area
  - Check what it produces, including warnings or errors related to your newly documented file, then, with the browser, open file `doxygen/index.html`

- Method documentation
  - Only header files + general description of the class
  - Source implementation files will only include basic header with license statement and initial author (update can be automated through script)
  - **Virtual methods should be documented in the interface class which defines them, not in the derived one**
  - All methods in the user API must have at least a brief description, like:

```
/// Brief description of this method. Can be multi-line comment like
/// this.
```

  - The utility/implementation methods left for later

    - doxygen comments must be placed before the first macro of the method and start with a quick description line. The same goes for the data members. The description have to be meaningful and self explanatory. Example:

For data members:

```
  Vector3D<T> fDimensions; ///< The HALF lengths of the box
```

For constructor(s):

```
  /// Default constructor for the unplaced hyperboloid.
  /** The constructor takes 5 parameters: inner and outer radius,
stereo angles and half length in Z.
      @param rMin  Inner radius.
      @param rMax  Outer radius.
      @param stIn  Stereo angle for inner surface.
      @param stOut Stereo angle for outer surface.
      @param dz    Half length in Z.
  */
  VECCORE_ATT_HOST_DEVICE
  UnplacedHype(const Precision rMin, const Precision rMax,...)
      : fHype(rMin, rMax, stIn, stOut, dz)
```

For methods with only input parameters, just use the `@param` command, for those with both input and output parameters be explicit, like:

```
   @param[in]  param1 This is one input parameter
   @param[out] param2 This is an output parameter
```

- Style issues
    - Position of data members and methods in the class made consistent.
        - Start with data members just after the class declaration
        - Follow with the public methods, starting with: constructors, destructor operators, member functions
        - End with protected and private member functions
    - Namespaces should be lower case

- Blueprint header file for doxygen formatting style: UnplacedHype.h

- List of files to keep track of progress and who is doing what. **Please add your name initials in the first column to signal that you are starting editing a file:**
    - https://docs.google.com/spreadsheets/d/1Qp5fLbOTfTkgRultQmIYGl0taJYuLi_ZuecmpEhzzI8/edit?usp=sharing

  Preferably, please group the modifications for Doxygen into sets of related files in a single MR, associated to JIRA task [VECGEOM-32]

TODO (SW, GC, AG, JA, GL)

1. General description of the project
    - `README.md` and `INSTALL.md`
    - `README` = high level description of the package.
    - Rename current file `README` to Install (as it only contains installation guidelines)
    - Main concepts in the `README`:
        - How we create geometry objects via factories,
        - The roles of ‘unplaced’, ‘placed’ and ‘specialised’ classes
        - The struct describing each shape
        - Navigation techniques/features