



核能
Nuclear Power

北京广利核系统工程有限公司
China Techenergy Co., Ltd.

Being Digital: The Road to Intelligence

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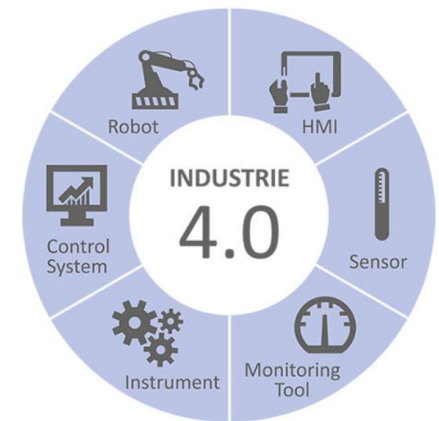
April 15, 2019

善用自然的能量

1. Digitalization Status

Current status

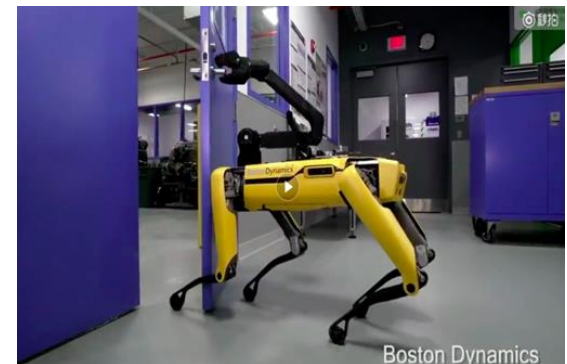
- Digitalization is a buzz word in industry area;
- Different solutions are purposed;
- Digital I&Cs have become the standard design for newly-build plants and modification of operating plants;
- But further digitalization seems like a one-sided enthusiasm, still more on paper than actual application.



1. Digitalization Status

What is digitalization?

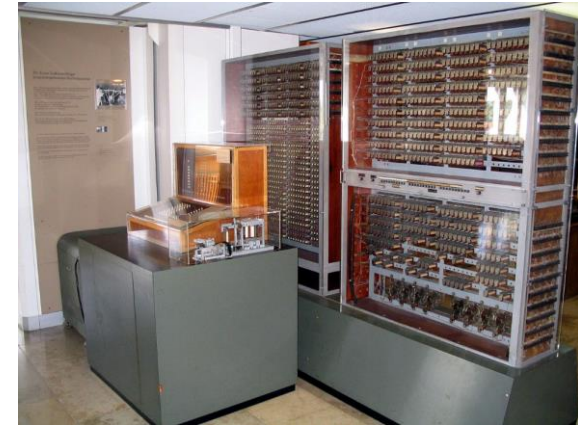
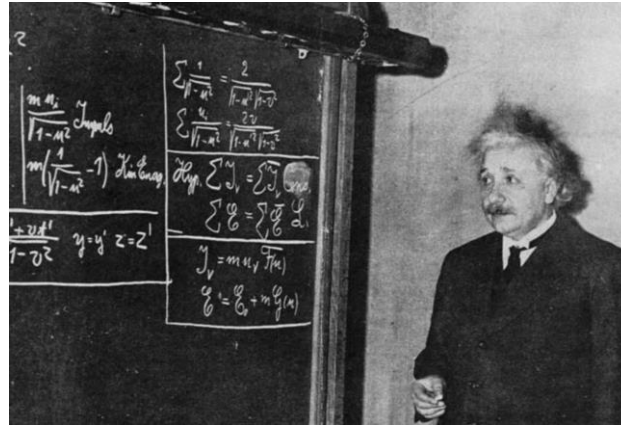
- Digitalization is a pathway/tool for us to understand the universe, communicate that knowledge, and create a better world.



