

thyssenkrupp Group

ThyssenKrupp Industrial Solution
EPC Competitiveness

*The Global EPC Project Management Forum
11-12 of April 2019*

Presented by
Dr. Wolfgang Benz





thyssenkrupp –

a diversified industrial group





Leading engineering expertise from one source

thyssenkrupp: a global corporation

> 2,200

production sites,
offices and service location
all over the world

€735_{mn}

R&D spending

€42,778_{mn}
Sales

2,000

industrial property
rights in reporting period

~155,000

employees

~17,000
patents in total



Present in nearly

80 countries



Driven by global trends

Leading engineering expertise



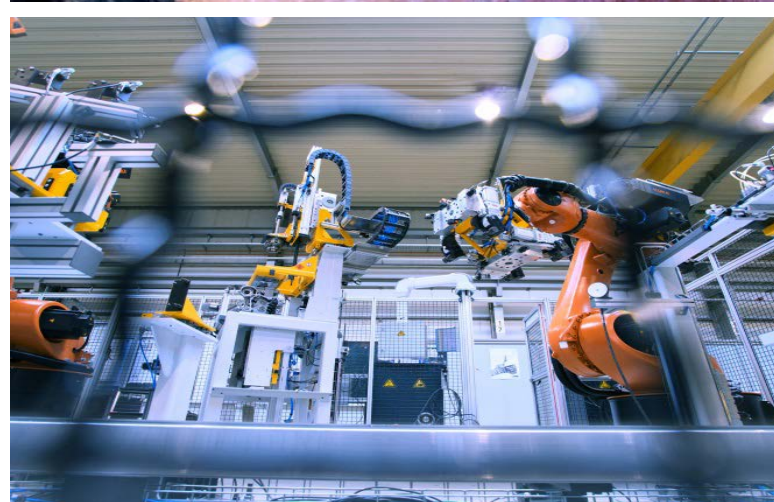
Business Area

Industrial Solutions

Facts & figures



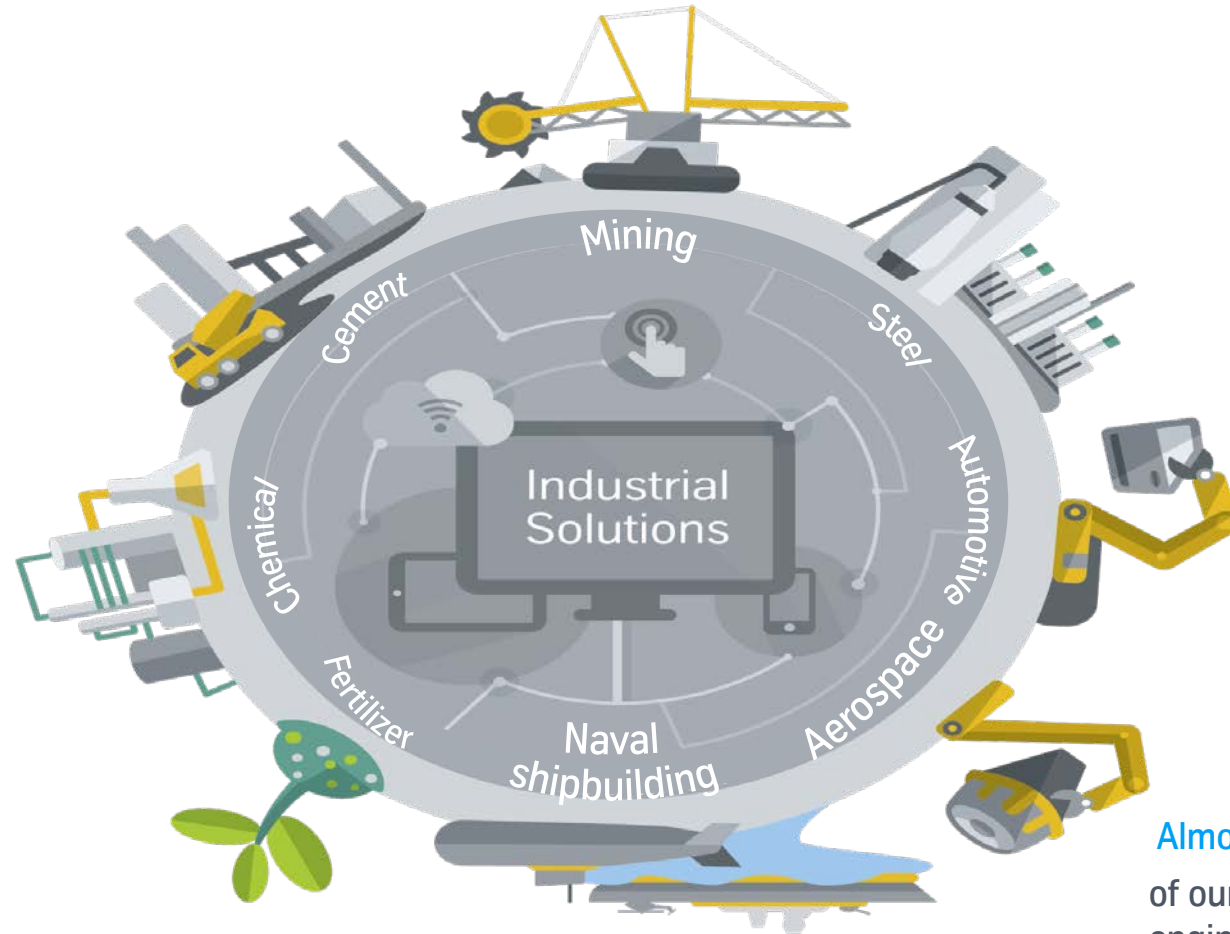
Excellent and sustainable
engineering solutions and services



