



SCE

Siemens Automation Cooperates with Education

SCE Digitalization Concept –

Comprehensive support for educators on the journey to Industry 4.0

DE

EN

ES

FR

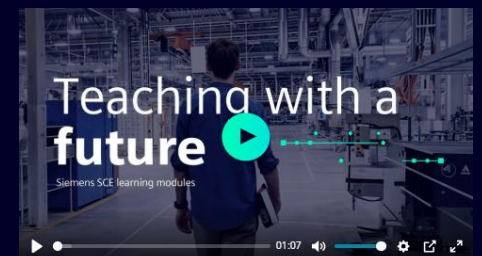
IT

PT

ZH

Global
Industry
Partner

worldskills



SIEMENS



SCE Digitalisierungskonzept – Umfassende Unterstützung für Lehrende auf dem Weg zu Industrie 4.0

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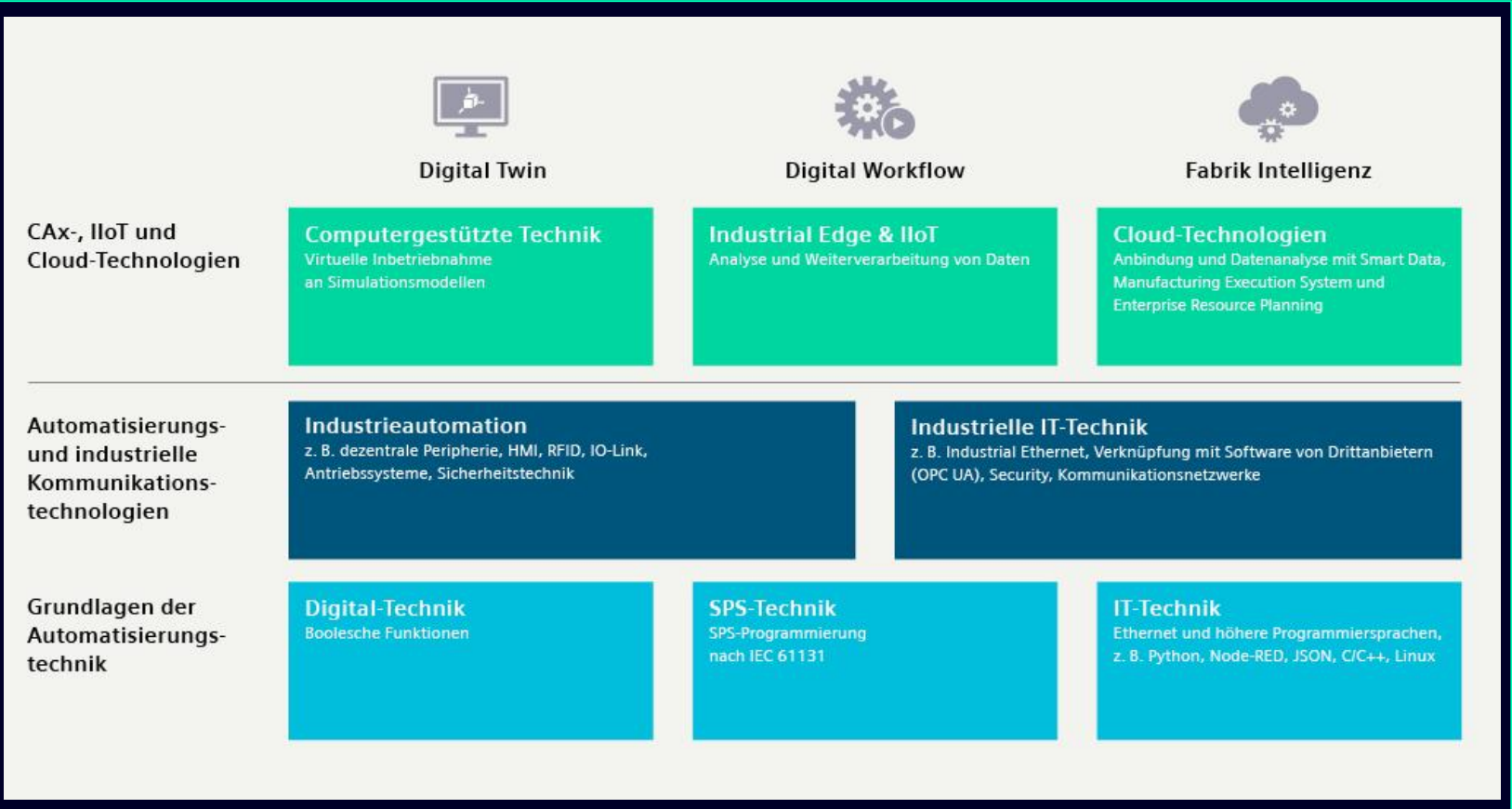
SCE Digitalisierungskonzept –

Im Berufsleben sind interdisziplinäre Skills der Schlüssel für den Erfolg

Neue Kompetenzprofile

Interdisziplinären Kompetenzen...	
Technologie Wissen	Ganzheitliches Systemverständnis
Simulationstechniken	Agile Entwicklungsprozesse
Rechnergestützte Produktenwicklung	Design Thinking
Verständnis von Wertschöpfungsketten	IT Know-how
Modellierung	...
Überfachliche Kenntnisse...	
Problemlösefähigkeit	Dynamisches Lernen
Kommunikations- und Teamfähigkeit	Eigenständigkeit/-Motivation
Umgang mit Komplexität	...

Mehrstufiges Konzept zur ganzheitlichen Wissensvermittlung



SCE Digitalisierungskonzept – Traditionelle Berufsbilder verschmelzen immer stärker...

Maschinenbau

Digital Twin, Digital
Workflow, Multiuser

Automatisierungstechnik

Edge Computing, künstliche
Intelligenz, IIoT

Informationstechnik

Fabrik Intelligenz,
cloudgestützte Systeme

Mechatronik

Mechanik, Elektronik, Robotik, Sensoren,
Aktoren, Antriebssysteme...

Industriearomatisierung

SPS, HMI, TIA Portal, RFID, IO-Link,
Sicherheitstechnik...

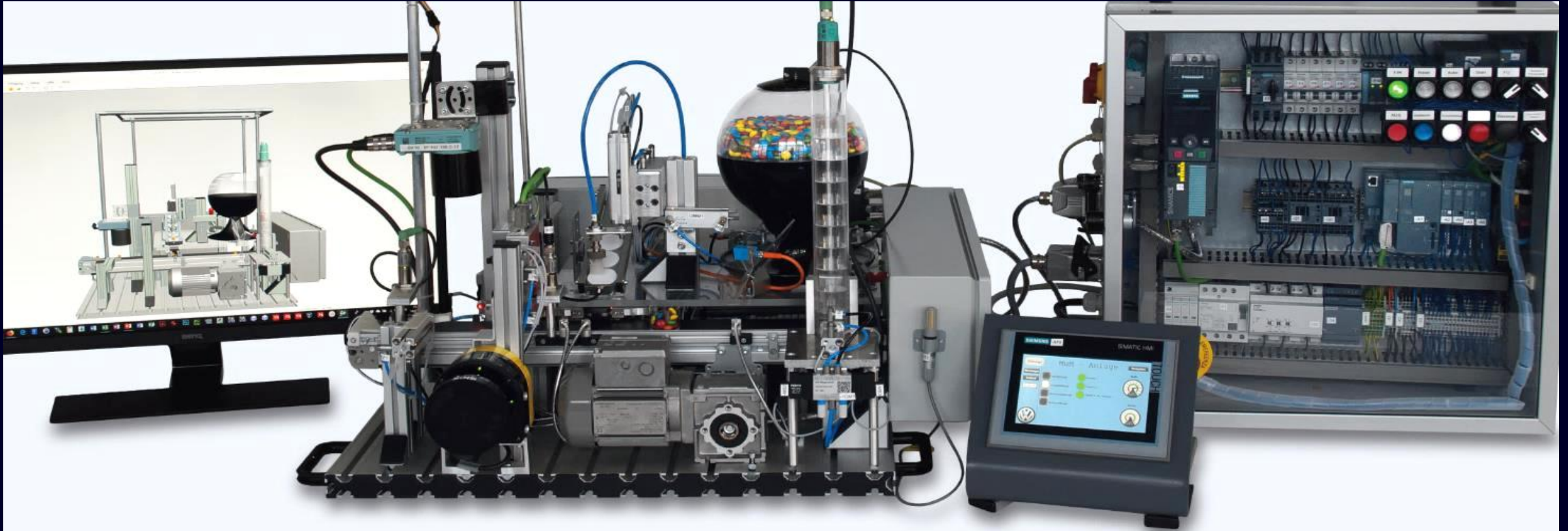
Industrielle IT-Technik

z.B. Industrial Ethernet, Anbindung
Drittanbieter (OPC UA), Security...



