This research area covers the development of methods, systems elements and production process configuration for improving the technical and economic performance of an integrated subsea production system. The subsea system extends from the reservoir, through the wells and the seabed gathering system, the processing and boosting facilities and to the field delivery point, whether it is a subsea storage and offloading system, a host platform, a floating vessel or an onshore terminal (Figure 2).

Specific industrial challenges and goals:
- Increase field production by enabling a “smart” synthesis of the diversified wells potential, constraints, and recovery targets.
- Employ “near the source” seabed separation and boosting whenever this improves the recovery, reduces the transport costs or prolongs the economic life of the field.
- Shorten the schedule and reduce the costs of design, construction, installation and commissioning of subsea systems. This implies system simplifications, elimination of unnecessary functionalities, industry wide standardisation, simplification of sub-system interfaces to enable modularisation and cheapest adaptation to changing production conditions.
- Cost effective strategies for developing and operating remote offshore oil and gas reservoirs with low pressure and low temperature in harsh environments. Such strategies include two scenarios; long distance tie-ins and near field receiving facilities
- Minimize energy dissipation in well control choking by transferring well control functionality to a compact separator.

Three business cases with relevant data and information are formulated to guide and narrow the scope of the R&D work. They represent reference oil and gas fields with current gaps and challenges to subsea production and processing.

- Case 1 – Gas field
  - Low Gas to Oil Ratio (GOR) (prioritised)
  - High GOR (currently not prioritised)
- Case 2 – Remote, low energy oil field
- Case 3 – Oil field with future tie-ins

Sub-projects of Field architecture
The following three sub-projects have been initiated as a part of the research area Field architecture:

- Subsea gate box
- Field development concepts
- Multiphase booster models