



Unmanned Assets supported by Digital Twin in the future oilfields

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POC / EMIA Digital Transformation Director

Onshore – Offshore GBU

Tel Aviv – 18th of June 2018

TechnipFMC in 3'09"



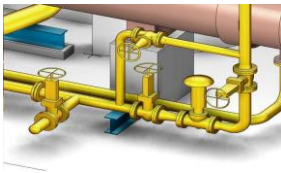
The Digital Twin concept for us



Yesterday we delivered to our clients :

Scattered Documents & data

3D model



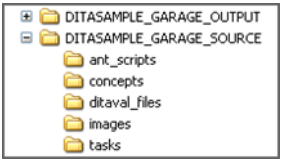
Engineering Documentation



Databases

ID	Item	Description	Quantity	Unit	Category	Material	Material	Material
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2	0000	0000	0000	0000	0000	0000	0000	0000
3	0000	0000	0000	0000	0000	0000	0000	0000
4	0000	0000	0000	0000	0000	0000	0000	0000
5	0000	0000	0000	0000	0000	0000	0000	0000
6	0000	0000	0000	0000	0000	0000	0000	0000
7	0000	0000	0000	0000	0000	0000	0000	0000
8	0000	0000	0000	0000	0000	0000	0000	0000
9	0000	0000	0000	0000	0000	0000	0000	0000
10	0000	0000	0000	0000	0000	0000	0000	0000
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19	0000	0000	0000	0000	0000	0000	0000	0000
20	0000	0000	0000	0000	0000	0000	0000	0000

Vendors Documentation



Inspection Reports



Process & Operation Simulators

44619882500810	41	0	47	19	74	14				
0	511	35	8	04	0	48	223			
2	8717	3	5	8	3	365	865			
51	894909	6433886	3768	942	384988	89	7			
18	0303	07	5	618409	82666	5544	873			
52	196	88	07	17	7	0	4	5	6	
0409	8026409	00258856	55	9	8	87	6	2	5	8
480388	80677	9	1	7	1	2	8	9	84	3
97	8509297	1412010789894729487432980								
81	52	4	1	1	74	82	8	0	1	1
7919	33	100612	5975787188	08	2	2	1			
2648777234217133708	585	9	2	32	0	5	9	4		
8908704851	5170465	2	3	7	9	6	1	8		
884	7	8	1	5	9	6	7	2		
221	4	51	1	174	5	8	8	7	1	1
351	7	8	9	5	0	3	4	6	1	1