Industries we serve

>17,600
machines and systems
in use worldwide

Over 2,500
chemical installations
constructed worldwide



More than
200 years of
engineering excellence

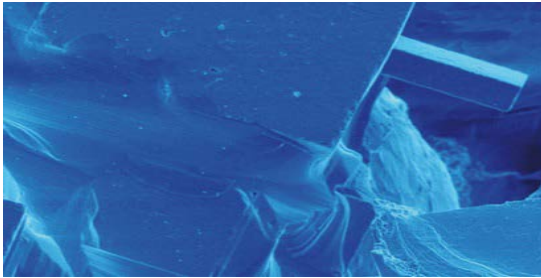
Almost 70%
of our employees are
engineers and technicians



thyssenkrupp Industrial Solutions AG

Business Units

Electrolysis & Polymers
Technologies



Fertilizer & Syngas
Technologies



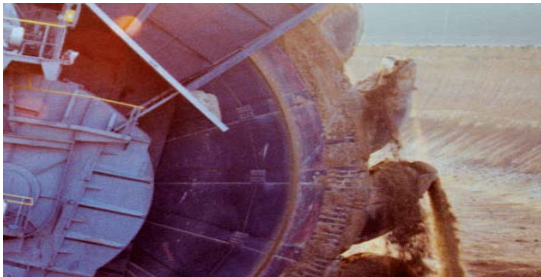
Industrial
Specialties



Cement
Technologies



Mining Technologies



Service



System Engineering



Marine Systems

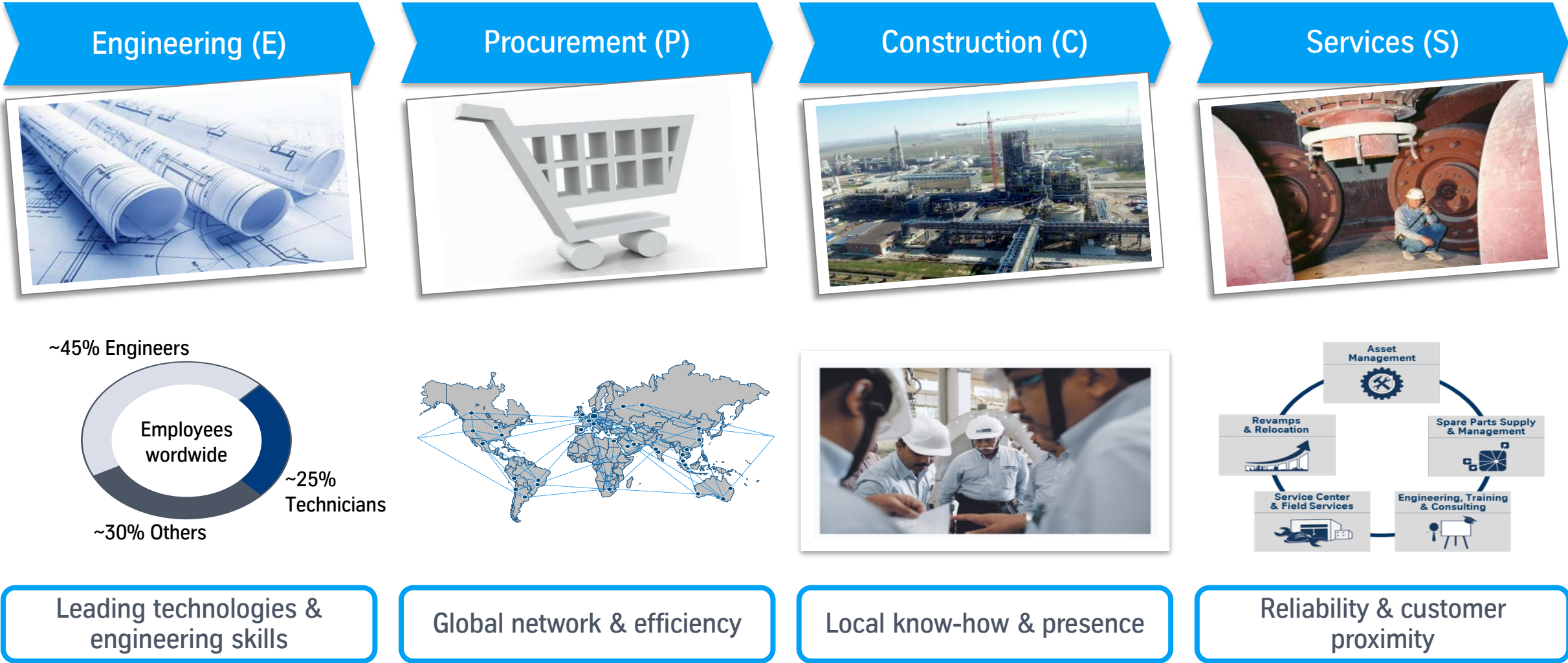


Network of Excellence



thyssenkrupp Industrial Solutions AG

Joint EPC-S business model based on sound expertise in project management



Engineering Procurement Construction (EPC)

