

IoT enabling vertical industries in smart sustainable cities

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Agenda

- Requirements and functional architecture for smart construction site services (ITU-T Y.IoT-SCS)
- Requirements and Reference Architecture of Smart Education (ITU-T Y.smart-education)

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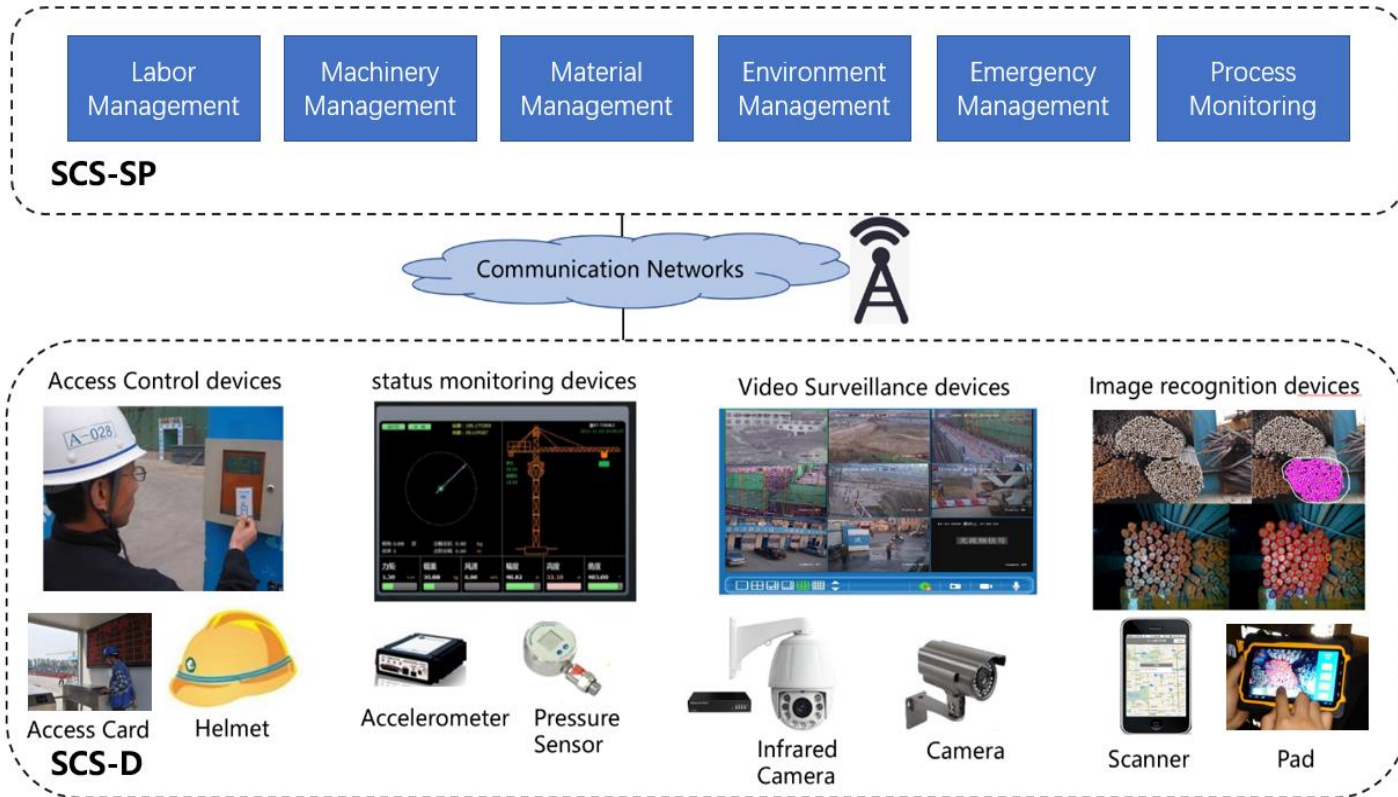
- **Requirements and functional architecture for smart construction site services (ITU-T Y.IoT-SCS)**
- Requirements and Reference Architecture of Smart Education (ITU-T Y.smart-education)

Goals on SCS services

include but are not limited to:

- To help realize the visualized and intelligent management of the construction project
- To improve the level of information-based management of the construction project by avoiding potential malfunctions of the special equipment and/or the operation of personnel violation
- To prevent potential hazards and make quick and effective emergency response
- To realize green and ecological construction

Key components of SCS services



Use cases of SCS

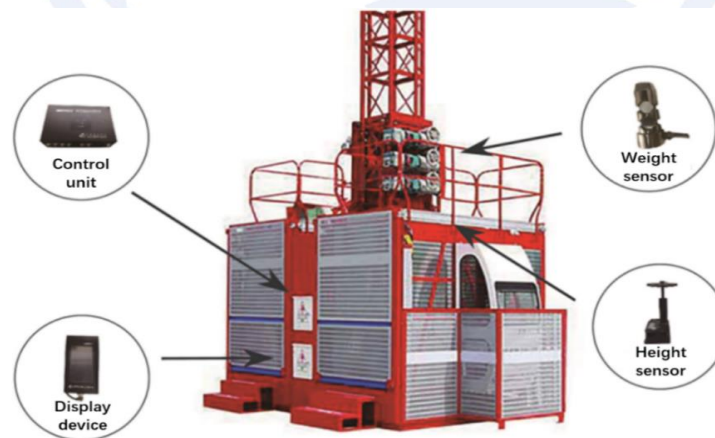
- **The detection of steel bars by means of intelligent identification**
 - quickly identify and record the number of steel bars
 - shorten the inventory time of assets
 - greatly improve work efficiency