One Physical Plant

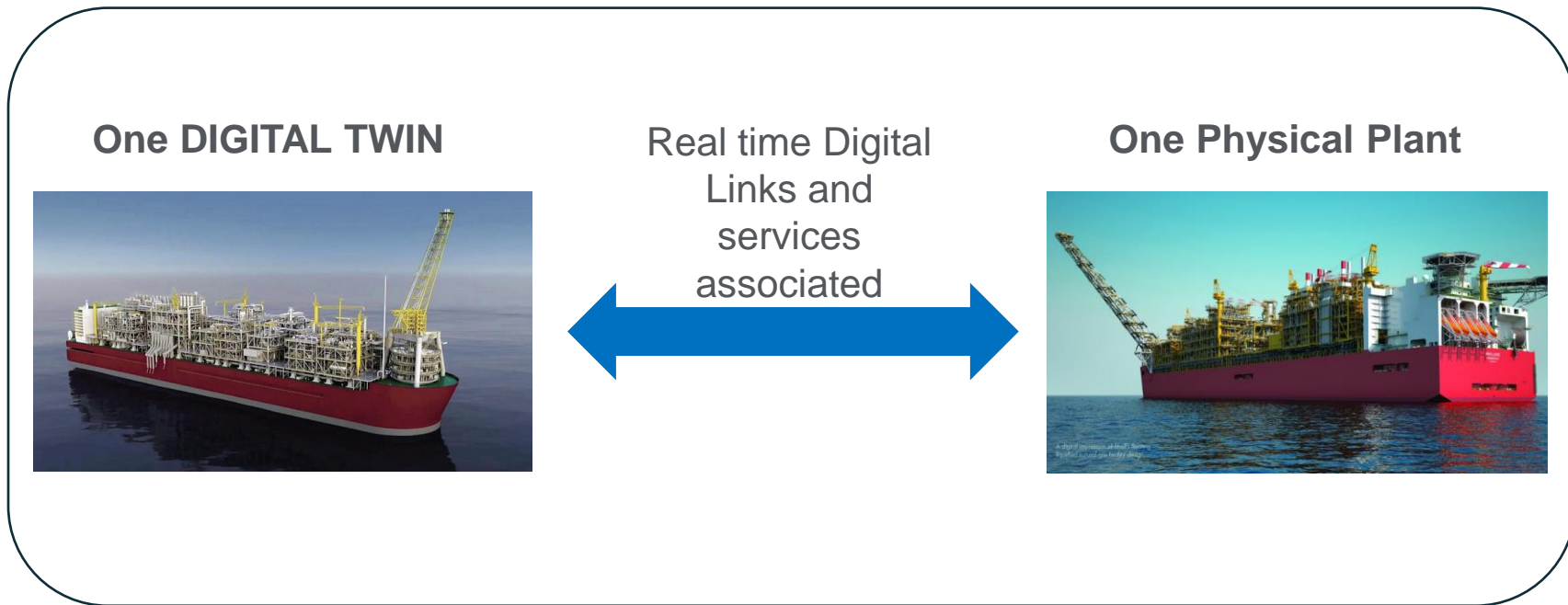


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Tomorrow we will deliver to our clients :

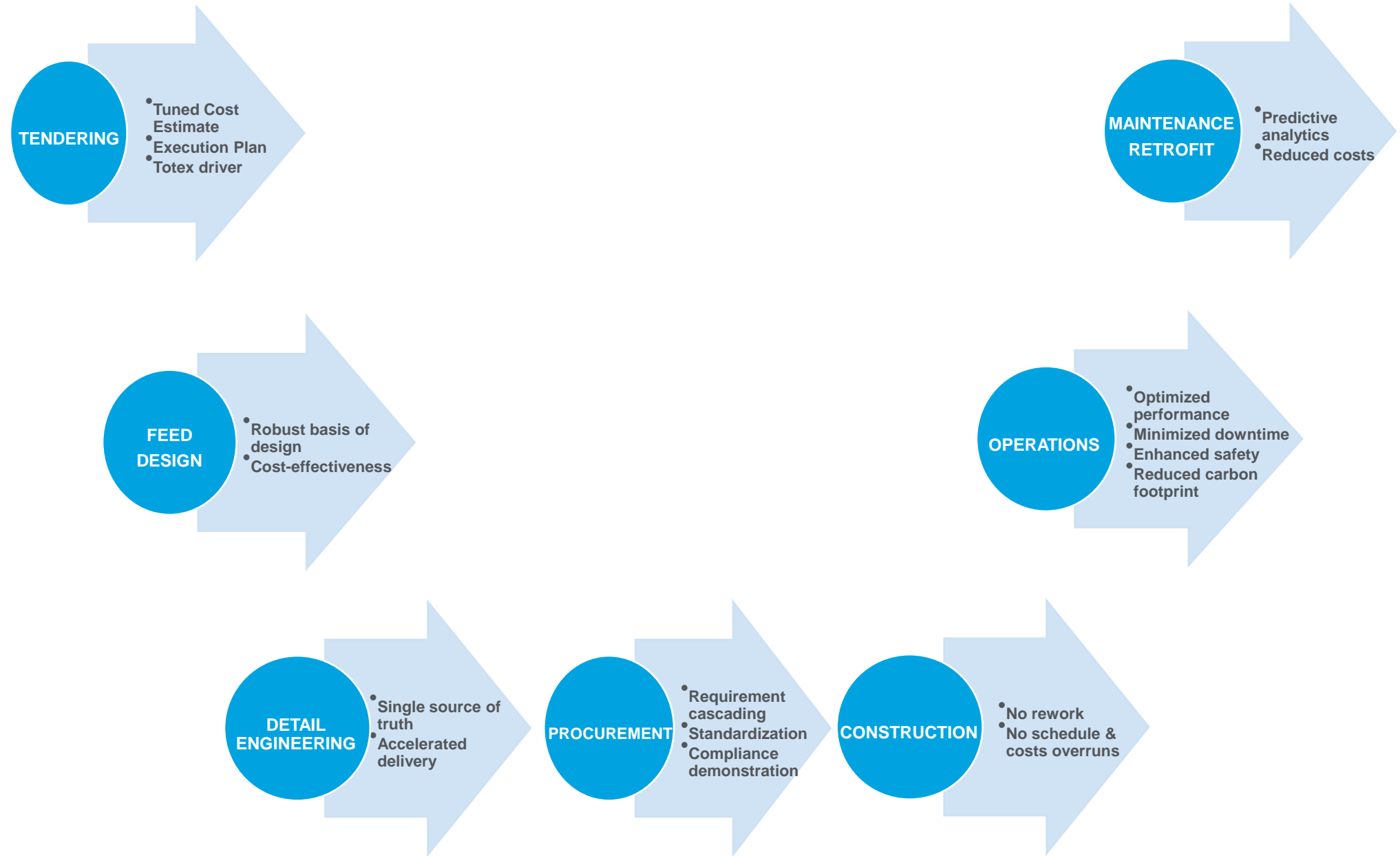
One package able to support client during the complete lifecycle of its asset