The right partner for your turn-key projects

Engineering (E)



Procurement (P)



Construction (C)

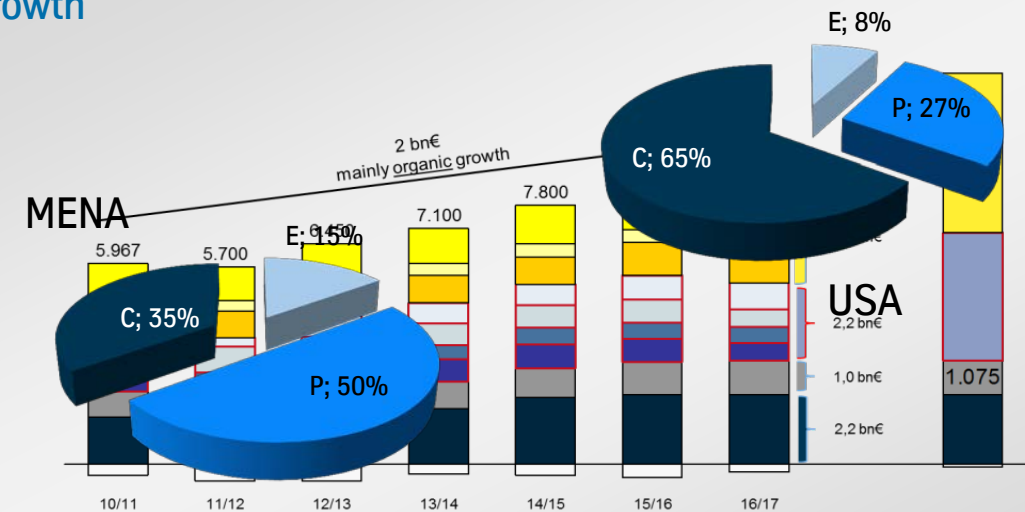


Know-how Exchange

Knowledge transfer via a closely knit global network



Growth



The challenges of EPC / LSTK Contracts

Challenges

Race against time !!!

