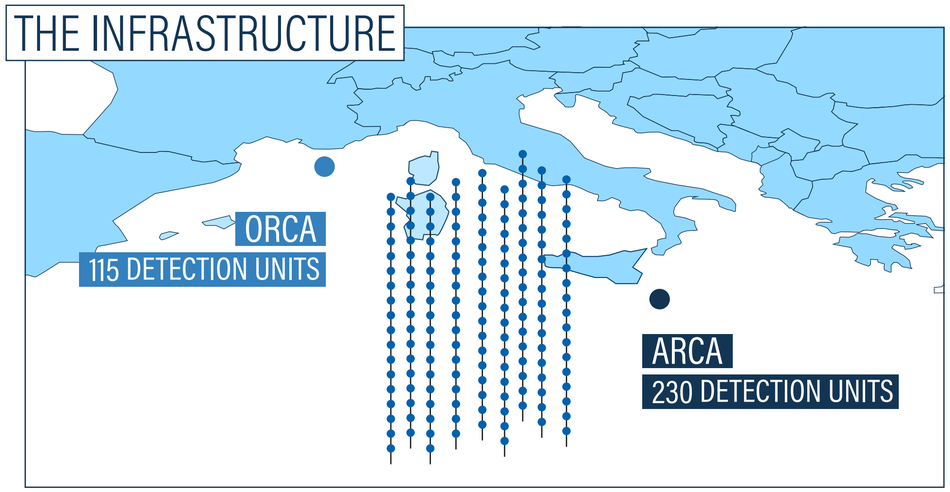
KM3NeT

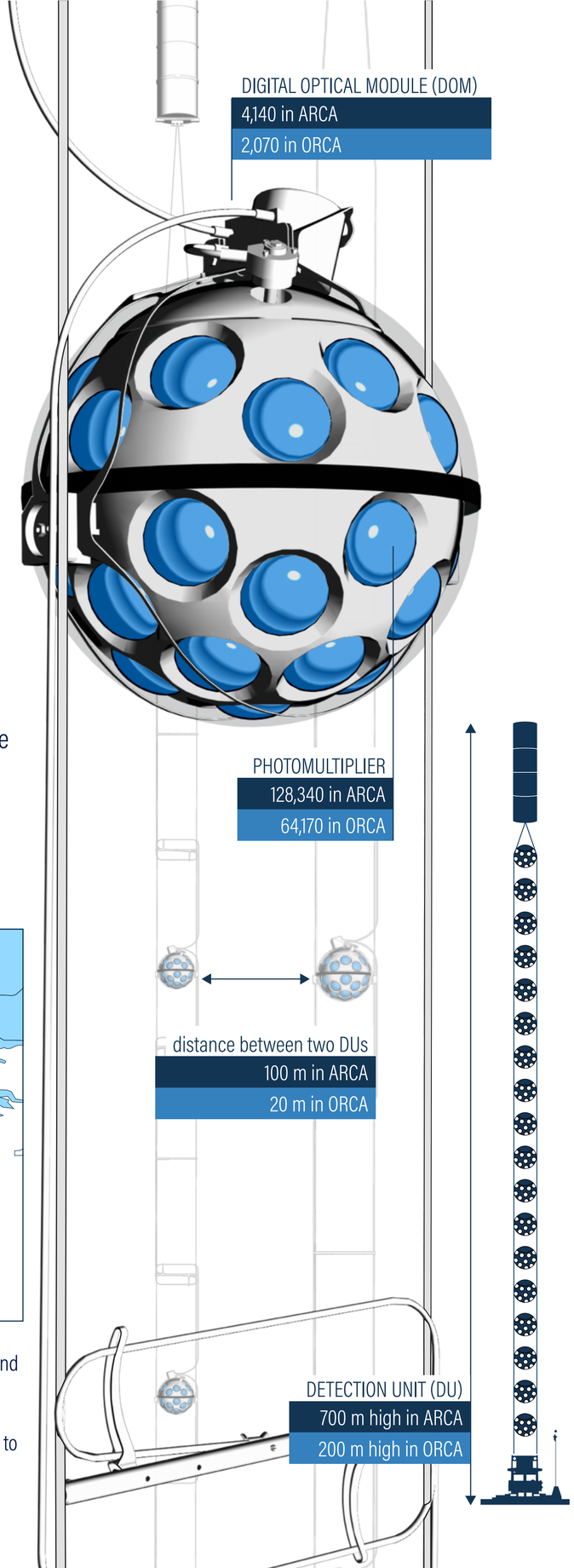
A GIANT DEEP-SEA NEUTRINO TELESCOPE

KM3NeT, once completed, will be one of the largest astronomical telescopes in the world. Located at the bottom of the Mediterranean Sea, it comprises two detectors: ARCA off the coast of Sicily, in Italy, and ORCA off the coast of Toulon, in southern France. Its main goal is to detect and study neutrinos: extremely light, fast and hard-to-catch elementary particles. The ARCA detector is optimised for the study of high energy cosmic neutrinos, which carry with them valuable information about the most energetic phenomena in the universe.
The ORCA detector is optimised to measure the fundamental properties of the neutrino itself using atmospheric neutrinos.