It defines a new business model with a new way of working

A Digital Twin to support unmanned Asset

Lifecycle drivers



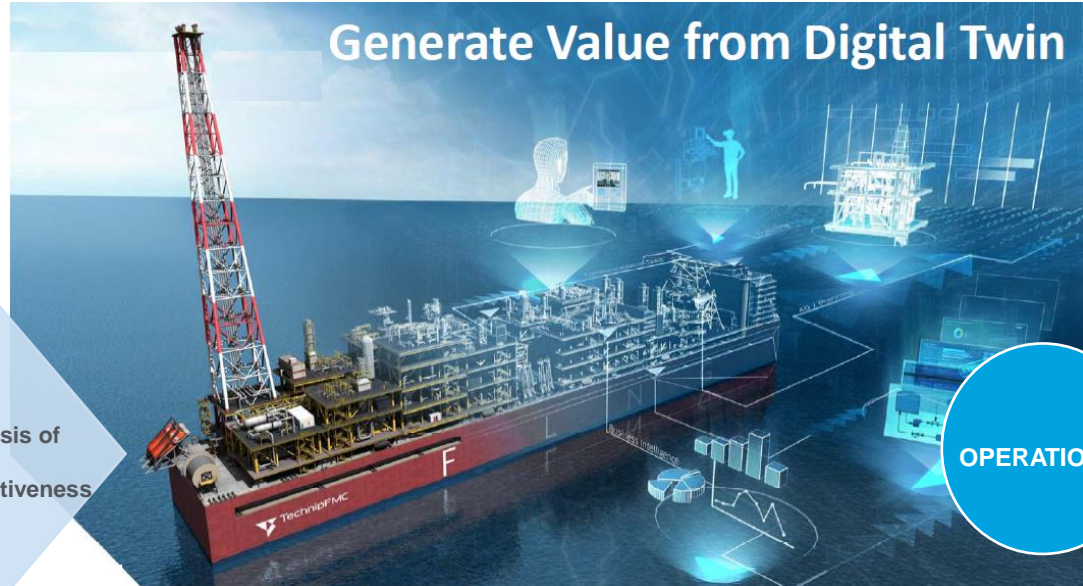
The Digital Twin as the connected vehicle enabling achievements of the asset's lifecycle drivers

Generate Value from Digital Twin



Digital Twin solutions & services

Asset's physical and digital identities merged to ensure continuity of knowledge



TENDERING

- Tuned Cost Estimate
- Execution Plan
- Totex driver

MAINTENANCE RETROFIT

- Predictive analytics
- Reduced costs

FEED DESIGN

- Robust basis of design
- Cost-effectiveness

OPERATIONS

- Optimized performance
- Minimized downtime
- Enhanced safety
- Reduced carbon footprint

DETAIL ENGINEERING

- Single source of truth
- Accelerated delivery

PROCUREMENT

- Requirement cascading
- Standardization
- Compliance demonstration

CONSTRUCTION

- No rework
- No schedule & costs overruns

... Simulators (Operator Training / Immersive Training)...



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Solutions

- Feedback ; BI
- Modular digital offerings

Services

- As-Quoted

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- Data-centric
- Simulations
- Reqs mgt
- Lifecycle Mgt

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Solutions

- OTS ; ITS ; AI
- Remote Expertise
- Remote Operations
- IoT ; Analytics ; BI

Services

- As-Trained
- As-Handed Over
- As-Started
- As-Operated



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- Data-centric ; Reqs Mgt
- Simulations ; 4D
- EasyProject; Collaborat[®]