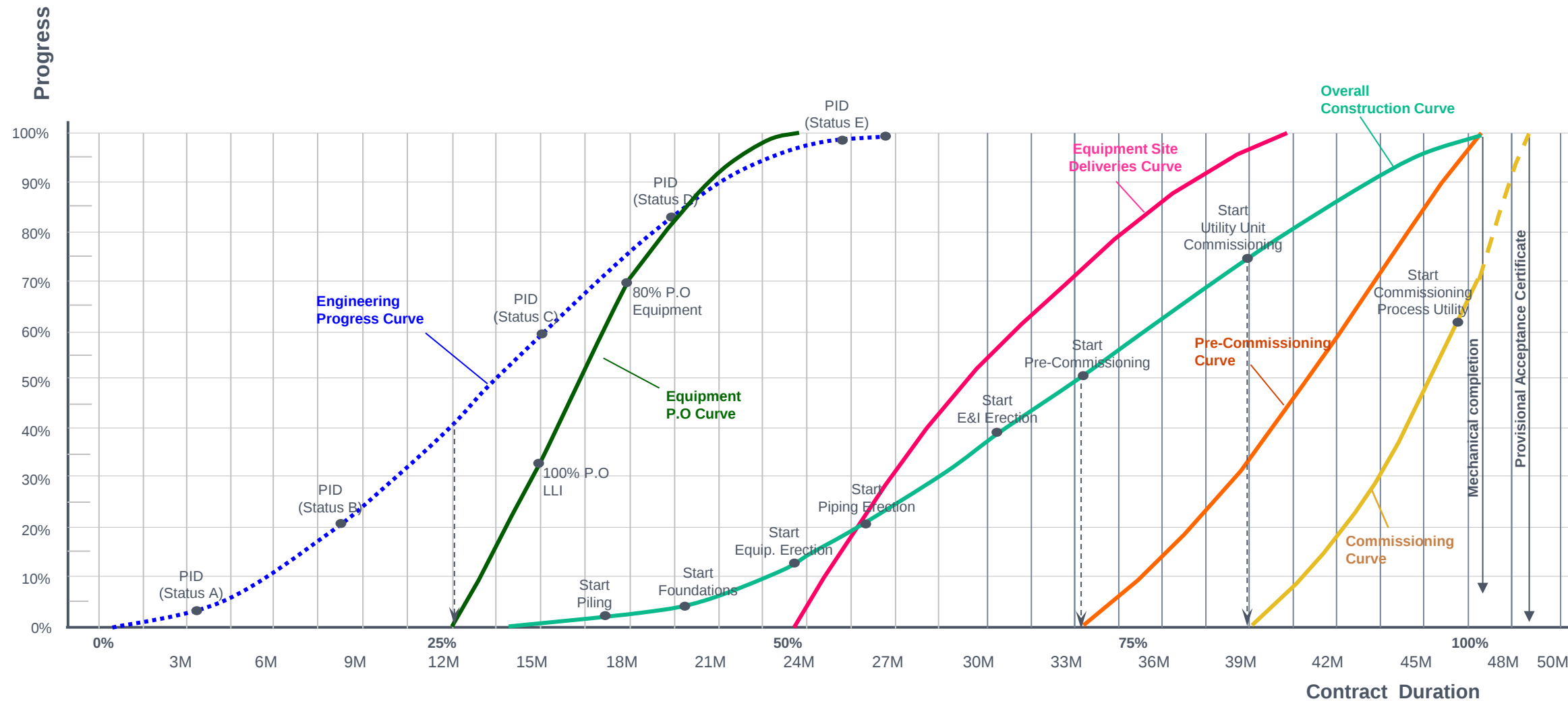
Produce quality

Stay within the budget

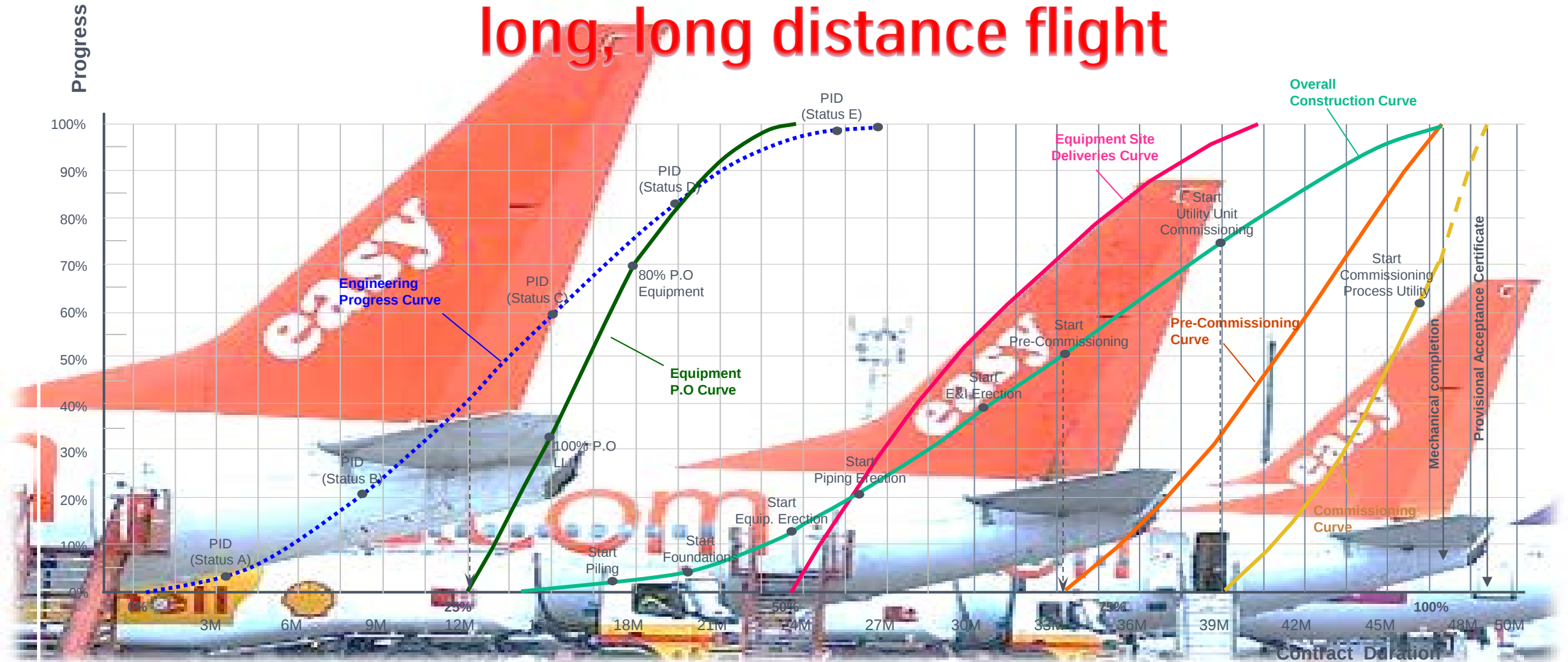


The key is planning and control





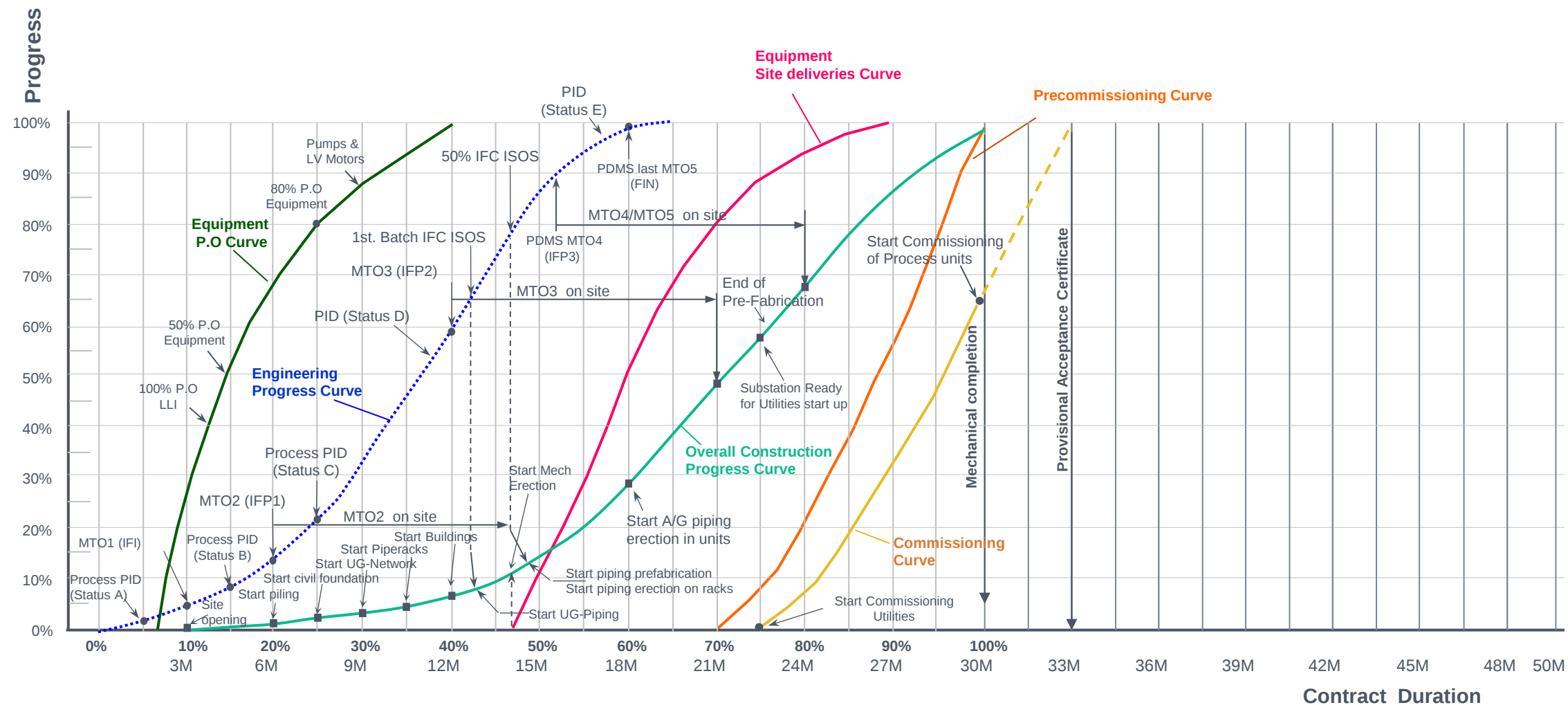
long, long distance flight



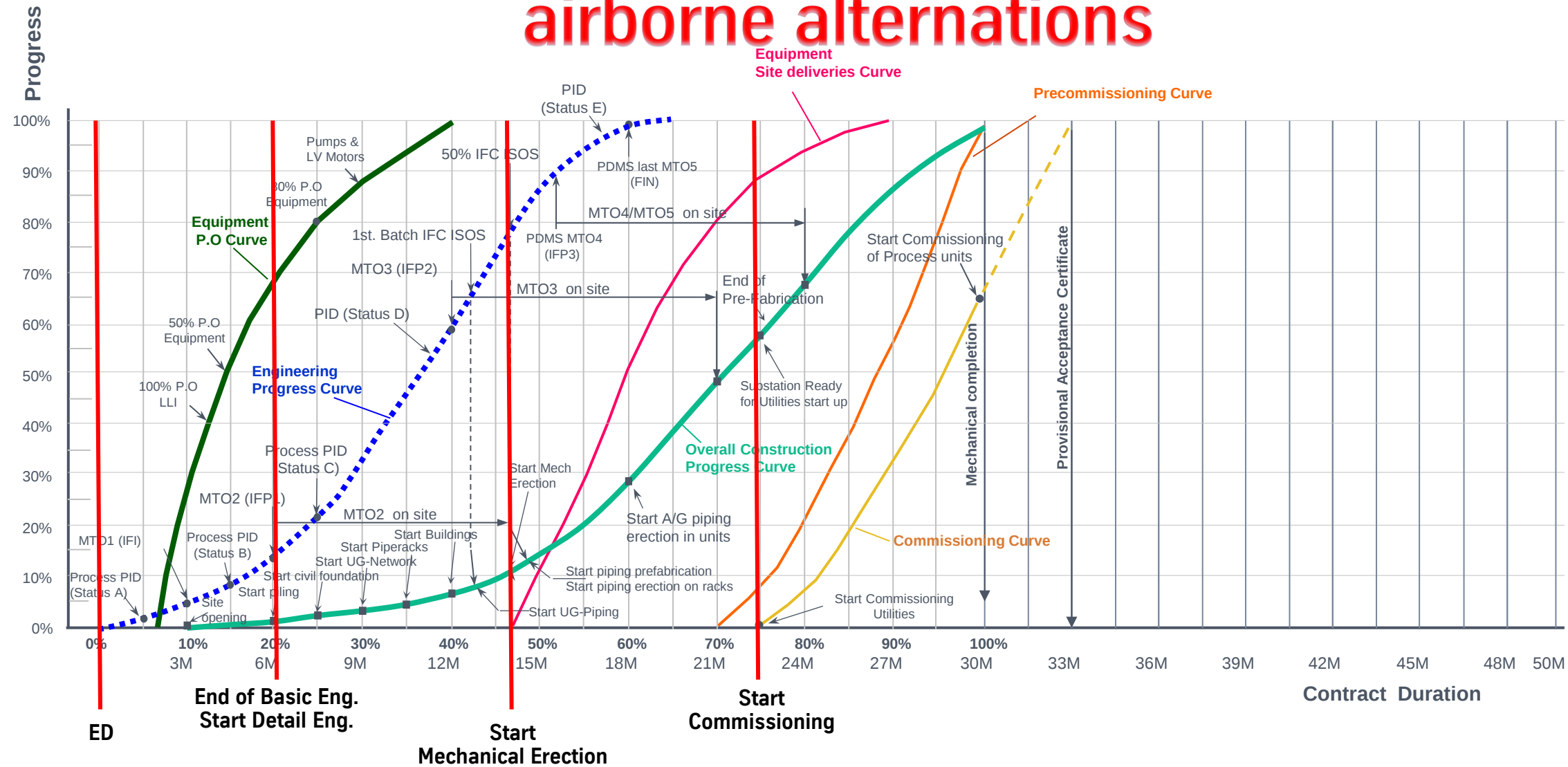


airborne alternations

Engineering & Construction – Critical Path Reality



airborne alternations



Talk the same language

Qualified people - development and training programs

Integrated approach – consistency in all project phases

Uniform, globally harmonized engineering processes, methods and tools

Efficient project management and controlling

Proven interface management / Risk management / Risk response planning

Precise definition of deliverables

Detailed schedule - Workflow follows the time schedule requirements