1. Digitalization Status

Look back at history

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The change from atoms to bits is irrevocable and unstoppable
 - Nicolas Negroponte

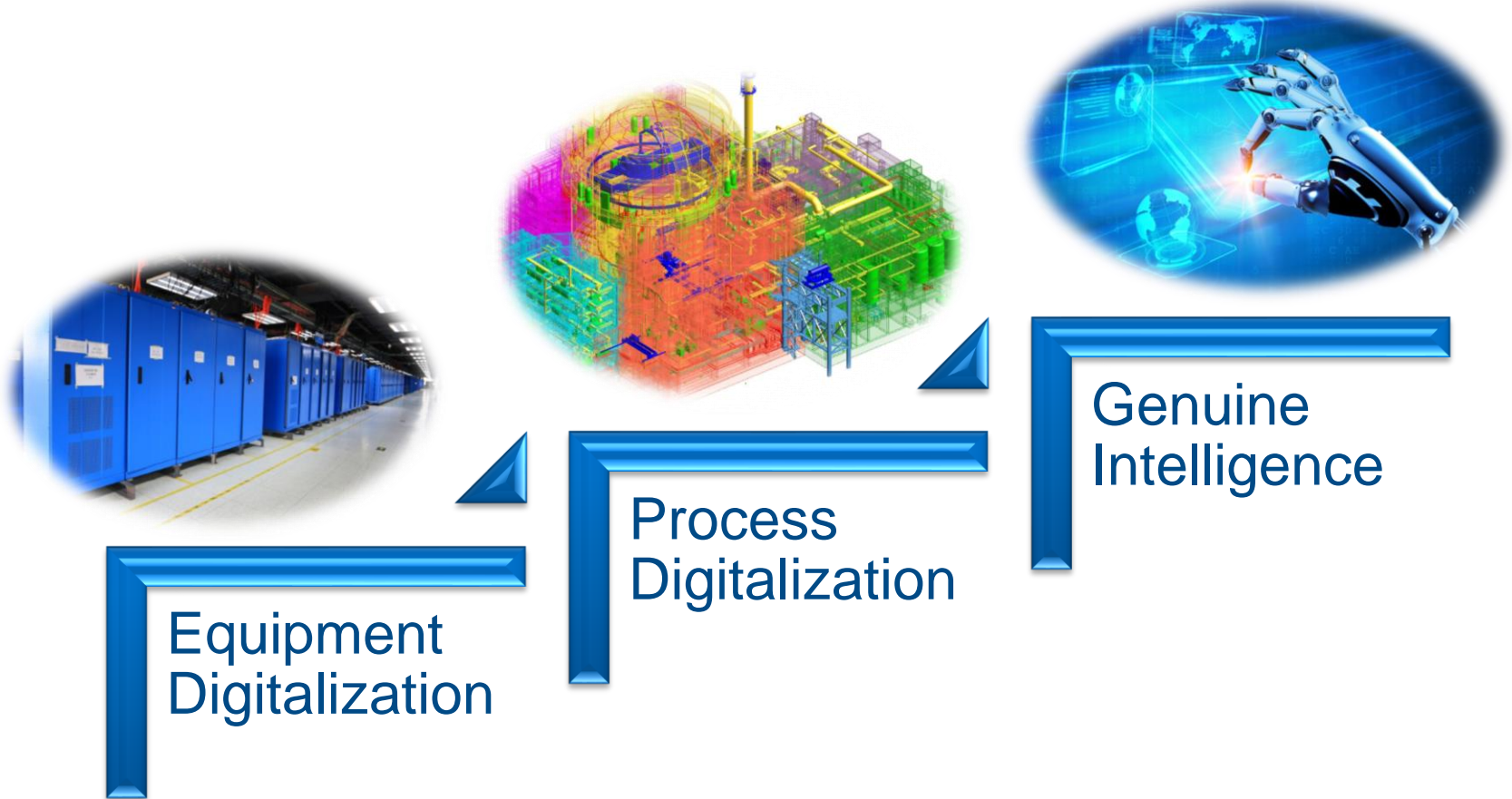
1. Digitalization Status

Future objective of digitalization



2. Roadmap of Digitalization

CTEC's view



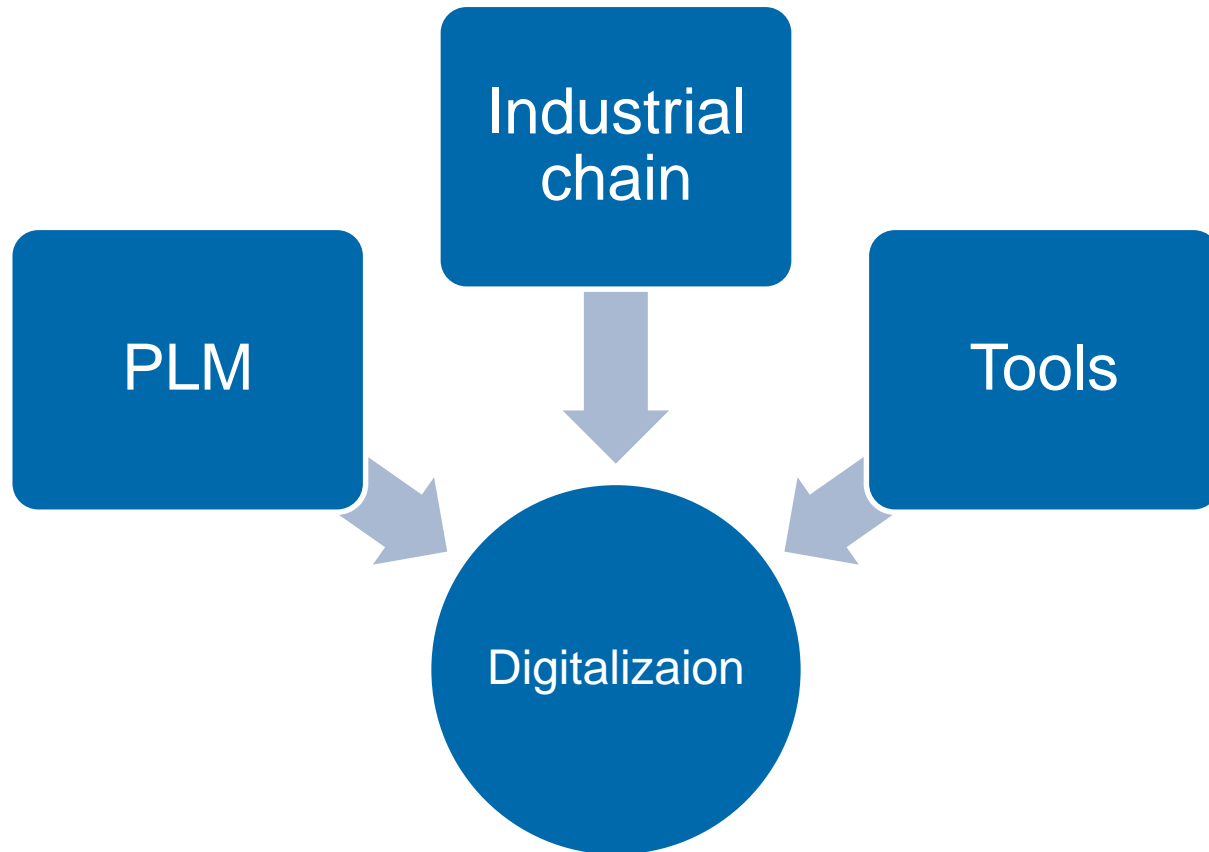
2. Roadmap of Digitalization

Equipment Digitalization