SCE Digitalisierungskonzept – umgesetzt von der Berufsbildenden Schule 2 Wolfsburg in einer Projektarbeit

Best Practice **Umsetzung durch BBS 2 Wolfsburg. Nicht erwerbbar!**



1. Intuitives TIA Portal Engineering der realen Automatisierungsanlage mit SIMATIC S7-1500/ET 200SP/RFID/SCALANCE/SINAMICS
2. Virtuelle Inbetriebnahme mit Hilfe des Digital Twin in Siemens NX-MCD CAD-Software
3. Cloudanbindung mittels IOT2050 zur Auswertung der Produktionsdaten

SCE Digitalisierungskonzept –

Im Berufsleben sind interdisziplinäre Skills der Schlüssel für den Erfolg

Digitalisierung verändert unsere Welt schnell und radikal.

Was bedeutet das für Ausbildung und Lehre?

Viele Schulen, Hochschulen und betriebliche Ausbildungsstätten stehen vor der Herausforderung, Industrie 4.0-Wissen in Ausbildung und Lehre zu vermitteln.
Um Lehrende und ihre Auszubildenden sowie Studierenden auf dem Weg zur Industrie 4.0 zu unterstützen, konzipierte SCE ein ganzheitliches Digitalisierungskonzept für Bildungseinrichtungen.

[➤ zum SCE Digitalisierungskonzept](#)



Weiterführende Informationen

[Die Zukunft der Industrie](#)

[Solid Edge Learning Ressourcen
für Lehrende/Lernende](#)

[DigiTwin Lern-/Lehrmodule](#)

[Use Cases](#)

[TIA Portal & SIMIT SW
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[Siemens Xcelerator: Beschleunigen Sie Ihre digitale Transformation](#)



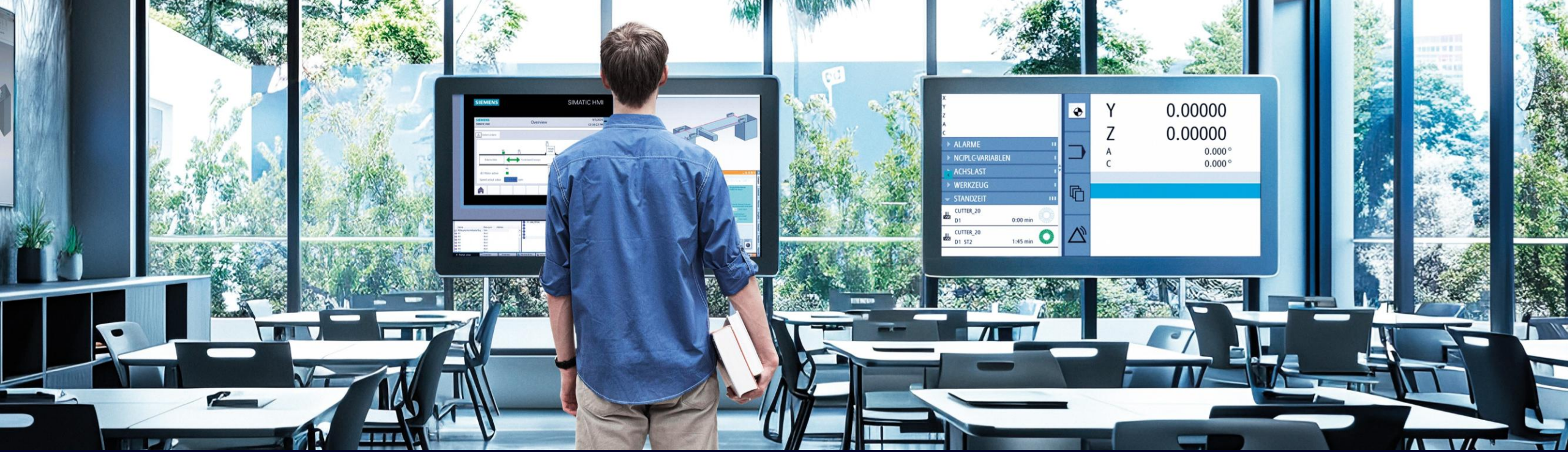


SCE Digitalisierungskonzept – Umfassende Unterstützung für Lehrende auf dem Weg zu Industrie 4.0

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SCE Digitalization Concept – Comprehensive support for educators on the journey to Industry 4.0

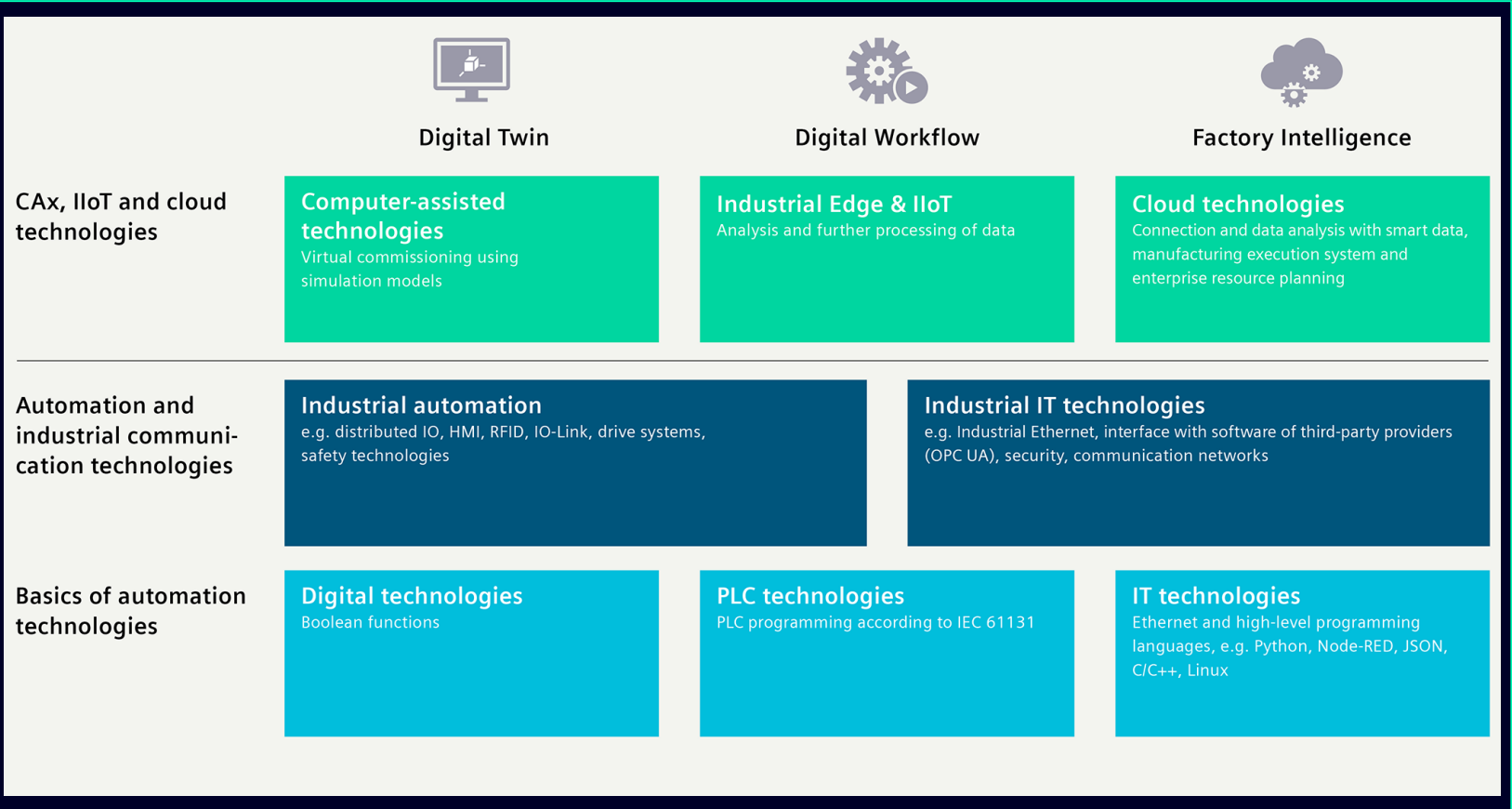
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SCE Digitalization Concept – Interdisciplinary skills are the key to professional success.

