

**ANIE**  
AUTOMAZIONE



# *Prototipazione e Virtualizzazione*

*Massimiliano Spano / Leonardo Cipollini*



**SIEMENS**

# Progettazione Tradizionale

**1** Progettazione meccanica



Creazione prototipo **3**

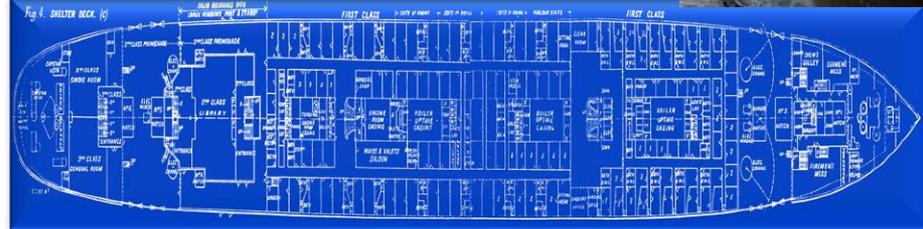
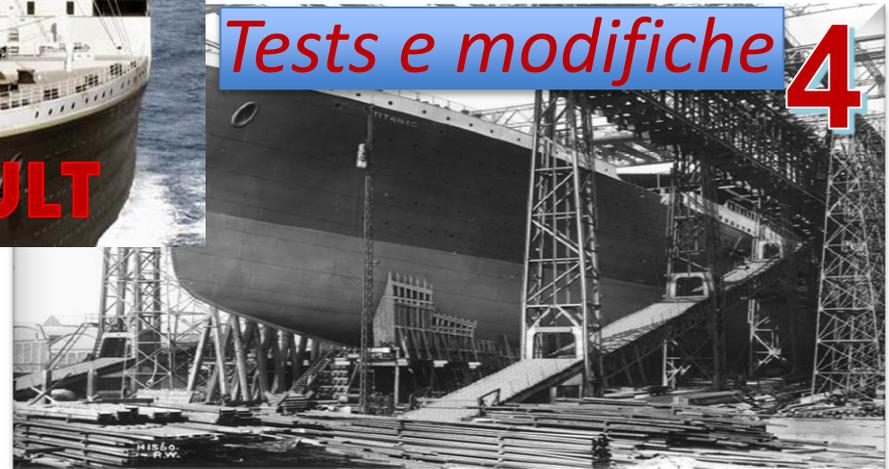


**2** Progettazione elettrica



**RESULT**

Tests e modifiche **4**



**1-2**

**Approcci**

SIS  
DIG

ICT

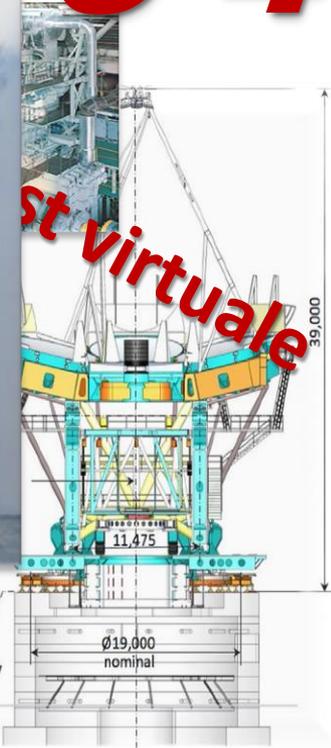
CAD SIMULAZIONE  
E PROGETTAZIONE

SISTEMI  
ELETTROMECCANICI

**Modello virtuale = Risultato**

**3-4**

**Modello virtuale**



track  
Telescope/ pier  
interface level  
Front section-view  
@ zenith

# Progettazione Integrata

Distance	Slave	Type
0.0	0.0	Cubic
100.000	0.8447	Cubic
120.00	0.3385	Cubic
180.0	1.8836	Cubic
240.00	2.4325	Cubic
300.0	4.8322	Cubic
360.0	7.3322	Cubic
420.0	10.9378	Cubic
480.00	15.427	Cubic
540.0	20.844	Cubic
600.0	25.568	Cubic
660.0	33.116	Cubic
720.0	40.195	Cubic
780.0	47.658	Cubic
840.0	55.408	Cubic
900.0	63.296	Linear
9750.0	360.65	Cubic
10750.0	308.5426	Cubic
18200.0	316.25	Cubic
19200.0	323.63	Cubic
19800.0	328.49	Cubic