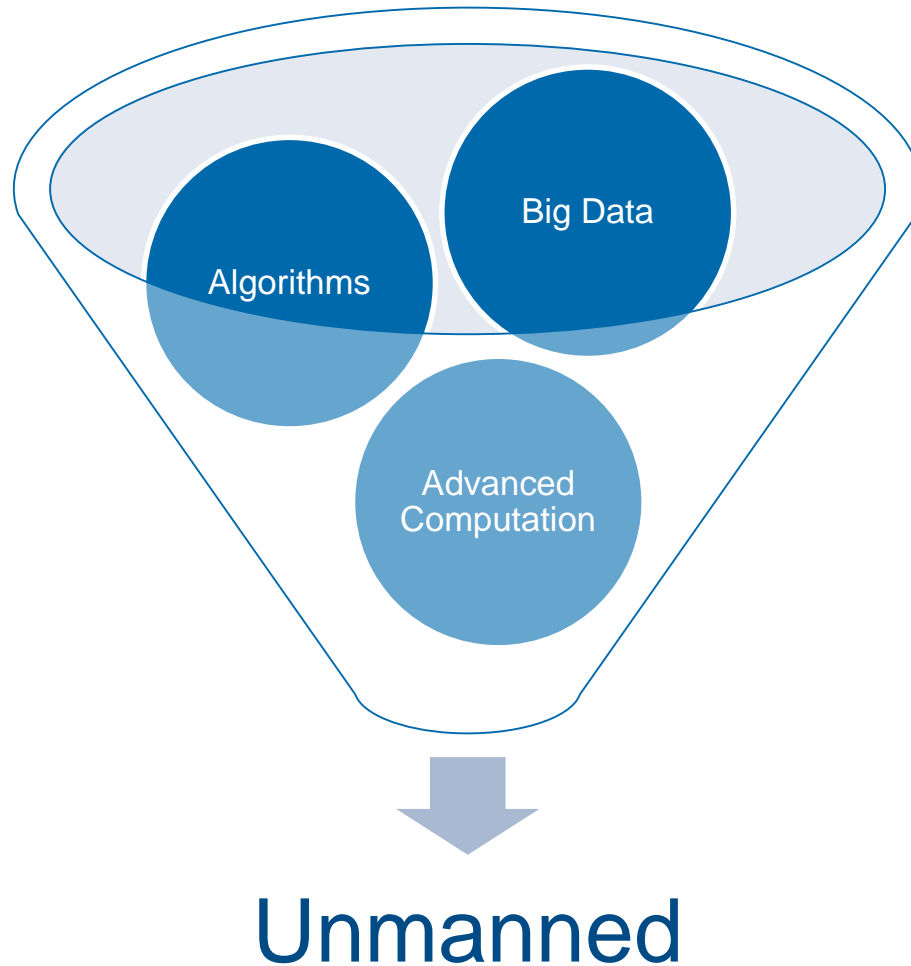
2. Roadmap of Digitalization

Process Digitalization



2. Roadmap of Digitalization

Genuine Intelligence



2. Roadmap of Digitalization —— CTEC's Digital I&C Platforms



FirmSys

Safety I&C system platform



HOLLiAS-N

Non-Safety I&C system platform



EmInfoSys

Emergency information system



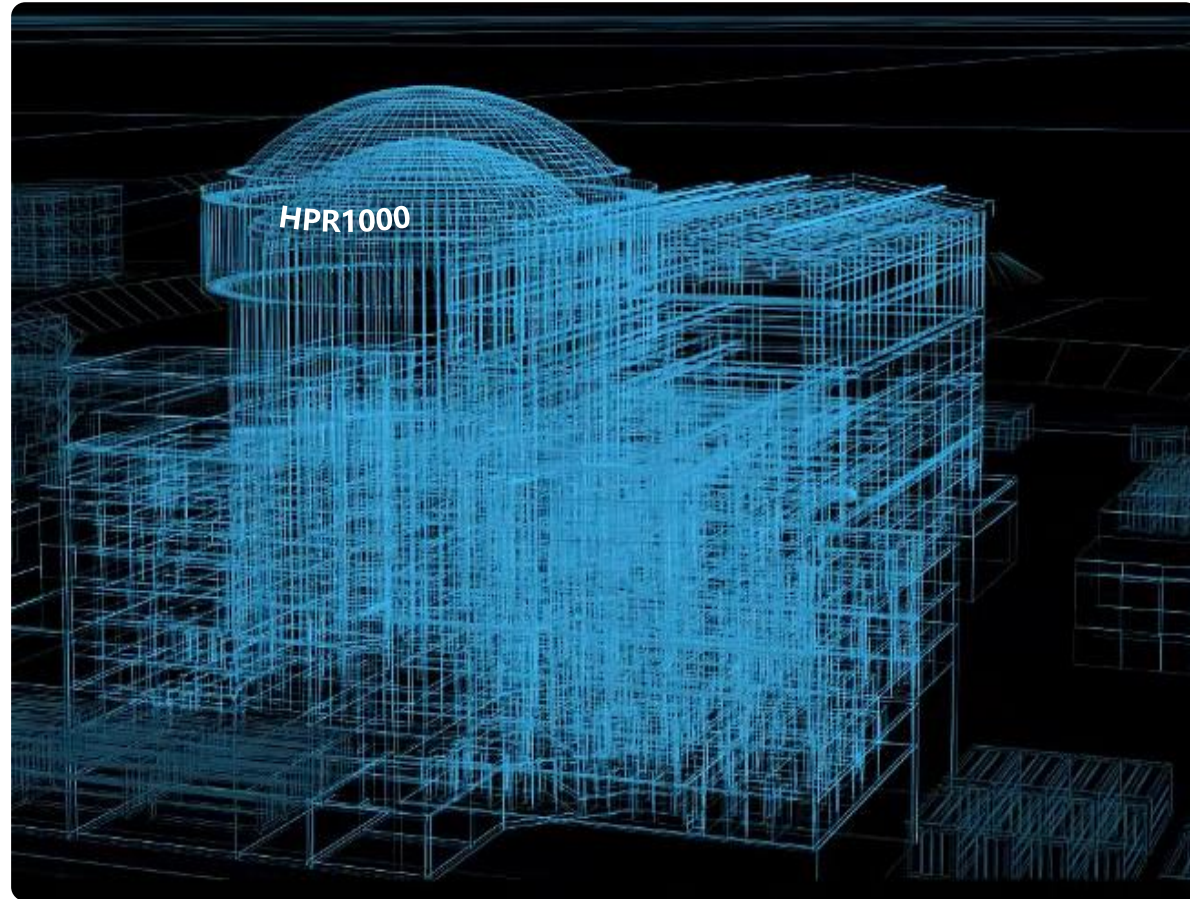
SpeedyHold

Specified I&C system platform



FitRel

Diversity I&C platform
