**Develop guidance on quantifying buoy characteristics to meet nautical and operational requirements and ways to verify them**

# **Identify nautical requirements**

**Defining the purpose of the buoy (navigational/measurement buoy, mooring buoy)**

**Position: geographical coordinate gives the site conditions**

**Day visibility**

* Range (identification of shape (and colour?))-> calculation of height and diameter of the
* Colour according to the MBS, chapter 4.3.1 and IALA R0108
* Shape/daymark including top mark according to the MBS, chapter 4.3.2 and IALA Guideline 1094
* Lettering according to the MBS, chapter 4.3.3

**Night visibility**

* Retroreflective night marking
* Beacon equipment
* focal plane

**Radio-technical recognition**

* Radar reflection characteristics
* AIS
* RACON

**Swimming stability**

* Swim behavior in swell
* Swimming Behavior in Wind and / or Power

**Availability**

**Collision behavior**

# **Identify buoy characteristics**

**Defining the operational performance characteristics;**

* Defining the site conditions of the location of the buoys and evaluate in the design the specifics site conditions depending on: typical, medium, maximum/operational or severe/survival conditions
* Defining the local service capabilities
* Defining the equipment, power requirements and power source(s)
* Selecting the initial type proportions (buoy type)
* Selecting the mooring for the buoy

• integrating of equipment and power supply (same as line 4)

• considering of the maintenance requirements

• identifying deployment and recovery techniques (same as line 3)

• protecting equipment from damage, vandalism and guano

• providing the ability to rectify faults without having to lift the buoy (depending on the country regulations)

• determining the buoy response to the wave, wind and current conditions at the site(s)

• optimising the design, bouyancy and the material

# **relationship between nautical requirements and buoy characteristics**

* Discuss the relationship between nautical requirements and buoy characteristics
* Identify measurement methods for the dynamic performance