New competency profiles

Interdisciplinary competences...	
Technological knowledge	Comprehensive system understanding
Simulation techniques	Agile development processes
Computer-aided product development	Design thinking
Understanding of value chains	IT expertise
Modeling	...
Interdisciplinary knowledge...	
Problem-solving ability	Dynamic learning
Communication skills and ability to work in a team	Independence/self-motivation
Dealing with complexity	...

Multi-stage concept for holistic knowledge transfer



SCE Digitalization Concept – Traditional job descriptions are increasingly merging...

Mechanical engineering

Digital twin, digital workflow, multiuser

Automation technology

Edge computing, artificial intelligence, IIoT

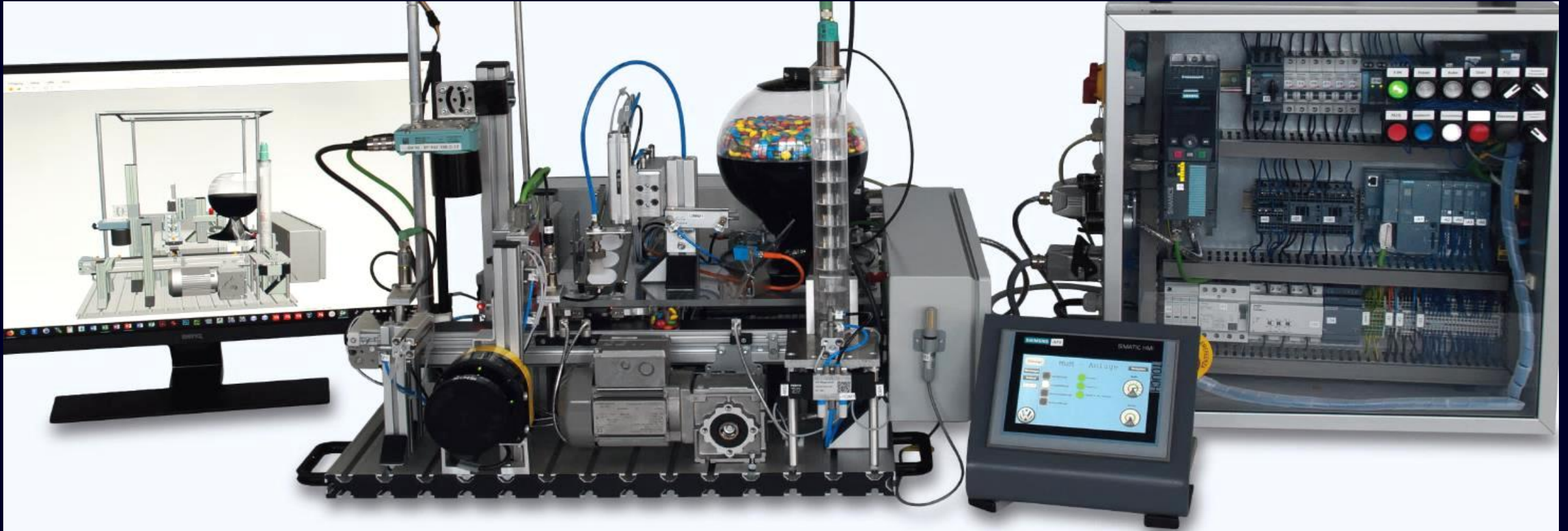
Information technology

Factory intelligence, cloud-based systems



SCE Digitalization Concept – Implemented by Vocational School 2 in Wolfsburg, Germany in a group project

Best Practice: Implementation by BBS 2 Wolfsburg. Not available for purchase!



1. Intuitive TIA Portal engineering of the real automation plant with SIMATIC S7-1500/ET 200SP/RFID/SCALANCE/SINAMICS
2. Virtual commissioning with the help of the digital twin using Siemens NX-MCD CAD software
3. Cloud connection via IOT2050 for evaluation of production data

SCE Digitalization Concept – Interdisciplinary Skills are the key to professional success

Digitalization is quickly and radically changing our world.

What does this mean for education?

Many schools, colleges and universities are facing the challenge of conveying Industry 4.0 know-how as part of their teaching and training. In order to support educators and their students on their way to Industry 4.0, SCE created a digitalization concept for educational institutions

[↗ Discover the SCE Digitalization Concept](#)

Additional information

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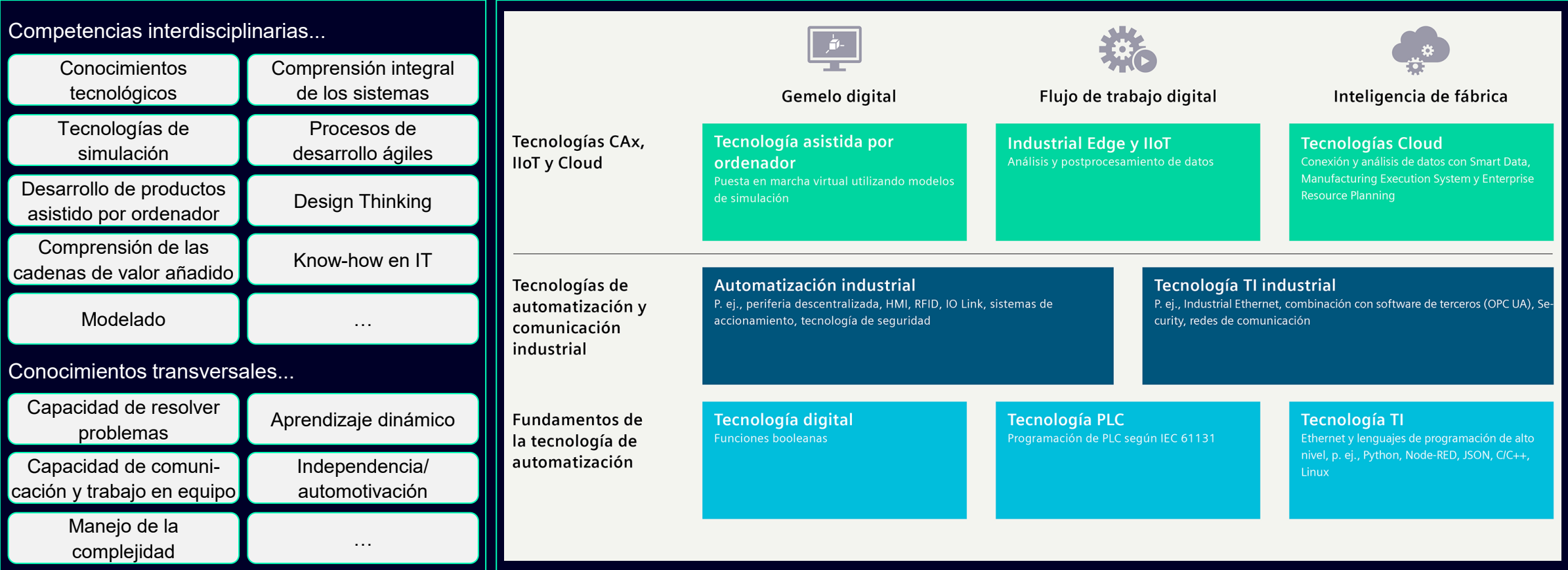
Concepto de digitalización de SCE – Soporte integral para educadores en el camino hacia la Industria 4.0

