

ECE 444 / ECE 544 /
CS 444 / CS 544

Supervisory Control and Critical Infrastructure Systems

Session 1

Terminology

- Different names for similar concepts

- Industrial Control Systems

(ICS)

- Cyber physical (Control) System

(CPS)

- Industrial Internet of Things (IIOT)

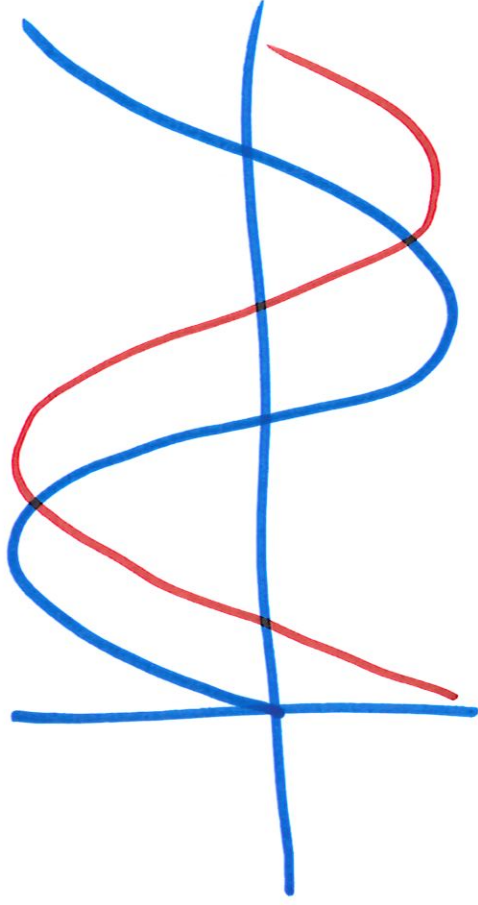
- Smart Grids, Smart Cities

Related Terms

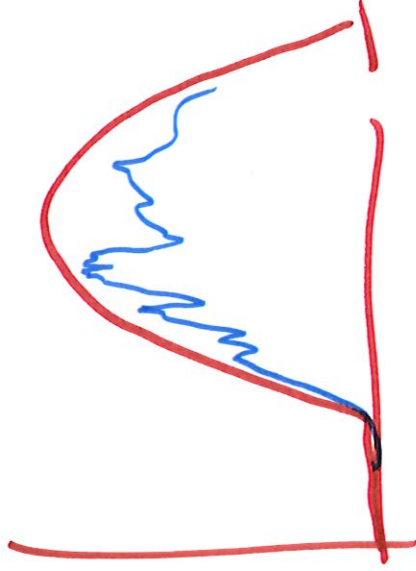
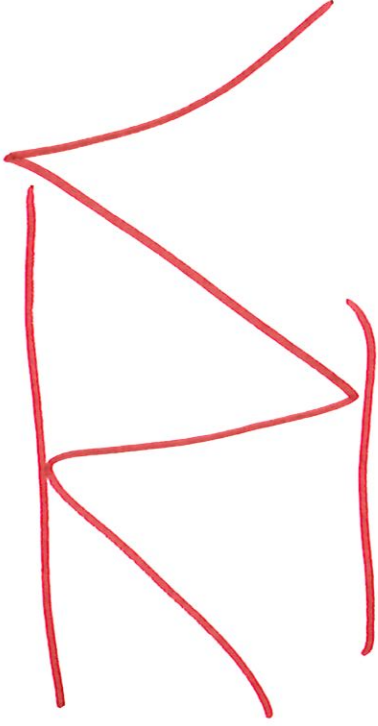
- Supervisory control and Data Acquisition (SCADA)

- Distributed control System
 - spread out physically meters to miles to hundreds of miles
 - Local controllers/measurements
 - some control locally
 - other decisions made at central control room

voltage waveforms



60Hz



Autonomous Control (Automation)

Human operator
to do what
humans can
do.

Automation
for things that
are fast

Trend - Time Synchronized
Measurements

→ Global Positioning System
(GPS)

Operational Technology

Network (OT) → In the room
Isolated

Enterprise Network (IT)

(connected to outside
internet)

↓
with
lots of
bridges:-