Construction driven project execution

Good enough ?



A bundle of measures to increase EPC competitiveness

Lead time reduction project is one of cornerstones

1

Engineering

- Develop Local Org. as EPC operating offices – Global footprint
- Design to cost analysis
- New standardized Offsites & Utility concept
- Modular Design

2

Procurement

- Target Pricing Procurement
- Low cost sourcing
- Global procurement concept

3

Construction

- Target Pricing Construction
- Target search for construction management company
- Strategic partnering

4

Project Management

- Reduce project lead time
- Implement additional KPI's for project control
- Improve cockpit for project execution



Ammonia Plant QAFCO IV: 14 months after ED



Ammonia Plant QAFCO IV: 22 months after ED



Ammonia Plant QAFCO IV: 32 months after ED



General Concept Execution

Objectives

Safe, Economic and Timely completion is the primary and fundamental objective of the Project Execution

- To work in accordance with the CONTRACT and in full compliance with the Health, Safety and Environment requirements, applicable rules and standards
- To comply with local and national requirements
- To achieve an accident free project including Zero Lost Time Incidents (LTI) by implementing high standards of safety
- To comply with all applicable LAWS and PERMITS and with OWNER's Code of Conduct.
- To meet the highest quality standards for Engineering, Procurement and Construction including Documentation
- To achieve Commercial Completion within the agreed framework of the Project Schedule
- To fulfil the PERFORMANCE GUARANTEES
- Both parties shall be winners of the match!