Master: Position Velocity Acceleration Jerk  
OK Cancel  
APP

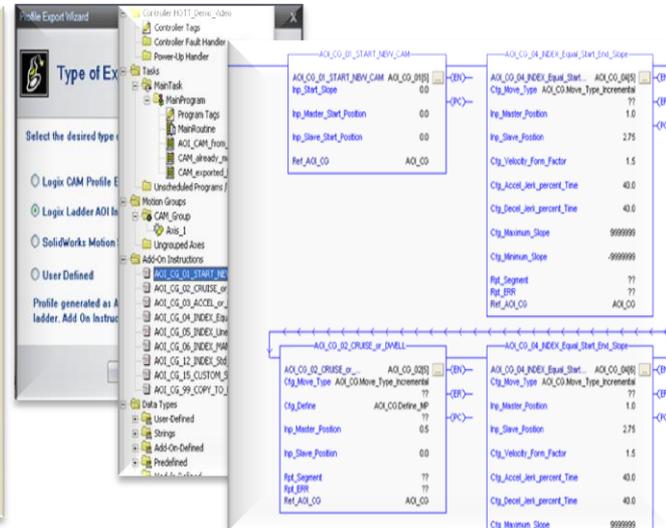
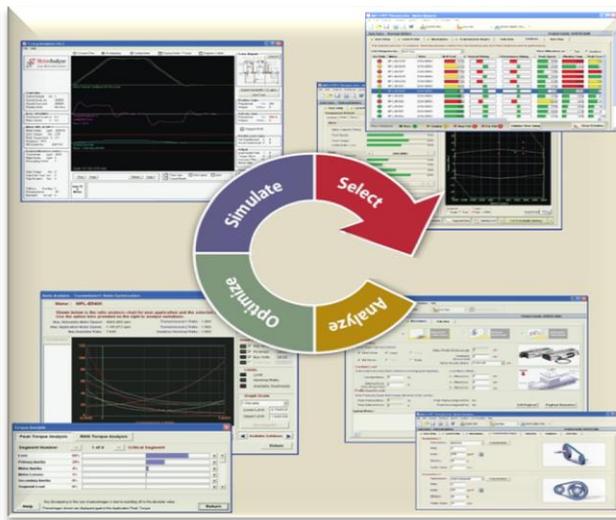
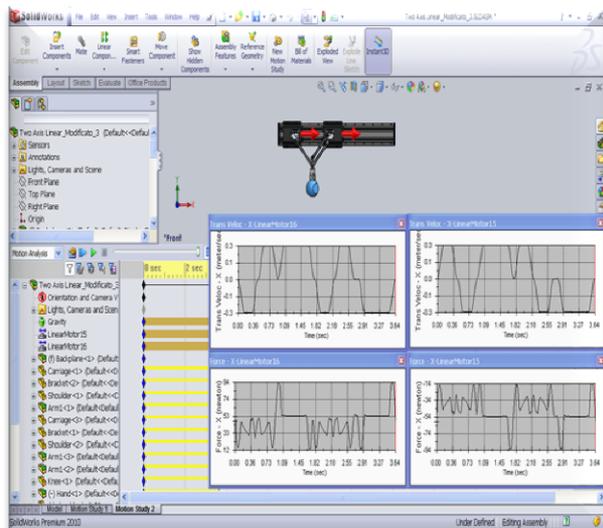
**Analisi, Progettazione, Simulazione e Ottimizzazione sono le parole chiave!**