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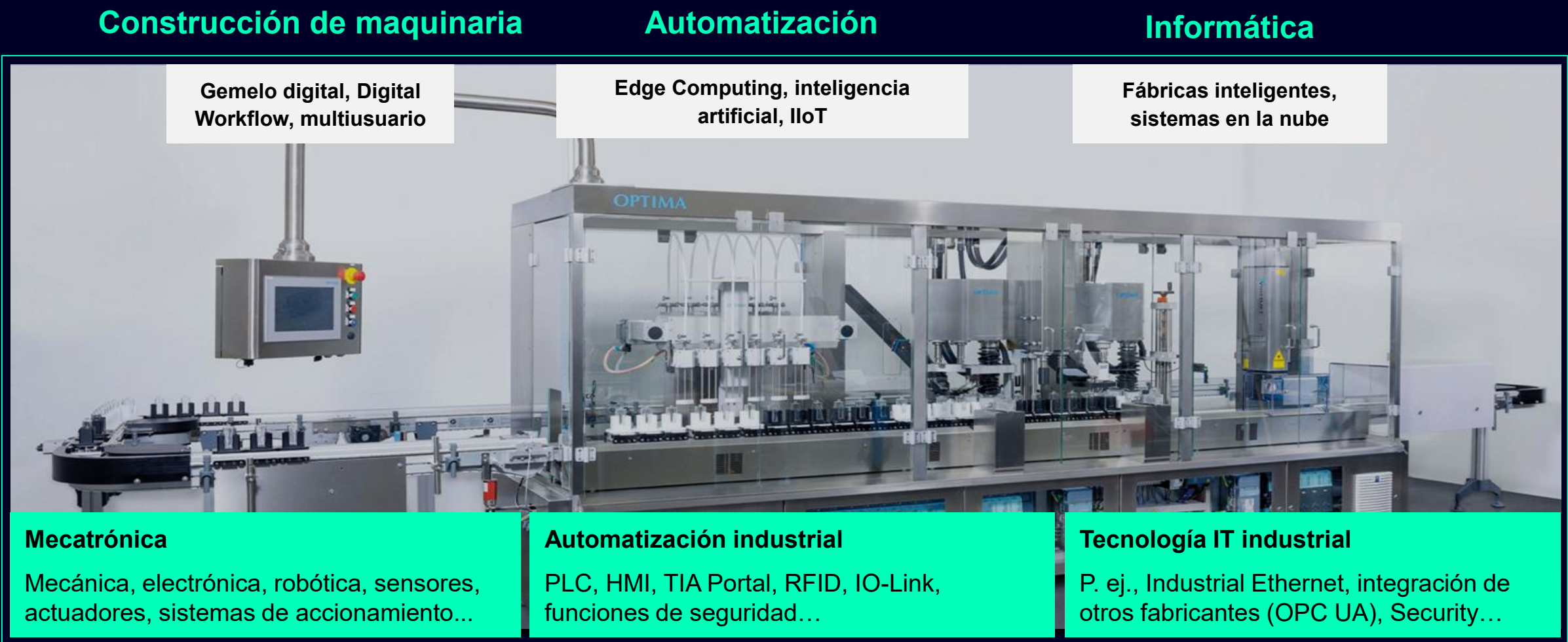


Concepto de digitalización de SCE – en la vida profesional, las habilidades interdisciplinarias son imprescindibles para el éxito

Nuevos perfiles de competencias Sistema de varios niveles para una transmisión de conocimientos integral

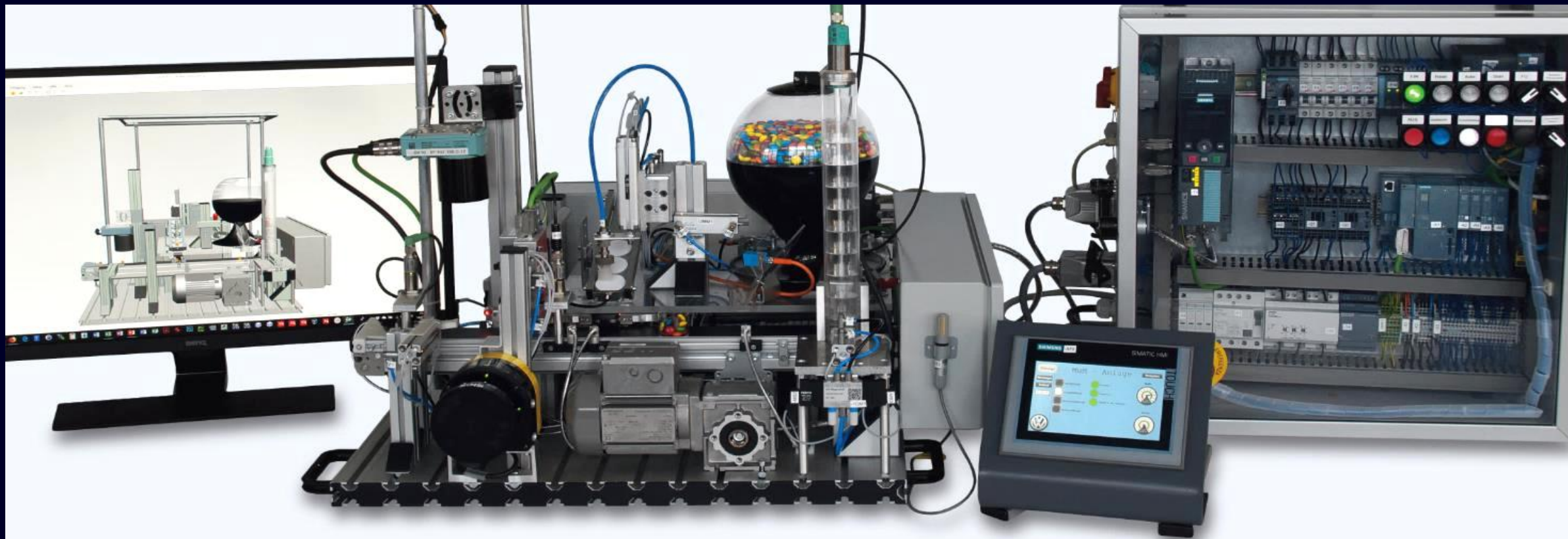


Concepto de digitalización de SCE – Los perfiles profesionales se fusionan cada vez más...



Concepto de digitalización de SCE – implementado en un proyecto realizado por los alumnos de formación profesional de la escuela 2 Wolfsburg

Buenas prácticas: **implementado por BBS 2 Wolfsburg. ¡¡¡ No comercializado!!!**



1. Ingeniería intuitiva en el TIA Portal de la instalación de automatización real con SIMATIC S7-1500 /ET 200SP/RFID/SCALANCE/SINAMICS
2. Puesta en marcha virtual mediante gemelo digital en el software CAD MCD NX de Siemens
3. Integración en la nube con IoT2050 para evaluar los datos de producción

Concepto de digitalización de SCE –

Las habilidades interdisciplinarias son la clave del éxito profesional

La digitalización está cambiando nuestro mundo de forma rápida y radical.

¿Qué significa esto para la formación?