Industrial Solutions

Process Technologies – More than 2,000 plants built around the globe

Fertilizers



130 plants

Nitric acid



185 plants

Refineries



380 plants

Aromatics



75 plants

Hydrogen, Ammonia, Methanol



120 plants

Organic chemicals, Petrochemicals



375 plants

Plastics, Synthetic fibers



115 plants

Polyester, Polyamides



400 plants

Electrolysis



150 plants

Coke plants



500 plants

Gasification



100 plants

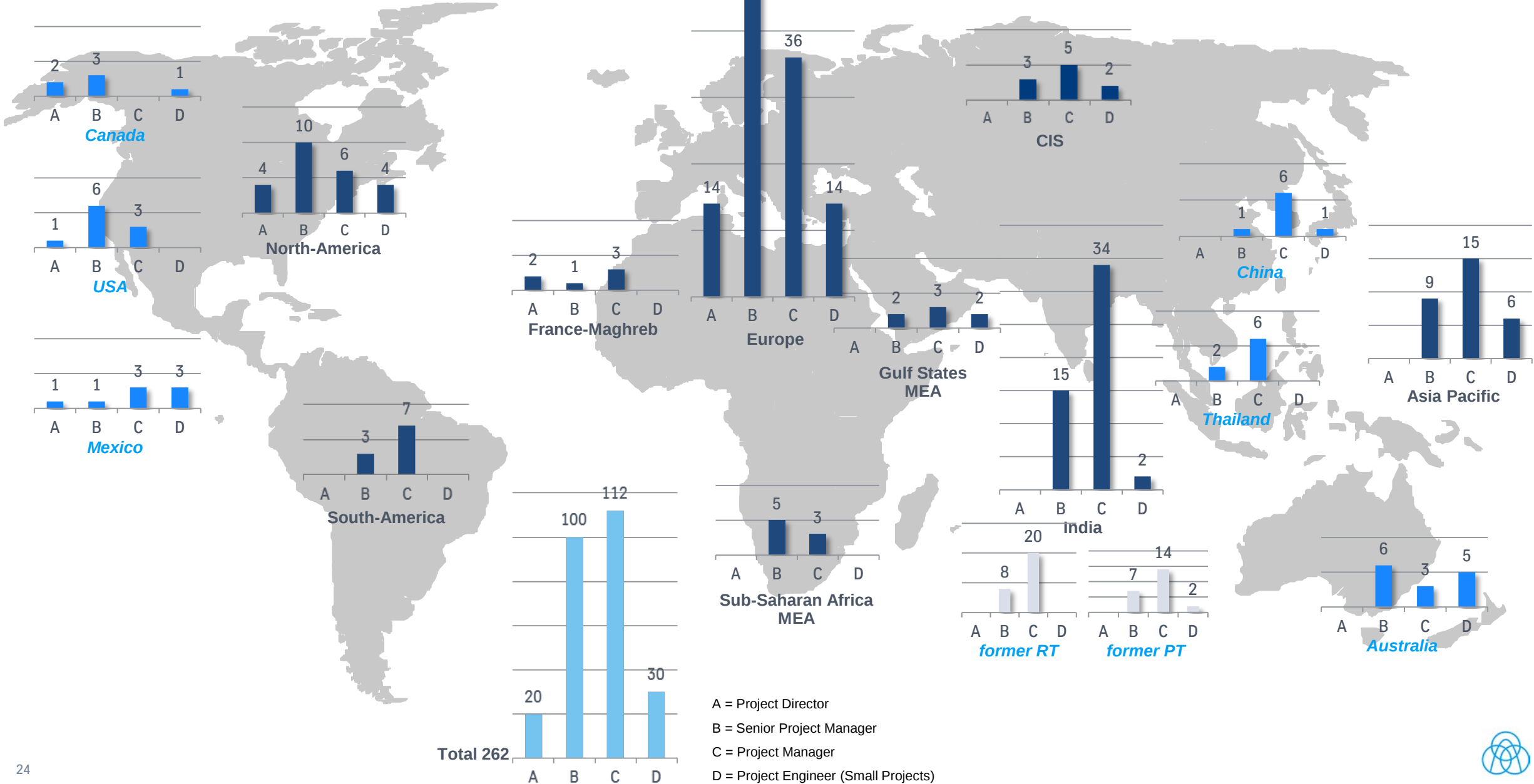
Industrial plants



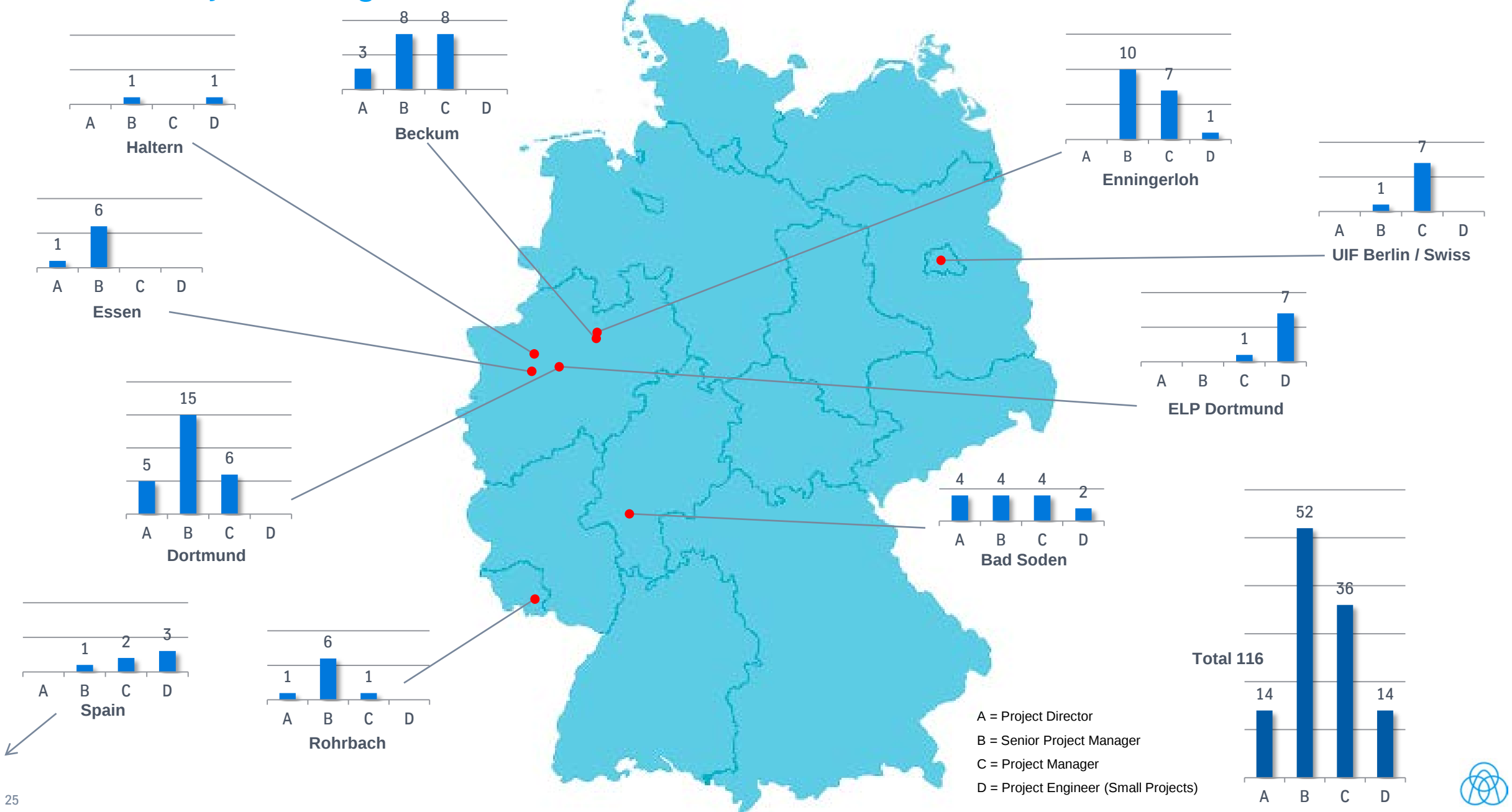
150 plants



Overview Project Managers - Regions

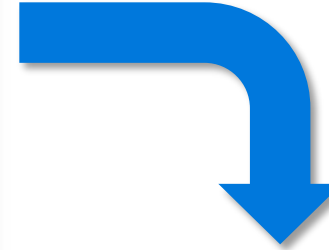
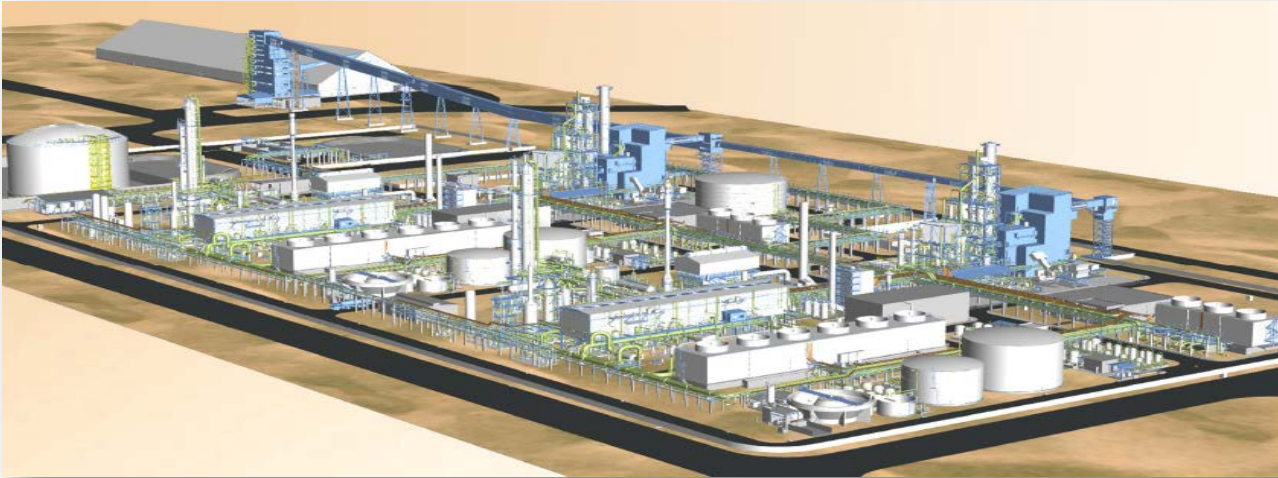


Overview Project Managers – Germany (Europe)

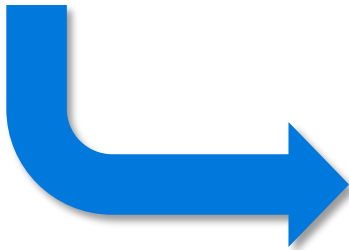


Our Promise

We are an EPC Contractor



We want to serve our clients
and to built their plants !



from **virtual** into **reality** !



Thank you



Q&A