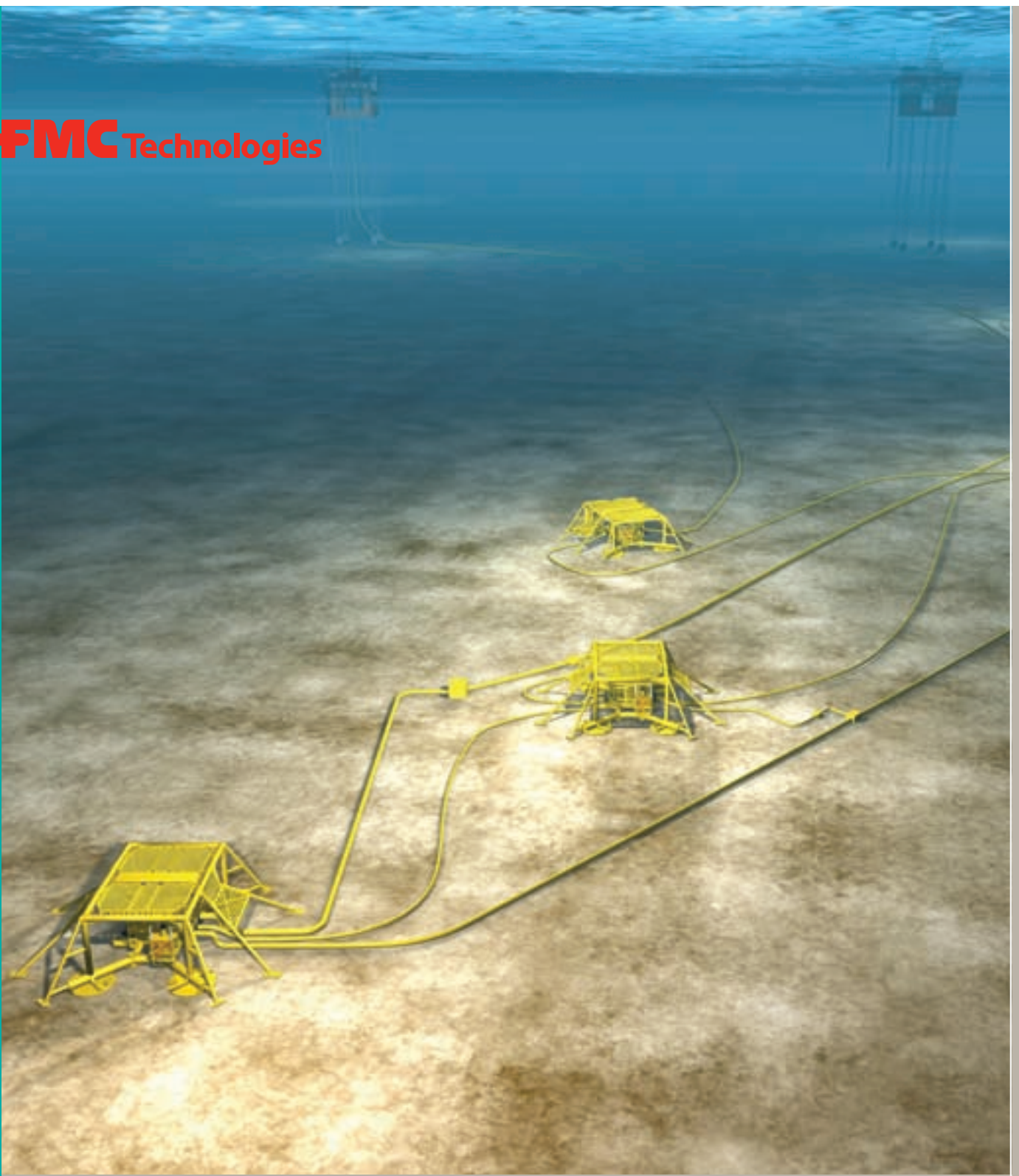


FMC Technologies



Field Development

Field Development

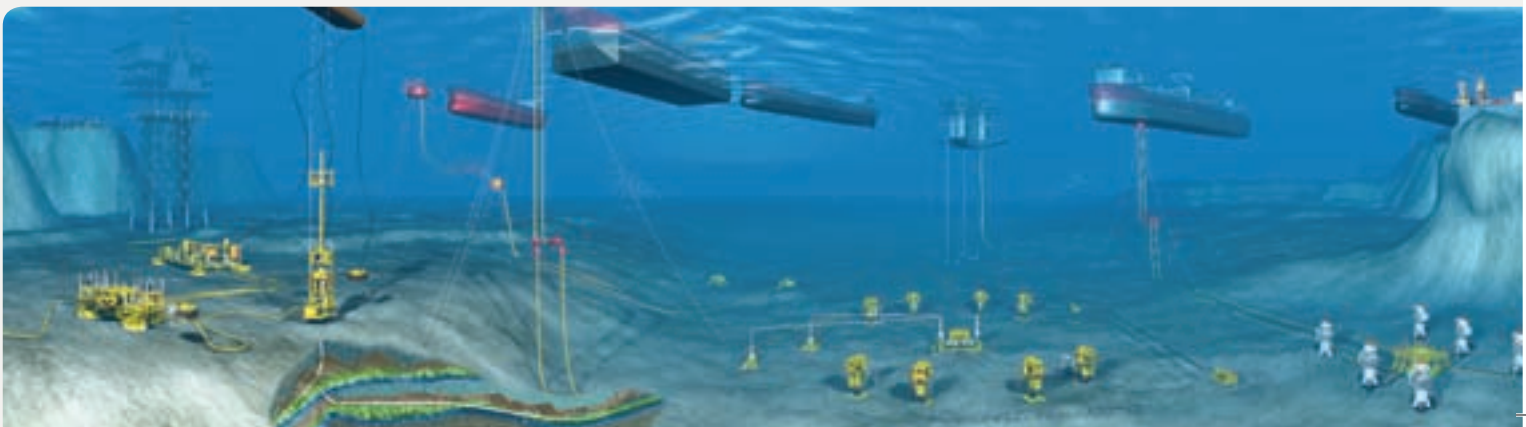
Early involvement during the field development planning process lowers the total costs and enables a higher return on investment.



The objective is to understand the project drivers and customer needs from an overall system perspective, from reservoir to topside processes. We provide a total system solution, optimizing the drilling plan and field architecture. We also define a system to satisfy key success factors for safety, performance, operability, CAPEX, OPEX, availability and risk.

Scope of service

- ▶ Screening studies
- ▶ Conceptual studies
- ▶ FEED
- ▶ Cost estimates
- ▶ Planning
- ▶ Specialist consultancy
- ▶ Preparation of specification
- ▶ Preparation of Scope of Work (SOW)
- ▶ Project management
- ▶ Project and contract strategy
- ▶ Management consultancy