Muchas escuelas, colegios y universidades se enfrentan al reto de transmitir los conocimientos de la Industria 4.0 como parte de su enseñanza y formación. Para apoyar a los educadores y a sus estudiantes en su camino hacia la Industria 4.0, SCE ha creado un concepto de digitalización para las instituciones educativas

[↗ Descubre el concepto de digitalización de SCE](#)



Más información

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Concepto de digitalización de SCE – Soporte integral para educadores en el camino hacia la Industria 4.0

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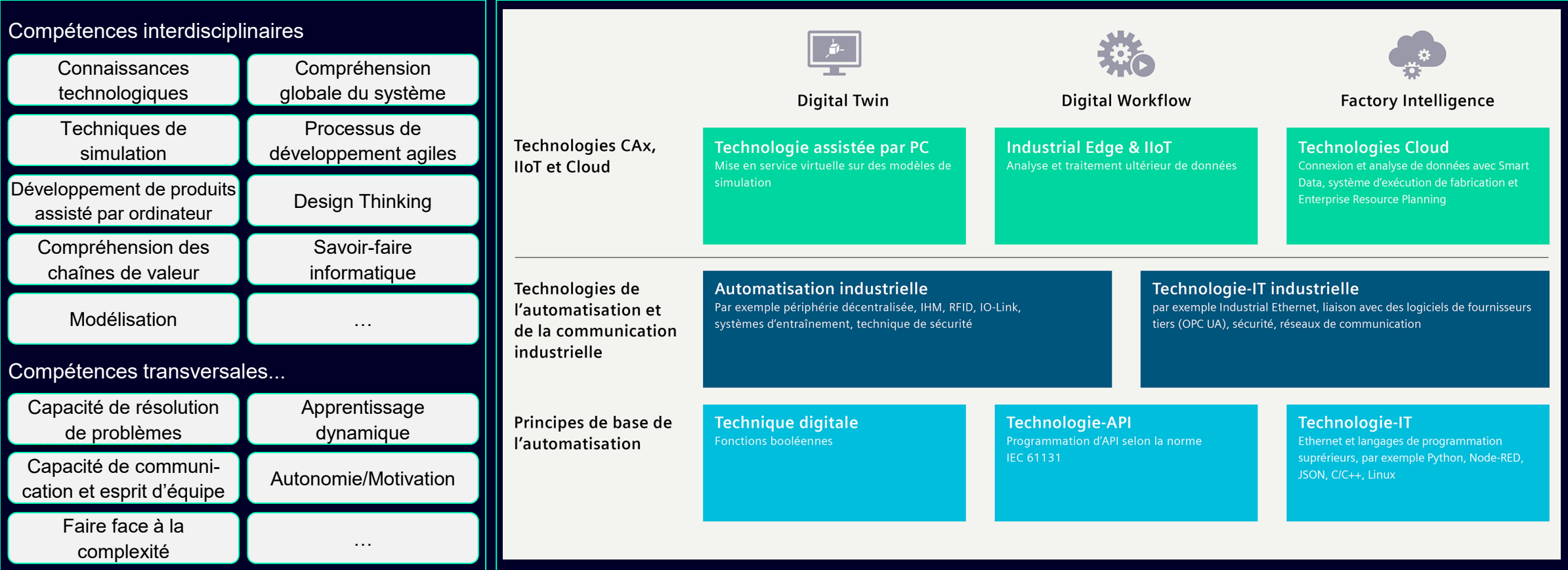


Concept de numérisation SCE – Des supports de cours complets pour les enseignants qui préparent à l'Industrie 4.0

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Concept de numérisation SCE – Dans la vie professionnelle, les compétences interdisciplinaires sont des conditions fondamentales pour réussir

Nouveaux profils de compétences Concept en plusieurs étapes pour un transfert de connaissances global



Concept de numérisation SCE –

Les descriptions de métiers traditionnelles fusionnent de plus en plus...

Construction mécanique

Technique d'automatisation

Informatique

Jumeau numérique, flux de production numérique, multi-utilisateurs

Edge Computing, Intelligence Artificielle, IIoT

Intelligence d'usine, systèmes basés sur le Cloud



Mécatronique

Mécanique, électronique, robotique, capteurs, actionneurs, systèmes d'entraînement...

Automatisation industrielle

API, IHM, TIA Portal, RFID, IO-Link, technologie de sécurité...

Technique informatique industrielle

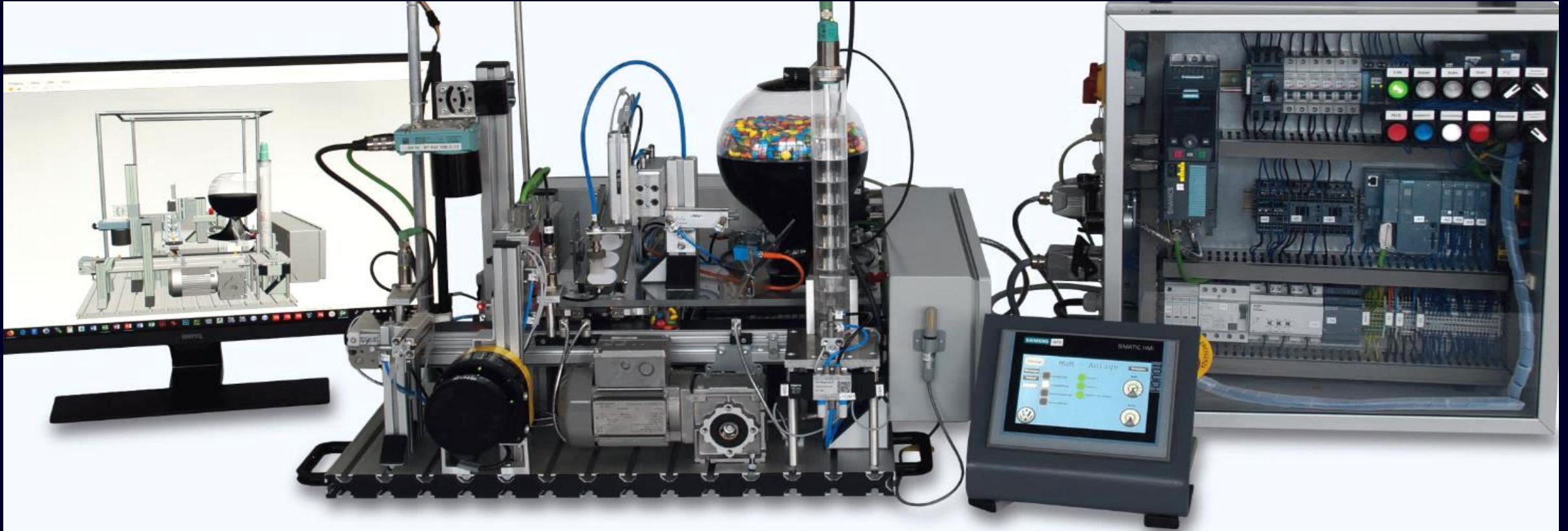
par exemple Industrial Ethernet, connexion tierce (OPC UA), sécurité...



Concept de numérisation SCE –

Réalisé dans un projet d'étude par le centre de formation professionnelle BBS 2 Wolfsburg

Best Practice: Réalisé par BBS 2 Wolfsburg. Non commercialisé !



1. Ingénierie intuitive avec TIA Portal de l'installation automatisée réelle (SIMATIC S7-1500 /ET200SP/RFID/SCALANCE/SINAMICS)
2. Mise en service virtuelle à l'aide du jumeau numérique avec le logiciel NX-MCD CAD de Siemens
3. Connexion au Cloud à l'aide de IOT2050 pour l'analyse des données de production

Concept de numérisation SCE –

Les compétences interdisciplinaires sont la clé du succès professionnel

La numérisation transforme rapidement et radicalement notre monde.

Qu'est-ce que cela signifie pour l'éducation ?