based on FPGA technology



2. Roadmap of Digitalization ——CTEC's I&C Supply Chain

China's Nuclear Safety Authorities

Company General Management

Project Management

Quality Assurance: Full-life-cycle Process

Customer requirement

R&D

Engineering design

Procurement

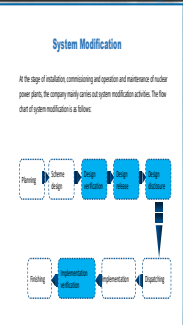
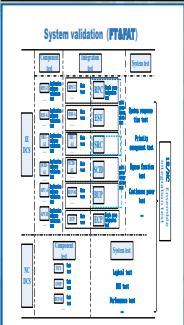
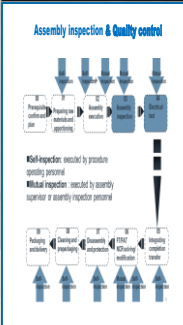
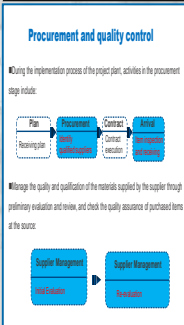
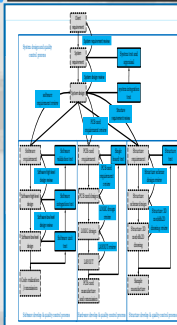
Manufacturing

System Integration

Test and V&V

Technical Support & Service outsourcing

Customer



Qualification and V&V



Industry chain of I&C

2. Roadmap of Digitalization

CTEC's Cooperation



3. Issues & Suggestions

Always focus on the value brought by digitalization

The level of automation or intelligence level we should choose

Extensive cooperation beyond I&C area

Thank you !