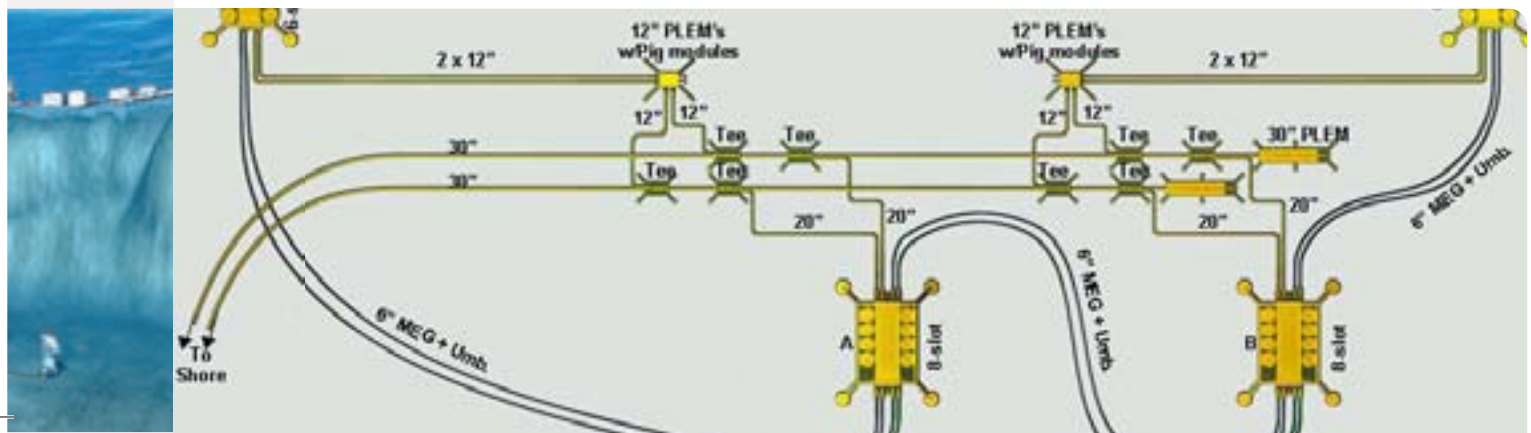
Engineering, analysis and capabilities

- ▶ Optimization of drilling programme versus subsea architecture
- ▶ Flow assurance and process engineering
- ▶ Riser analyses
- ▶ Risk, reliability and availability analyses
- ▶ Electrical and hydraulic analyses
- ▶ Materials engineering
- ▶ Value engineering
- ▶ Subsea architecture optimization
- ▶ Operability assessment
- ▶ Intervention and maintenance assessments