De nombreuses écoles, de nombreux collèges et de nombreuses universités sont confrontés au défi de transmettre le savoir-faire de l'Industrie 4.0 dans le cadre de leur enseignement et de leur formation. Afin de soutenir les enseignants et leurs élèves dans leur parcours vers l'Industrie 4.0, SCE a créé un concept de numérisation pour les établissements d'enseignement

[↗ Découvrez le concept de numérisation SCE](#)



Informations supplémentaires

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Concept de numérisation SCE – Des supports de cours complets pour les enseignants qui préparent à l'Industrie 4.0

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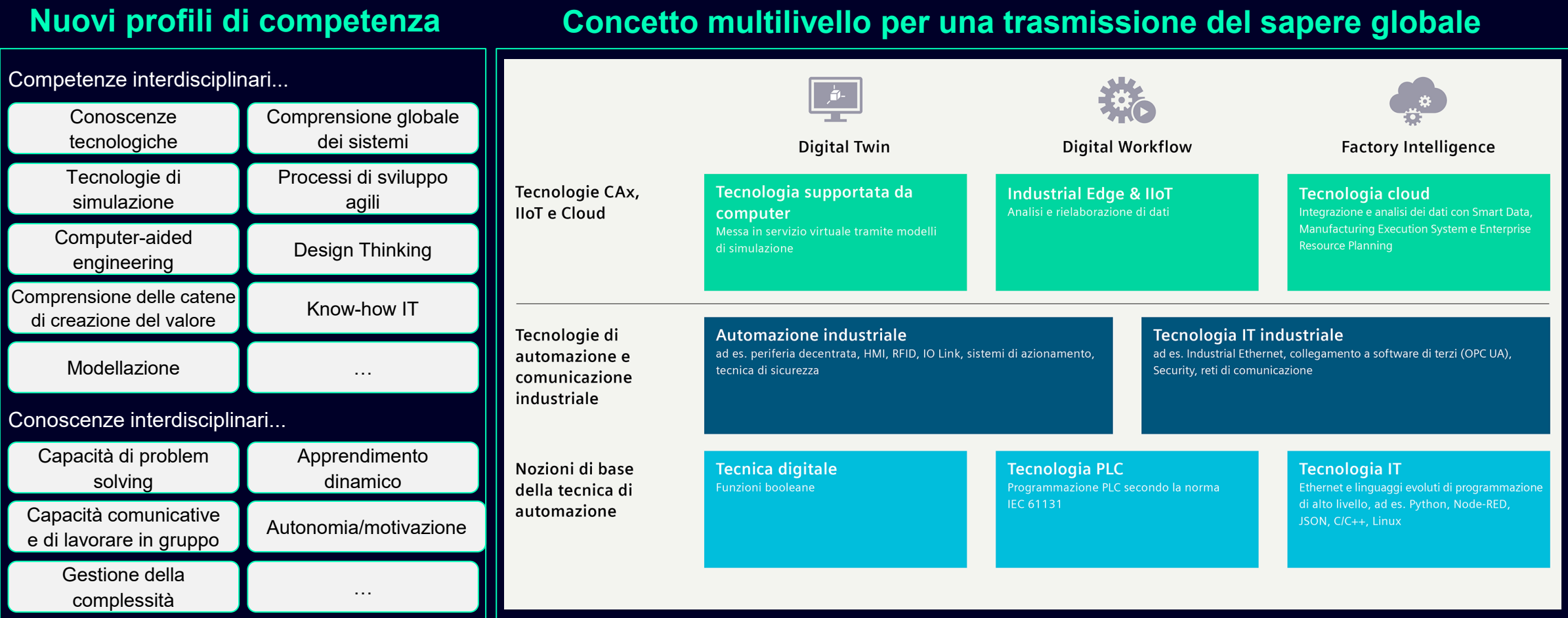




Concetto di digitalizzazione SCE – Supporto completo per insegnanti nel percorso verso l'Industria 4.0

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Concetto di digitalizzazione SCE – Nella vita professionale, le competenze interdisciplinari sono alla base del successo



Concetto di digitalizzazione SCE – I profili professionali tradizionali si fondono sempre di più...

Industria meccanica

Tecnica di automazione

Information technology

Digital Twin, Digital
Workflow, Multiuser

Edge Computing, intelligenza
artificiale, IIoT

Fabbrica intelligente,
sistemi cloud

Meccatronica

Meccanica, elettronica, robotica, sensori,
attuatori, sistemi di azionamento...

Automazione industriale

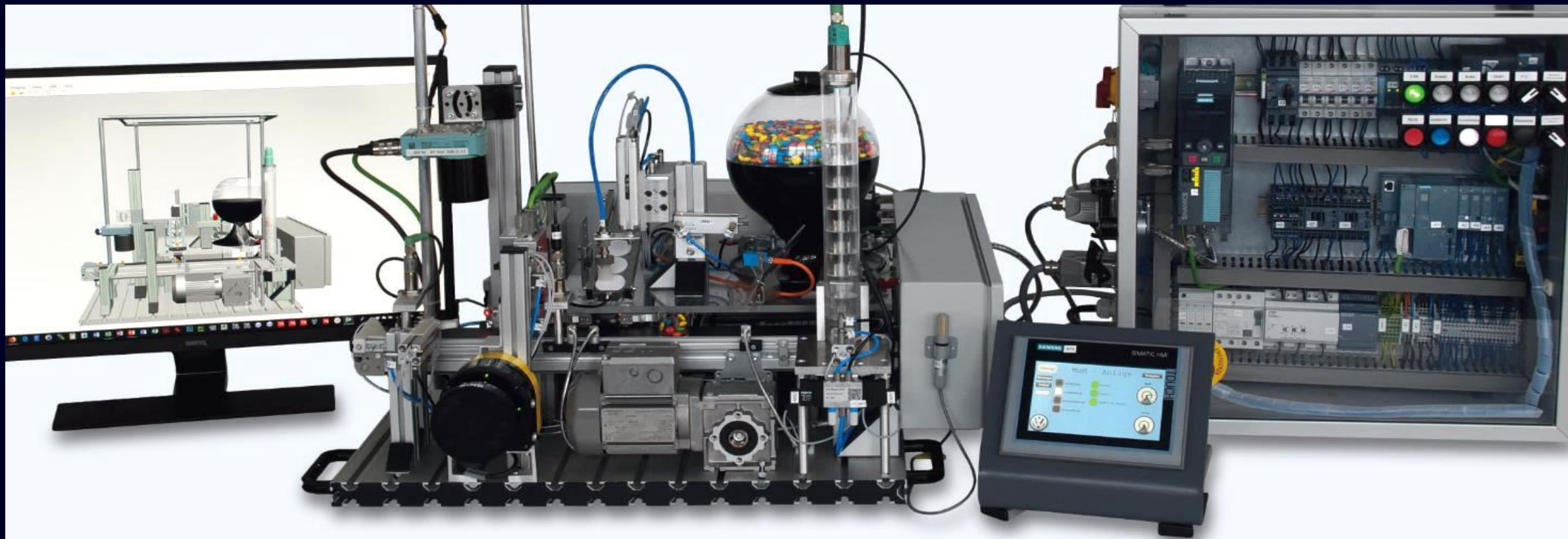
PLC, HMI, TIA Portal, RFID, IO-Link, tecnica
di sicurezza...

Tecnologia IT industriale

Ad es. Industrial Ethernet, collegamento di
terze parti (OPC UA), Security...

Concetto di digitalizzazione SCE – realizzato con un progetto da studenti della scuola professionale 2 di Wolfsburg

Best Practice: implementazione da BBS 2 Wolfsburg. Non disponibile in commercio!



1. TIA Portal Engineering intuitivo dell'impianto di automazione reale con SIMATIC S7-1500 /ET 200SP/RFID/SCALANCE/SINAMICS
2. Messa in servizio virtuale grazie al gemello digitale all'interno del software CAD NX-MCD Siemens
3. Connessione al cloud mediante IOT2050 per la valutazione dei dati di produzione

Concetto di digitalizzazione SCE – Le competenze interdisciplinari sono la chiave del successo professionale

La digitalizzazione sta cambiando rapidamente e radicalmente il nostro mondo.

Cosa significa per l'istruzione?