# Sviluppo congruo ed efficace

## CAD Meccanico

## Tool di Simulazione

## PLC

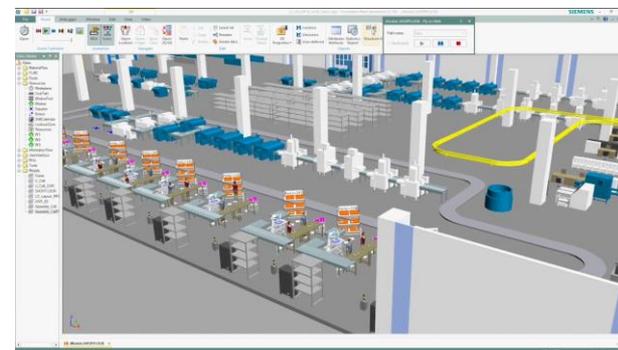
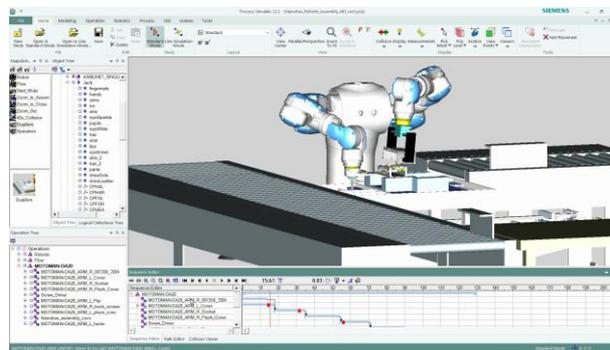
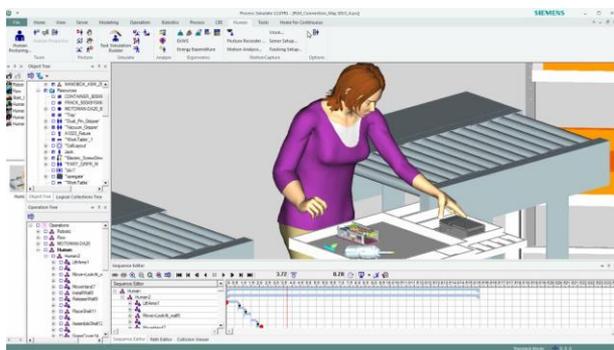
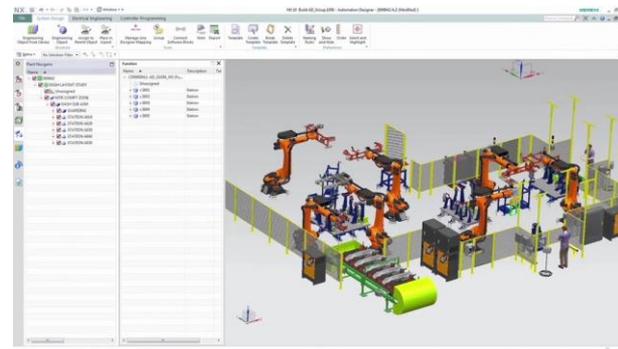
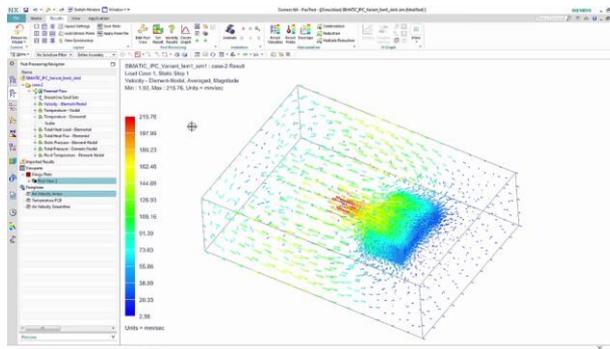
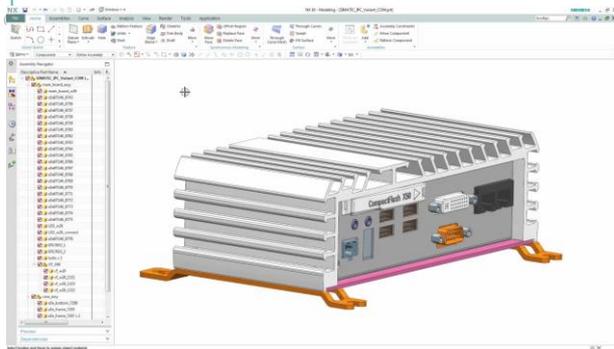