Use cases of SCS

- **Monitoring of builder's lift**

- ensure safe operation (only the identified driver can operate the lift after verifying the biometric identity)
- lift operation parameters automatically uploaded
- sound and light alarms automatically triggered if abnormal condition happens



Use cases of SCS

- **Safety monitoring by video surveillance**



- visualized and intelligent management
- real-time and multi-angle surveillance of construction process
- collected images and video analysis for safety and management purpose

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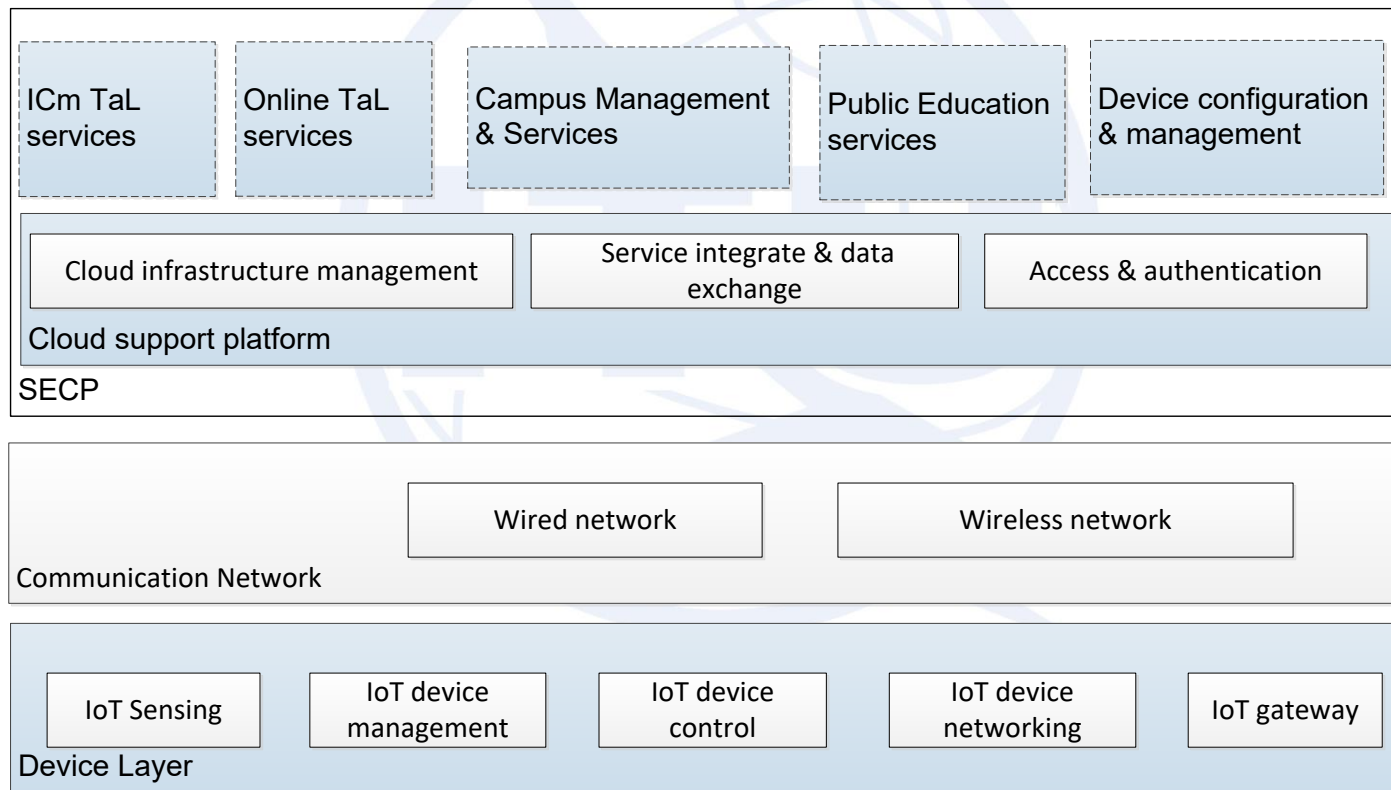
- Requirements and functional architecture for smart construction site services (ITU-T Y.IoT-SCS)
- **Requirements and Reference Architecture of Smart Education (ITU-T Y.smart-education)**

Overview of smart education

Smart education provides:

- different kinds of teaching and learning environment with connective, perceptive, interactive Teaching and Learning (TaL) equipment
- student-centered applications including interactive classroom and online learning based on analysis of students' learning needs and learning habits
- campus management & services including campus safety management, basic education information management, etc.
- public education management including education resources management, teaching quality evaluation, etc.