Molte scuole, istituti e università si trovano ad affrontare la sfida di trasmettere il know-how dell'Industria 4.0 come parte del loro insegnamento e formazione. Per supportare gli insegnanti e i loro studenti nel percorso verso l'Industria 4.0, SCE ha creato un concetto di digitalizzazione per le istituzioni di formazione

[➤ Scopri il concetto di digitalizzazione SCE](#)



Ulteriori informazioni

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Concetto di digitalizzazione SCE – Supporto completo per insegnanti nel percorso verso l'Industria 4.0

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Conceito de digitalização SCE – Suporte abrangente para educadores no caminho para a Indústria 4.0

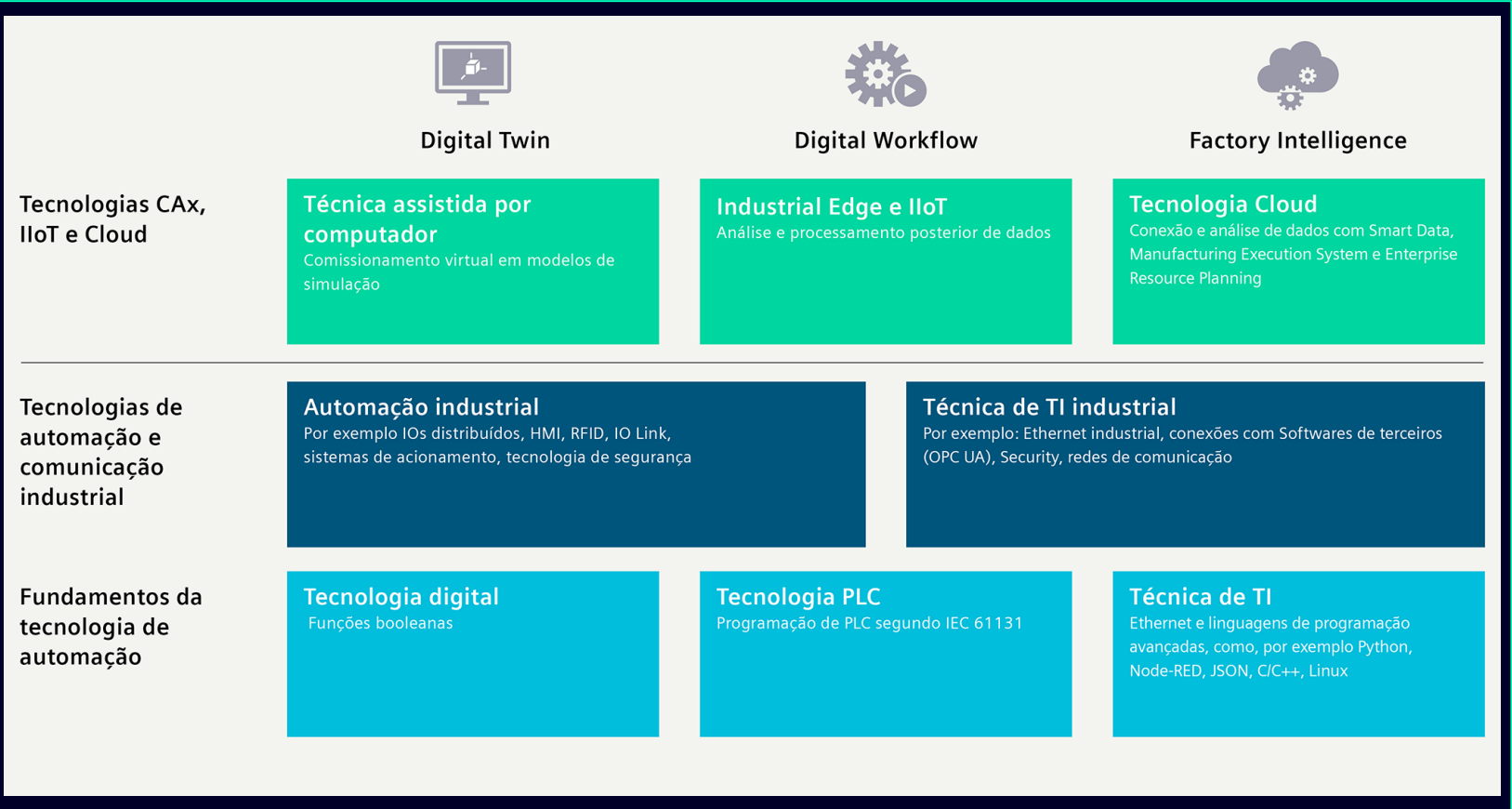
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Conceito de digitalização SCE – Na vida profissional as capacidades interdisciplinares são imprescindíveis ao sucesso

Novos perfis de competência

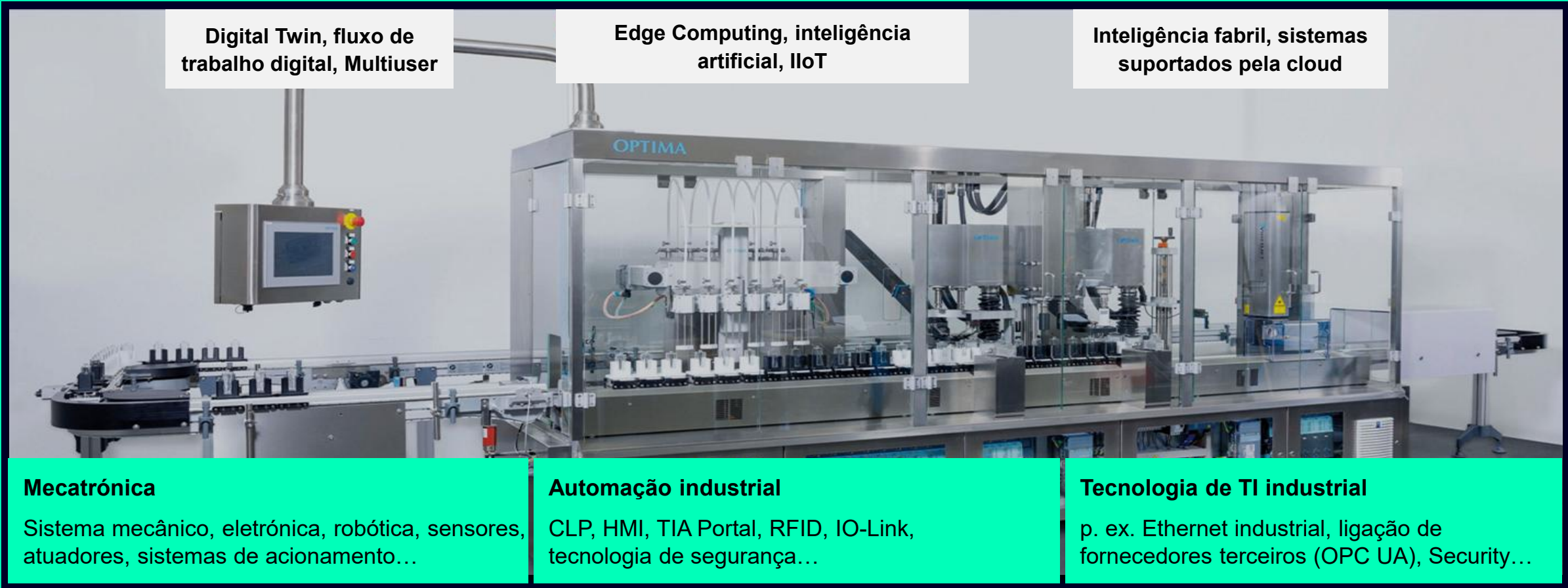
Competências interdisciplinares...	
Conhecimentos de tecnologia	Entendimento holístico dos sistemas
Técnicas de simulação	Processos de desenvolvimento ágeis
Desenvolvimento computadorizado de produtos	Design Thinking
Entendimento das cadeias de valor	Know-how de TI
Modelagem	...
Conhecimentos multidisciplinares...	
Capacidade de resolução de problemas	Aprendizagem dinâmica
Capacidade de comunicação e de trabalho em equipa	Autonomia / motivação
Abordagem da complexidade	...