**Progettazione**  
**Motion Analysis**  
**Plot diagrammi di forza**

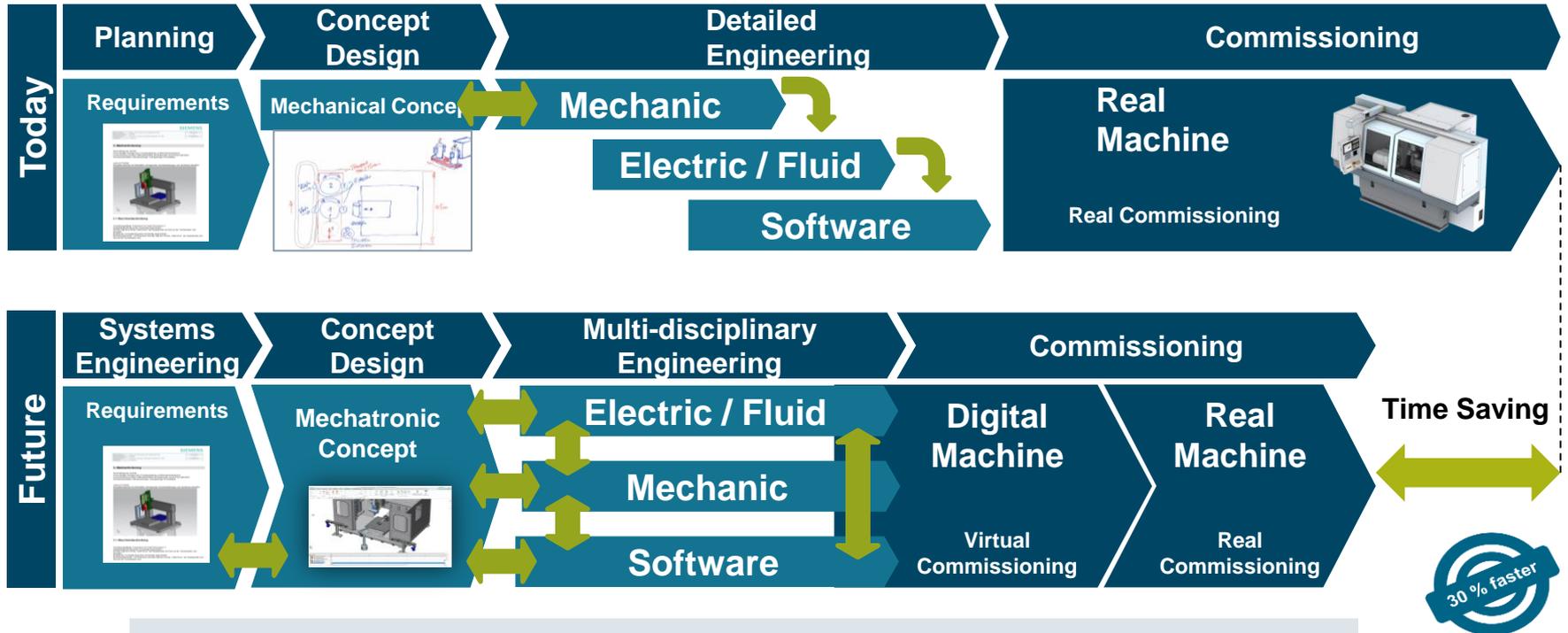
**Analisi**  
**Simulazione**  
**Ottimizzazione**  
**Selezione**