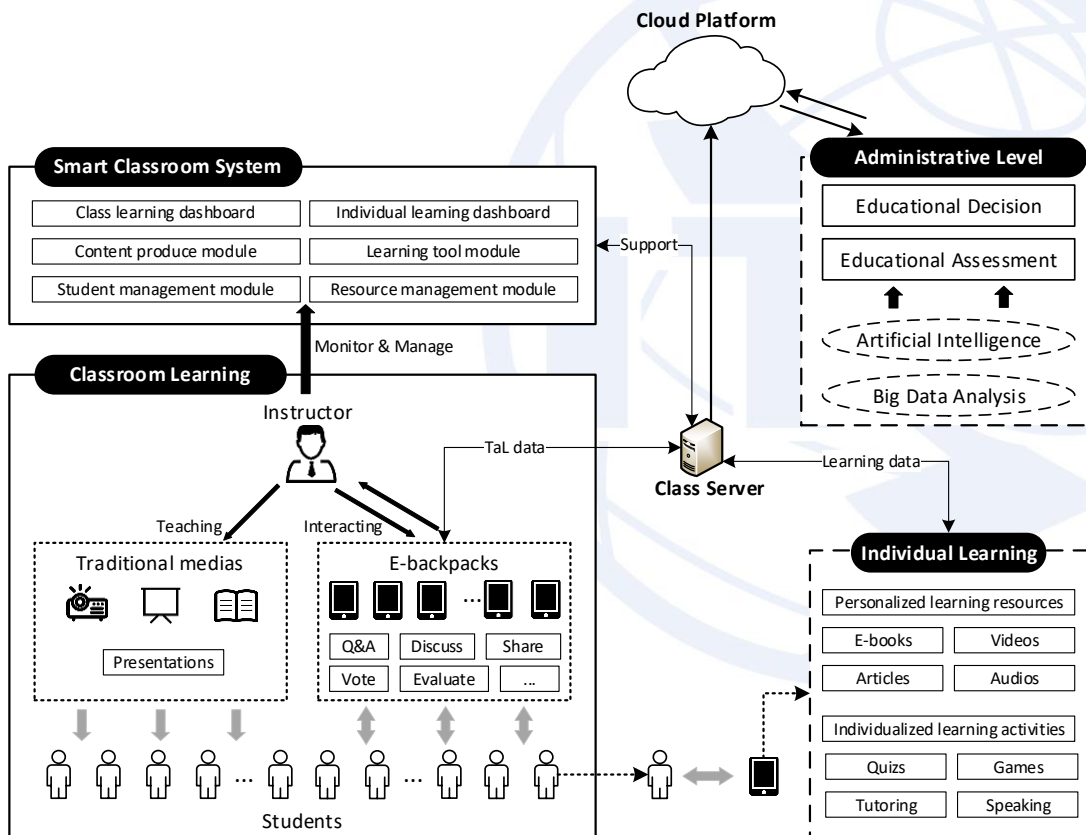
Reference architectural model for smart education



Note - the reference architectural model is still under development

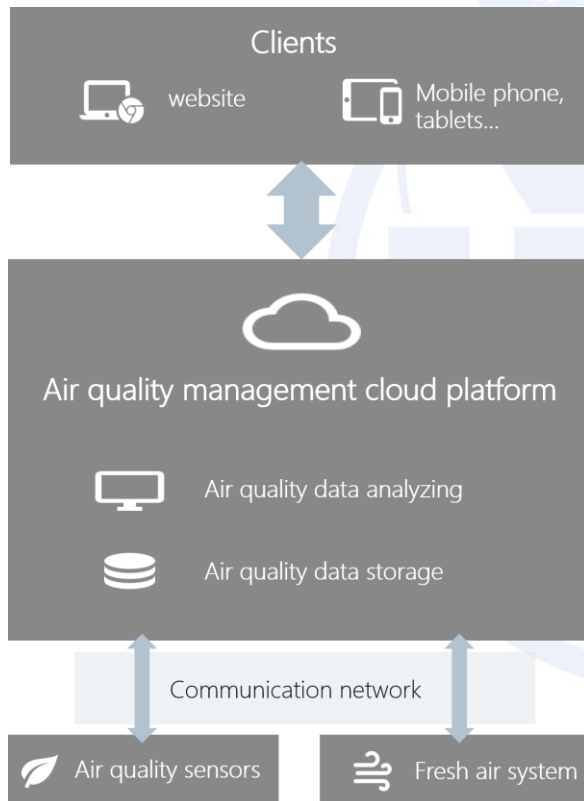


Use cases of smart education



- e-backpack supported smart education
 - Interactive classroom learning
 - Personalized individual learning
 - Multi-level Multi-modal learning assessment

Use cases of smart education



- **Air quality management for smart education**
 - Outdoor air quality management
 - Indoor air quality management
 - Air quality management visualization

Use cases of smart education



- **Epidemic prevention for smart education**
 - Smart body temperature detection
 - Hands disinfection
 - Health statistics data report