Conceito de níveis múltiplos para a transmissão holística de conhecimentos



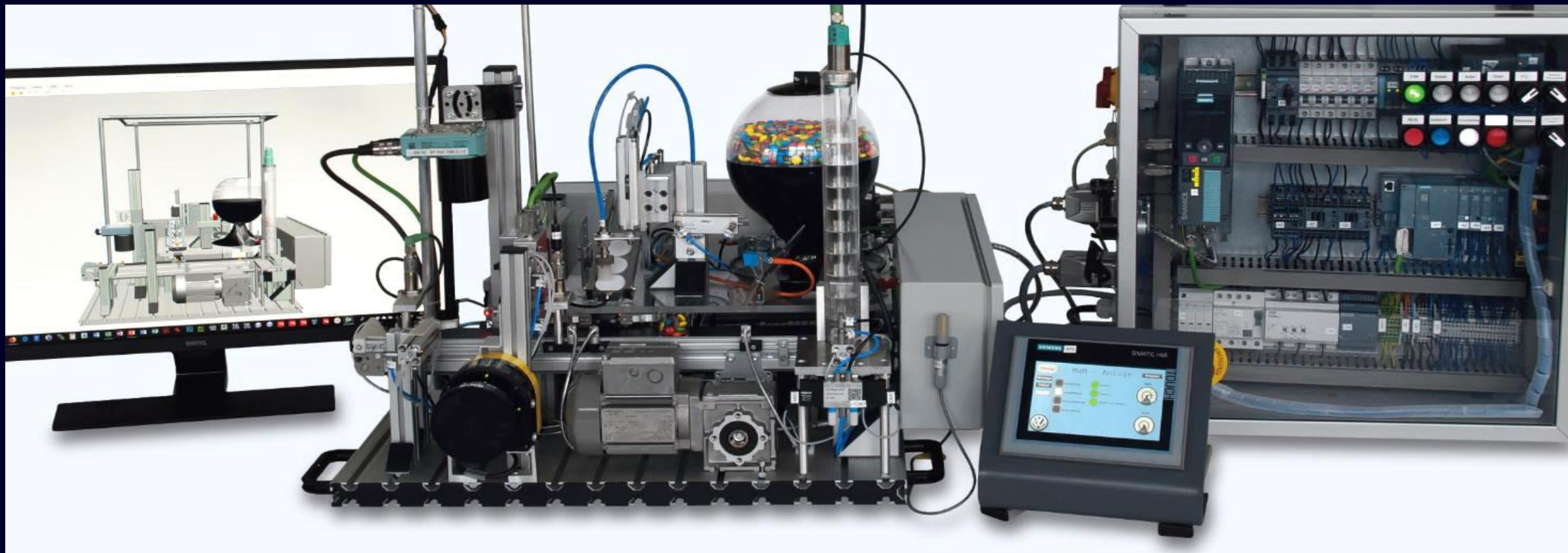
Conceito de digitalização SCE – Há uma fusão cada vez maior dos tradicionais perfis profissionais...

Construção de máquinas Tecnologia de automação Tecnologia de informação



Conceito de digitalização SCE – implementado pelos alunos da Escola 2 de Wolfsburg em um trabalho de projeto

Best Practice: Implementação pela BBS 2 Wolfsburg. Não disponível no comércio!



1. Engenharia intuitiva através do TIA Portal da automação real com SIMATIC S7-1500/ET200SP/RFID/SCALANCE/SINAMICS
2. Comissionamento virtual com a ajuda do Digital Twin no software CAD NX-MCD Siemens
3. Conexão em nuvem via IOT2050 para avaliação dos dados de produção

Conceito de digitalização SCE –

Habilidades interdisciplinares são a chave para o sucesso profissional

A digitalização está mudando nosso mundo de forma rápida e radical.

O que isso significa para a educação?

Muitas escolas, faculdades e universidades estão enfrentando o desafio de transmitir o know-how da Indústria 4.0 como parte de seu ensino e treinamento. Para apoiar os educadores e seus alunos em seu caminho para a Indústria 4.0, a SCE criou um conceito de digitalização para instituições educacionais

[➤ Descubra o conceito de digitalização SCE](#)



Informações adicionais

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Conceito de digitalização SCE – Suporte abrangente para educadores no caminho para a Indústria 4.0

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SCE 数字化方案 – 全面支持教育工作者顺利迈向工业 4.0 时代

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SCE 数字化方案 –

在职业生涯中，跨学科技能是成功的基本要求

新的能力要求

跨学科技能...	
技术知识	整体的系统理解
仿真技术	敏捷开发过程
计算机辅助产品开发	设计思维
对价值链的理解	IT 技术诀窍
建模	...
基础知识...	
解决问题的能力	动态示教
沟通能力和团队合作能力	独立性/主动性
处理复杂事宜的能力	...

整体知识转移的多阶段方案



SCE 数字化方案 – 传统的鲜明职业形象正在逐渐融合...

机械制造

自动化技术

信息技术

数字孪生，数字工作流程，
多用户

边缘计算，人工智能，IIoT

工厂智能，云端系统

机电一体化

机械装置，电子设备，机器人技术，传感器，执行器，驱动系统...

工业自动化：

PLC，HMI，TIA Portal，RFID，IO-Link，安全工程...

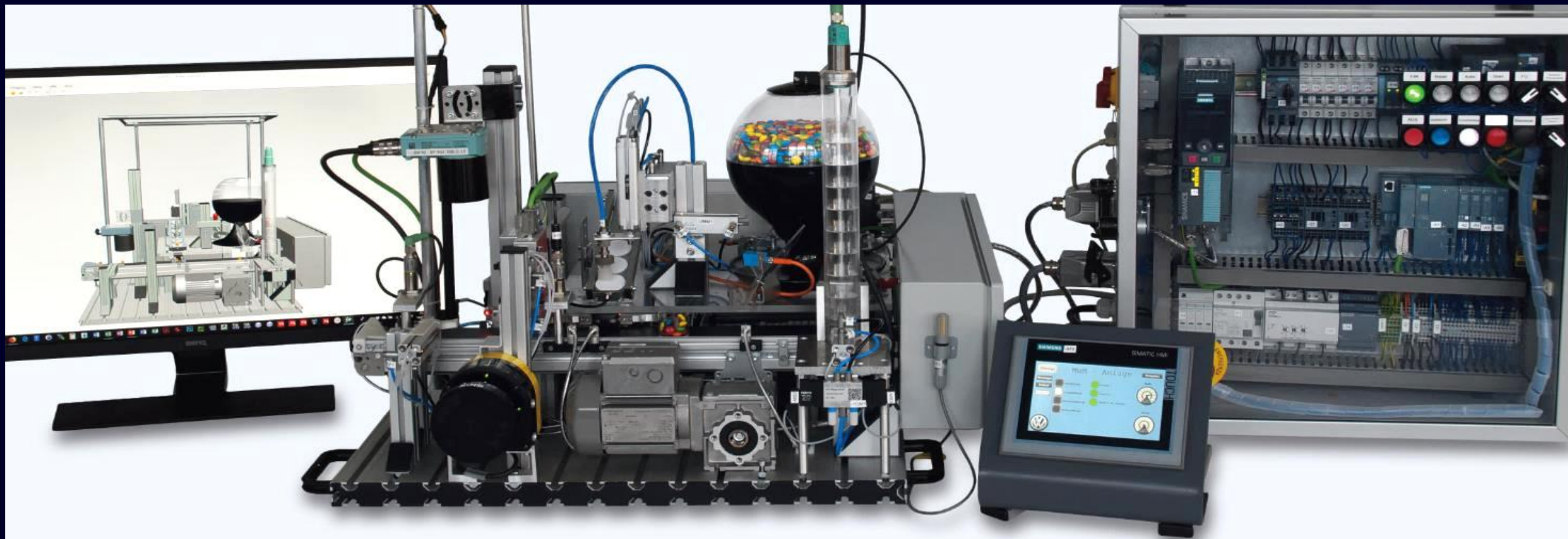
工业化 IT 技术

例如工业以太网，第三方提供商连接 (OPC UA)，安全系统...



SCE 数字化方案 – 在德国沃尔夫斯堡第二职业学校的项目中得以贯彻

最佳实践：由BBS 2 Wolfsburg实施。无法购买！



1. 借助 SIMATIC S7-1500 /ET 200SP/RFID/SCALANCE/SINAMICS 为真正的自动化设备在 TIA 博途中进行直观的工程组态
2. 借助数字化双胞胎在西门子 NX-MCD CAD 软件上进行虚拟调试
3. 利用 IOT2050 实现云连接，进行生产数据评估

SCE 数字化方案 – 跨学科能力是取得职业成功的制胜法宝

数字化正以前所未有的速度深刻重塑我们的世界。

这对教育领域意味着什么？

诸多院校正面临一项核心挑战：
如何在教学中有效传授工业 4.0 专业知识。为助力教师及学生顺利迈向工业 4.0 时代，
SCE 特为教育机构量身打造了数字化解决方案

[↗ 探索 SCE 数字化方案](#)



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SCE 数字化方案 – 全面支持教育工作者顺利迈向工业 4.0 时代

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