**Esportazione / Importazione**  
**AOI Instruction**  
**CAM Profile**

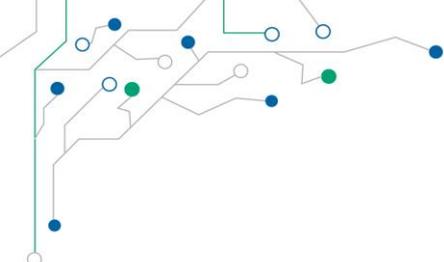
# Digital Twin del prodotto e del processo in ogni fase del ciclo di vita



# Advanced Machine Engineering

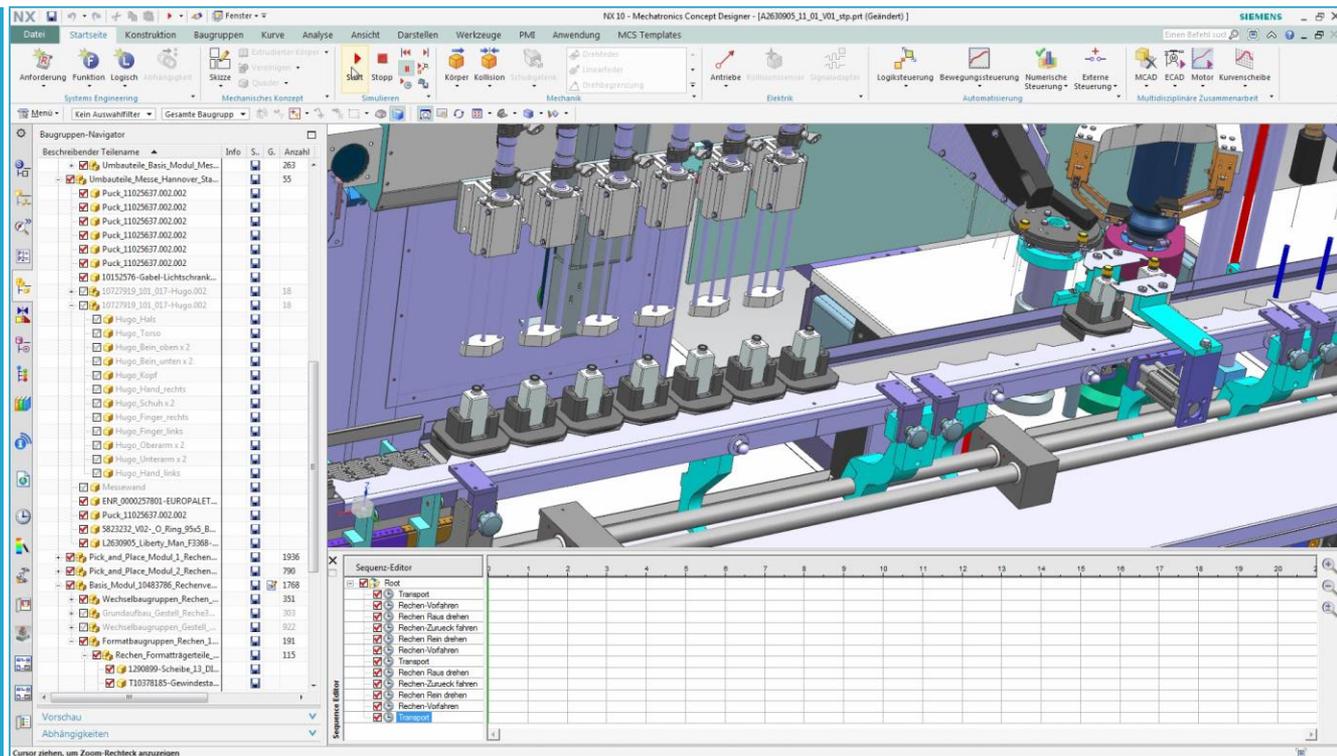


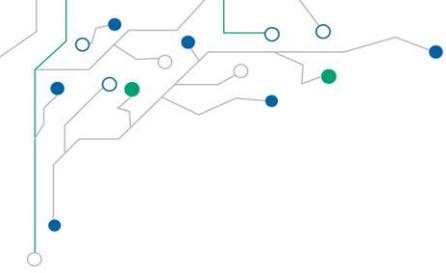
*Riduzione dei tempi dal concept della macchina al suo delivery*



