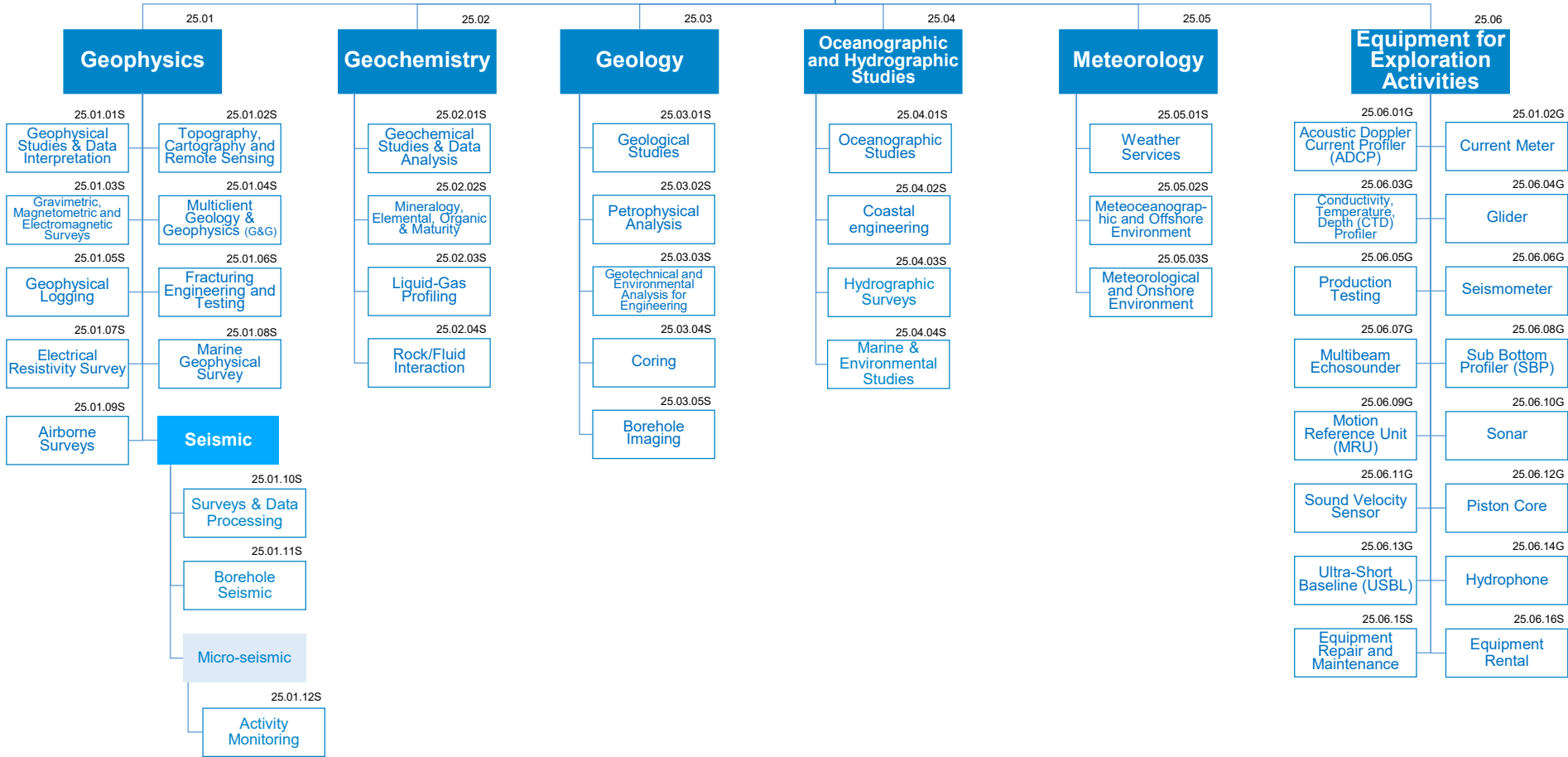


Exploration



Exploration

This Group covers activities and materials used for Exploration and Reservoir Management to assess key characteristics of a field as well as to efficiently manage it.

The first families refer to the exploration and development phases, while Reservoir Management covers the most relevant activities during the production phase.

The “Equipment for Exploration” family is meant to capture the most critical and strategic equipment needed notwithstanding the exploration method.

MAIN RATIONALES BEHIND THE STANDARD CATEGORIZATION

Geophysics

- This family encompasses all activities related to field appraisal in the exploration and development phases. These activities are mostly carried out by contractors.
- “Geophysical Studies” principally refers to acquisition and processing of seismic data including marine and airborne surveys (e.g. Processing data to generate interpreted images of the subsurface).
- Supervision of Geophysical activity is included under “Geophysical Studies and Data Interpretation”.
- “Fracturing engineering” can be found under Group 26 “Reservoir management”.
- Seismic explorations are most often used and entail the collaboration of specialized professionals. They include all activities to collect information on composition, fluids, extension and geometry of the underground layers of rock. 2D, 3D, and the more complex 4D techniques are all considered under the seismic category.

Geochemistry

- This family encompasses all exploration studies that entail the use of tools and principles of chemistry to explain geological phenomena. In particular we refer here to exploration geochemistry that includes applications to environmental, hydrological and mineral exploration studies.
- Data gathering, processing and analysis are included in the “Geochemical studies and Data analysis” category.
- “Mineralogy, Elemental, Organic and Maturity studies” refers to the chemical, crystal, and elemental characteristics of a specific area.
- “Rock/Fluid Interaction” refers to the studies and surveys performed to gather a complete picture of the rocks and fluids interactions impact while drilling.

Geology

- This family represents all activities of systematic investigation of the geology beneath a given piece of ground for the purpose of creating a geological map or model for a reservoir or other site.
- “Geological Studies” include traditional walk-over survey, studying outcrops and landforms, and intrusive methods (such as hand augering and machine-driven boreholes).
- “Petrophysical Analysis” refers to the physical and chemical studies of underground soil or rocks.
- “Geotechnical and Environmental Analysis for Engineering” refers to studies concerned with the chemical and physical behavioral of materials.
- “Coring” Services refers to coring services performed for data studying and interpretation.
- “Borehole Imaging” refers to the logging and data processing services for exploration of soil characteristics.
- Diving Services for exploration are not included in this group and can be found under Group 23 “Marine and Diving Equipment and Services”.

Oceanographic and Hydrogeological Studies

- This family includes all studies related to the physical and biological aspects of the ocean and of the seabed during the exploration phase.
- This family also incorporates “Coastal engineering” services performed for data gathering and exploration of the ocean’s characteristics.

Meteorology

- This family includes all weather and ocean forecasts that are essential to making informed decisions about day to day operations, shipping and aircraft movements, and construction or maintenance work.
- The family includes categories for Meteorological and Meteorological for onshore and offshore environmental impacts.

Equipment for Exploration Activities

- This family includes all critical equipment employed in exploration activities.
- AUVs are not included in this family and are instead listed under “Subsea Remote Activities” (23.03).
- Software systems are classified under IT Software (41.03).
- Some equipment such as anemograph and fluoroscope are not included due to their low level of criticality.
- It also includes services of “Repair and Maintenance and Rental of Exploration equipment”