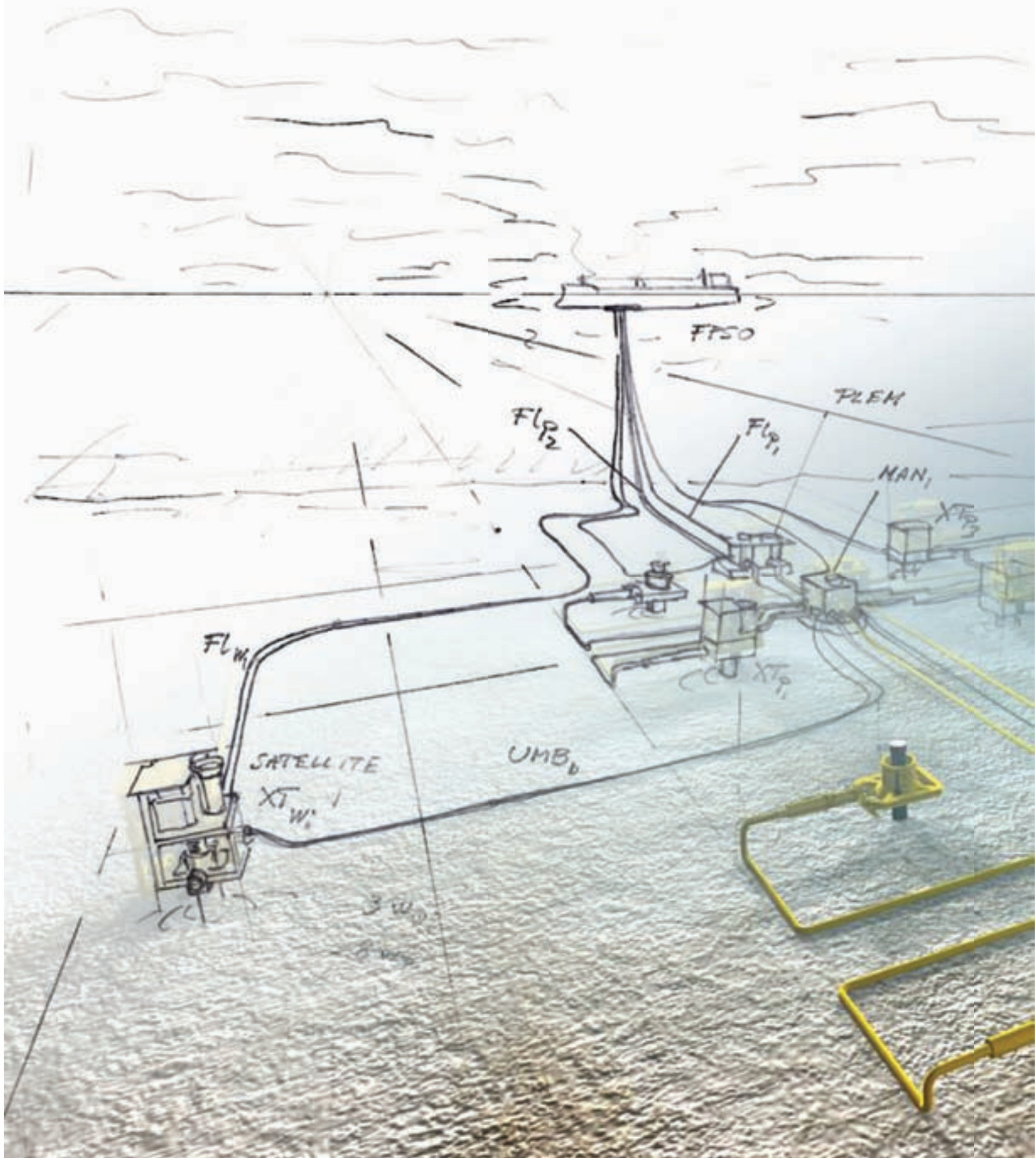
Integrated teams

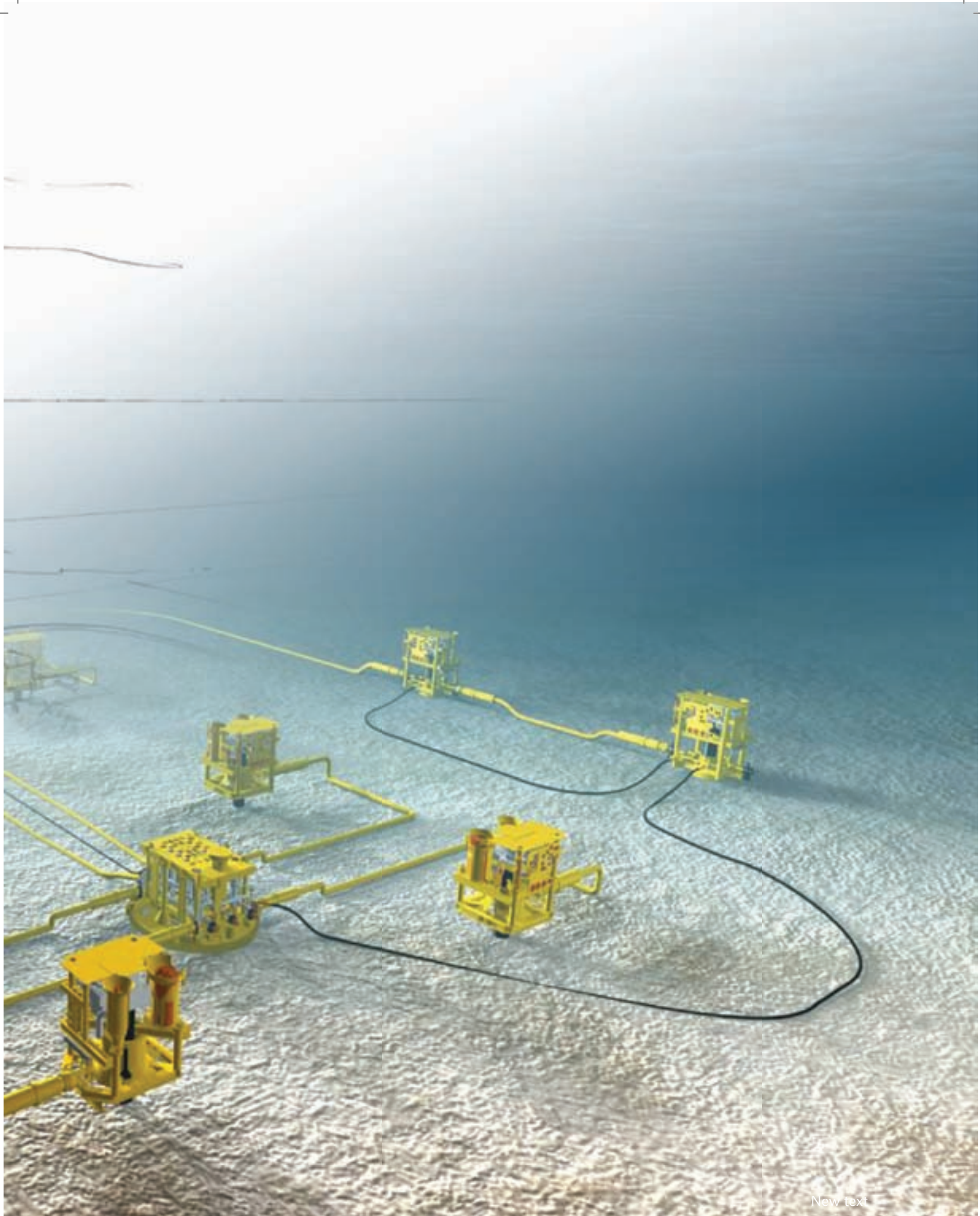
It is important to understand the client's needs and establish a clear definition of all aspects. FMC engineers always discuss and agree the design basis and scope of work. This is to ensure that we all have a common understanding of customer expectations and requirements.