# Mechatronic Design

Integrated mechatronic design and concept validation



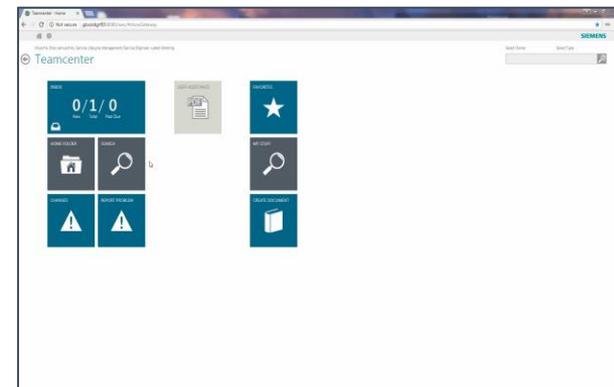
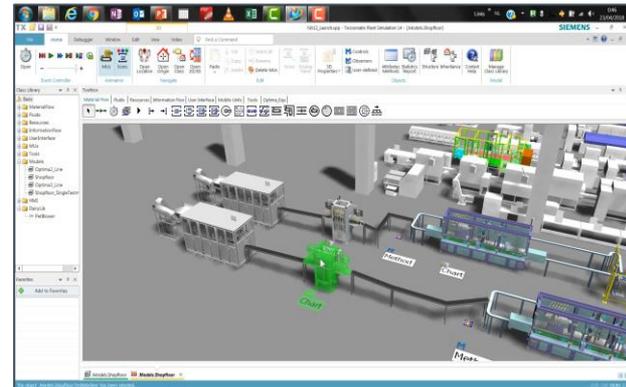
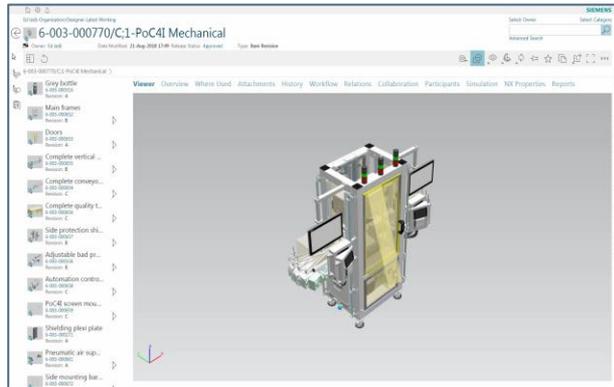
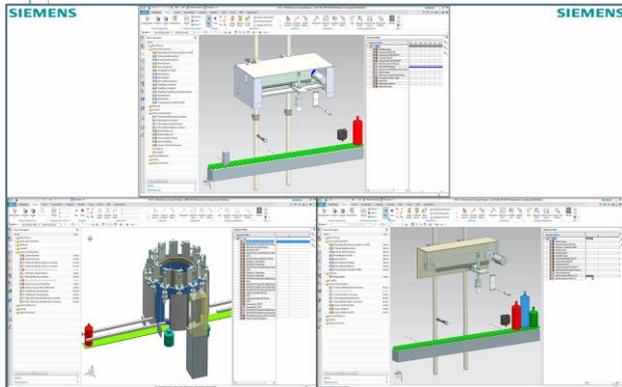


# Virtual commissioning

Seamless  
connection of the  
digital model to the  
real world



# Utilizzo del Digital Twin nella progettazione di macchine



# Benefici e vantaggi competitivi



*Criticità di realizzazione  
della macchina annullate*

*Time To Market ridotti*

**Maggior potere innovativo  
(verifica e validazione senza rischi)**



*Tempi di messa in  
funzione-test ridotti*

*Risparmio economico  
e ottimizzazione delle risorse*

**criticità**



*Sfruttando le potenzialità di queste tecnologie è possibile fare un  
significativo passo in avanti nelle performance produttive*

# MECHATRONICS: THE FUTURE IS TODAY