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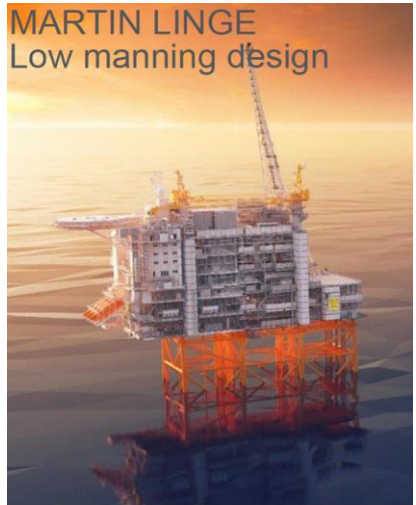
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- EasyPlant ; 4D
- Robotics ; Drones
- 3D Printing

Services

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...Remote Integrated Operations / Robotics...



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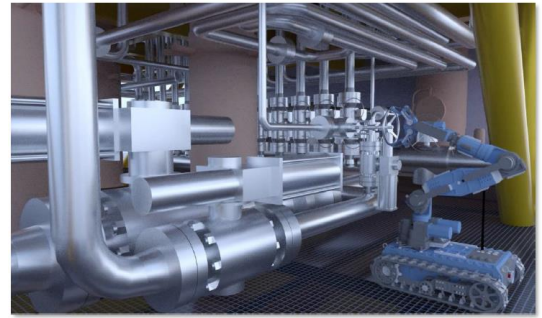
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... IoT / Data-analytics / Predictive Maintenance...

Time to Trip prediction

Value Prop:

Provide LNG operators the ability to forecast equipment critical trips weeks and months in advance

- ✓ New physics-based analytics for over +2500 LNG plant assets
- ✓ Automated insights
- ✓ Risk Ranking
- ✓ Leveraging GE's APM



MAINTENANCE RETROFIT

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- Solutions**
IoT ; Analytics
AI ; Robotics;
Spare parts
3D-Printing
- Services**
As-Maintained
As-Retrofit



FlowManager®

The digital twin – representing the true physics of the assets in near real-time



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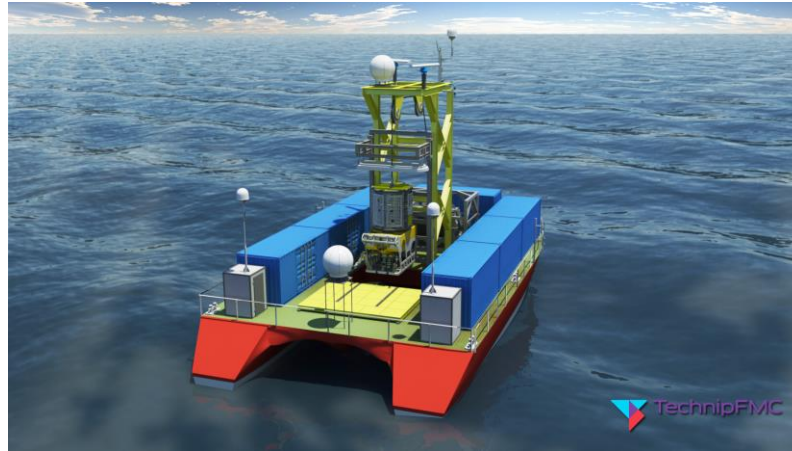
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... Unmanned Surface Vessel to deploy a Remotely Operated Vehicle ...



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Take away

Low Manned / Unmanned assets journey will be successful provided:

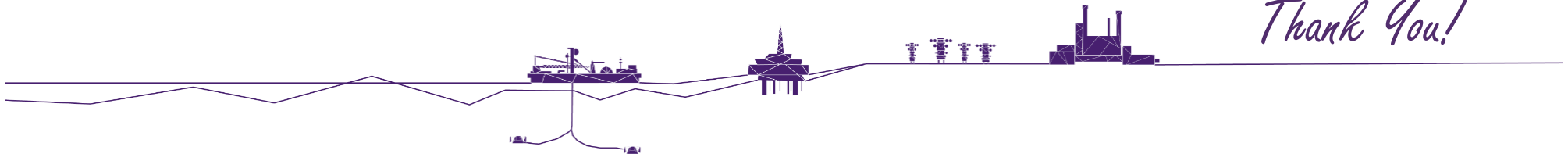
- **Continuity of information through out life cycle**
- **Data centric mindset**
- **Digital twin as an enabler**
- **Major transformation gathering not only technology but also people, work processes and organizations**

Questions?



«Smarter & Faster»

Our culture upgrade backed by digital



Thank You!