We provide an integrated, total solution approach. FMC Field development provides a team of specialists working together in order to consider all relevant aspects and project requirements.



From concept to project





New text

Field Development Tool

The Field Development Tool (FDT) is an advanced 3D graphical design tool. The FDT comprises a series of modules to enable a Field Layout Model to be defined.

The FDT enables different scenarios to be developed, investigated and evaluated much more efficiently than before. With the FDT, we can make an interactive optimization of the drilling programme versus the subsea

architecture and facilities layout. We also assess economic decisions such as phased drilling and investment programmes versus pre-investment to achieve the lowest installed cost per well under prevailing technical constraints.

The FDT generate output as Master Equipment Lists, Cost Estimates, Design Basis documents for products or sub-systems, layout drawings etc.

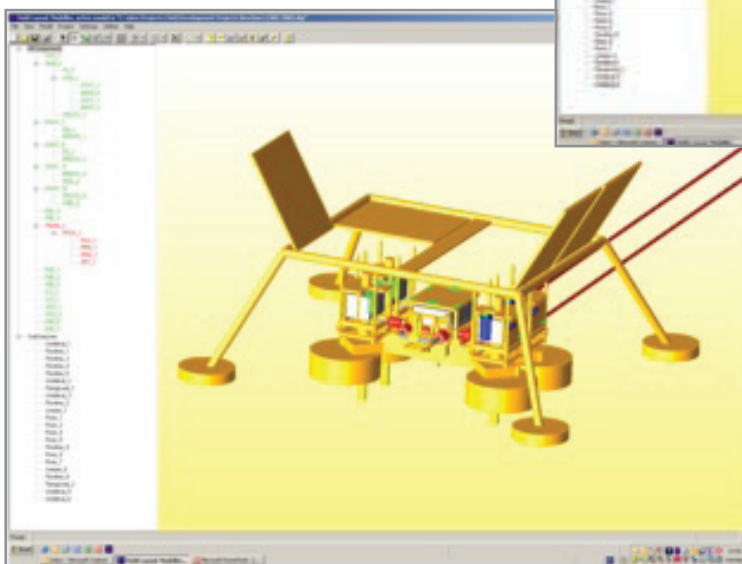
Field Development Tools & Outputs

Item No.	Item Name	Description	Quantity	Approx. Unit Price (USD)	Equipment Tag No.
100	100.000.000	Control Systems	1	1000000	100.000.000
101	100.000.001	Control System - Main	1	1000000	100.000.001
102	100.000.002	Control System - Backup	1	1000000	100.000.002
103	100.000.003	Control System - Redundant	1	1000000	100.000.003
104	100.000.004	Control System - Spare	1	1000000	100.000.004
105	100.000.005	Control System - Test	1	1000000	100.000.005
106	100.000.006	Control System - Maintenance	1	1000000	100.000.006
107	100.000.007	Control System - Spare	1	1000000	100.000.007
108	100.000.008	Control System - Spare	1	1000000	100.000.008
109	100.000.009	Control System - Spare	1	1000000	100.000.009
110	100.000.010	Control System - Spare	1	1000000	100.000.010
111	100.000.011	Control System - Spare	1	1000000	100.000.011
112	100.000.012	Control System - Spare	1	1000000	100.000.012
113	100.000.013	Control System - Spare	1	1000000	100.000.013
114	100.000.014	Control System - Spare	1	1000000	100.000.014
115	100.000.015	Control System - Spare	1	1000000	100.000.015
116	100.000.016	Control System - Spare	1	1000000	100.000.016
117	100.000.017	Control System - Spare	1	1000000	100.000.017
118	100.000.018	Control System - Spare	1	1000000	100.000.018
119	100.000.019	Control System - Spare	1	1000000	100.000.019
120	100.000.020	Control System - Spare	1	1000000	100.000.020

Master equipment list



3D-Model view



Drill center

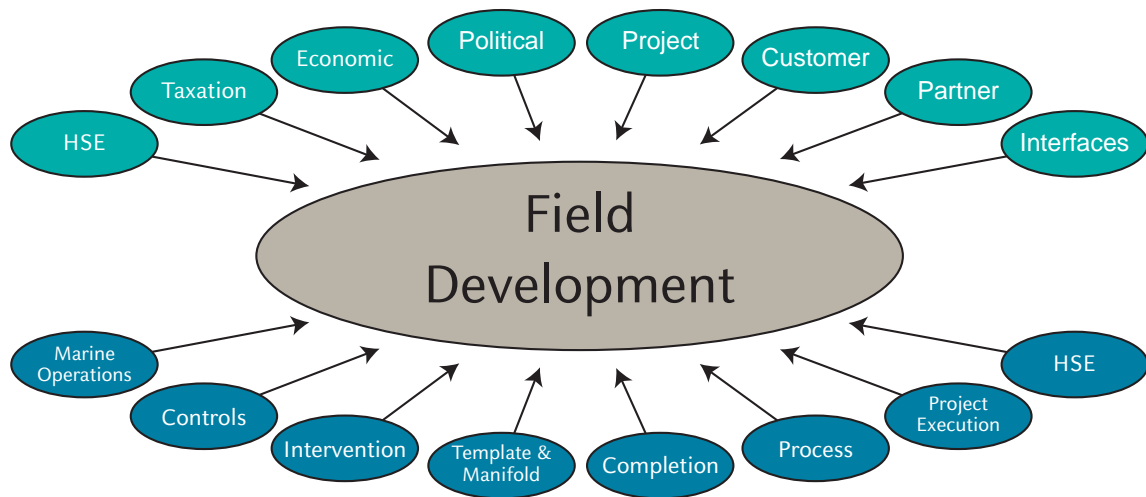
Subsea solutions provided through the FDT continuously reflect expansions and improvements made to the FMC product range.

- ▶ Completions and wellheads
- ▶ Conventional and horizontal trees
- ▶ Manifold and template systems and associated foundation systems
- ▶ Flowline jumpers
- ▶ Power, control and service umbilicals
- ▶ Controls distribution systems, including relevant connection systems
- ▶ Pipelines and flowlines
- ▶ Pipeline, flowline and umbilical connection systems (ROV and diver operable)
- ▶ Risers and riser bases

The mission of the field development group

Our mission is to understand our customers and what our projects need. Further more we shall assess the effect of external factors and bring together FMC Technologies' global capabilities to meet customer requirements.

■ *External factors*



■ *FMC Technologies
Global Capabilities*

Resources

Field Development resources with the required multidisciplinary approach are available in all regions of the world. We have offices in Europe (Kongsberg, Asker, Stavanger and London), North America (Houston), South America (Rio de Janeiro) and the Asia Pacific region (Singapore and Perth). We perform more than 50 studies annually with a wide range of scopes.



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