THE INFRASTRUCTURE

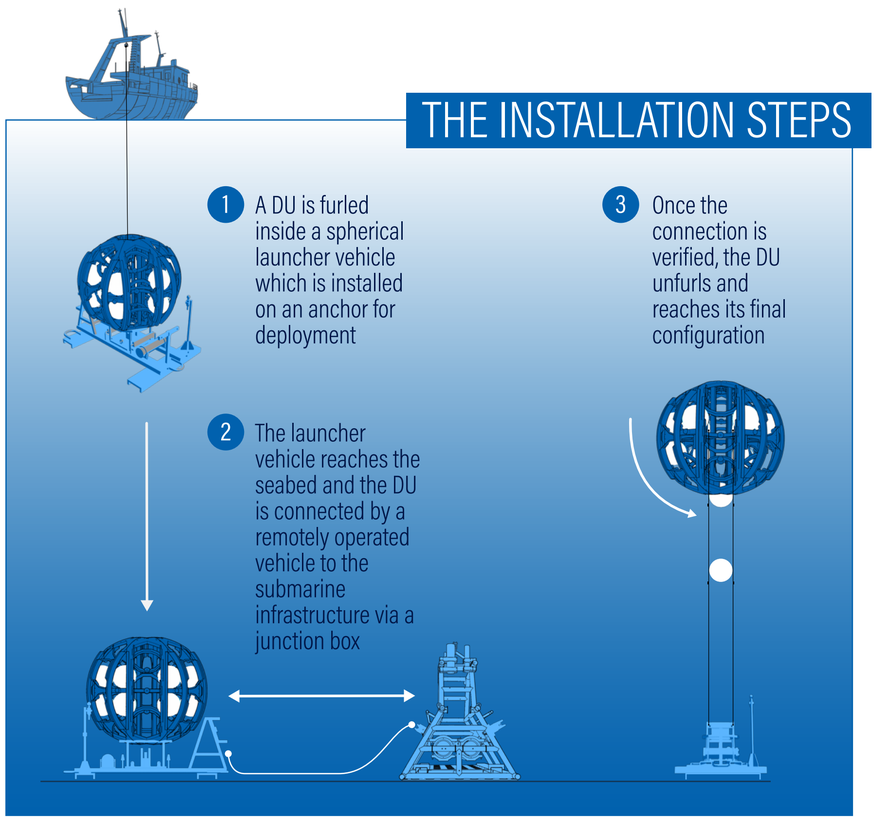


The KM3NeT infrastructure consists of an array of hundreds of detection lines, "detection units", which stand on the sea bottom and are equipped with thousands of hi-tech eyes. Its final configuration will occupy a volume of over 1 km^3, hence its name.
The detection units are connected to a submarine network of cables and junction boxes. The connection to shore is via a submarine cable of many tens of kilometres long.
KM3NeT is also a valuable multidisciplinary laboratory for Earth and Ocean Sciences.



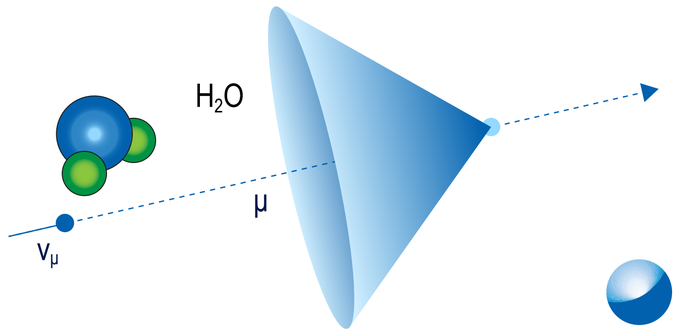
KM3NET IS A LARGE INTERNATIONAL COLLABORATION THAT INVOLVES OVER **360** SCIENTISTS, ENGINEERS, TECHNICIANS AND STUDENTS OF **68** INSTITUTIONS FROM **21** COUNTRIES.

THE INSTALLATION STEPS



NEUTRINO DETECTION

KM3NeT uses sea water as interaction medium. Neutrino interactions generate charged particles that propagate at a speed higher than the speed of light in sea water, producing a faint bluish glow called "Cherenkov light". The Cherenkov radiation is emitted at a characteristic angle with respect to the trajectory of the particle. This glow is detected by KM3NeT's hi-tech eyes. Analysis of these signals provides fundamental information on the neutrinos direction, energy and nature.



KM3NeT
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