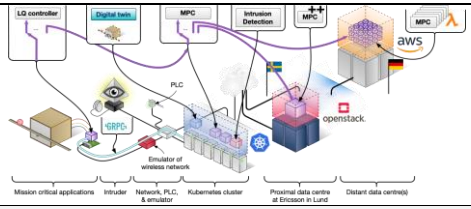
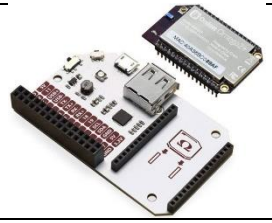
IIoT Equipment available within the Nordic IoT Hub

Item	Description	Diagram/Photo	User manual (URL/pdf)	Contact person
DTU-Photon				
Sigfox Access Station Micro	Standalone Sigfox Gateway with 3G/ETH interfaces		https://support.sigfox.com/products/#micro	Krzysztof Mateusz Malarski (krmal@fotonik.dtu.dk)
Sigfox SDR Dongle	USB Dongle with SMA connector; emulates Sigfox backend and can be used to e.g. test a PoC end-device Max. 5 devices can be registered		https://support.sigfox.com/products/#sdr	Krzysztof Mateusz Malarski (krmal@fotonik.dtu.dk)
IoT prototyping lab	Consisting of a complete PCB manufacturing pipeline: - soldering stations: WELLER WS80, PU81, JBC Nano rework machine, YIHUA YH-853AAA hot-iron station - CNC machine: WEGSTR Milling - Etching machine: PA210 - Double Side UV Light Exposure Machine - 3D printer: MakerBot Replicator+ - Laser printer: Epson P400 - Via machine: EZPICK - Precision lead reflow oven: ZB2520HL - Place stencil machine: eurocircuits eC-stencil-mate - Glue dispensing machine: TH-2004K		WELLER WS80 WELLER PU81 JBC Nano rework YIHUA YH-853AAA WEGSTR milling PA210 MakerBot Replicator+ Epson P400 EZPICK ZB2520HL eC-stencil-mate TH-2004K	Anas Mohamad Al Shalyan (amals@fotonik.dtu.dk)

Pycom FiPy board	(WiFi+LTE-M+NB-IoT+LoRa+Sigfox+BLE)		https://docs.pycom.io	Krzysztof Mateusz Malarski (krmal@fotonik.dtu.dk)
DTU-ESE				
Power Analyzer	N6705C DC Power Analyzer		Technical Support: N6705C DC Power Analyzer | Keysight	Xenofon (Fontas) Fafoutis xefa@dtu.dk
Development Board	Altera DE2-115 Development and Education Board		Terasic - All FPGA Boards - Cyclone IV - Altera DE2-115 Development and Education Board	Martin Schoeberl masca@dtu.dk
LTH-Auto				
LTH RobotLab	The robot lab is a shared facility between Automatic Control and Computer Science. It contains among others the equipment below			
ABB IRB120/121	ABB serial industrial robot, 6dof, 3kg			Anders Robertsson, ander.robertsson@control.lth.se
ABB IRB 140	ABB serial industrial robot, 6dof, 3kg			Anders Robertsson, ander.robertsson@control.lth.se
ABB IRB2400	ABB serial industrial robot, 6dof, 16kg			Anders Robertsson, ander.robertsson@control.lth.se

ABB Frida	ABB dual arm prototype robot, 2x7dof			Anders Robertsson, ander.robertsson@control.lth.se
ABB Yumi	ABB dual arm robot, 2x7dof			Anders Robertsson, ander.robertsson@control.lth.se
Franka Emika Panda	Franka Emika robot arm, 7dof			Voler Krüger, volker.kruger@cs.lth.se
KUKA iiwa	Two arm robot, 2x7dof			Jacek Malek, jacek@cs.lth.se
T3	Parallel-kinematic 6dof robot			Anders Robertsson, ander.robertsson@control.lth.se
ABB Flexpicker	ABB parallel-kinematic picker robot, 3+1 dof			Anders Robertsson, ander.robertsson@control.lth.se
Fraunhofer Care-o-bot	ROS-based mobile robot platform			Anders Robertsson, ander.robertsson@control.lth.se
Nikon Kinect	Two Nikon Kinect cameras			Anders Robertsson, ander.robertsson@control.lth.se
Pioneer	Mobile robot			Anders Robertsson, ander.robertsson@control.lth.se
Turtlebot	Two mobile robotics platform			Anders Robertsson, ander.robertsson@control.lth.se
Husqvarna Research Platform	ROS-based mobile robot platform			Anders Robertsson, ander.robertsson@control.lth.se
Drones	ARdrone, bebop, Crazyflies (numerous)			Anders Robertsson, ander.robertsson@control.lth.se
LTH-EIT				

LuMaMi 100-antenna real-time Massive MIMO testbed	The base-station consists of 100 coherent RF chains serving 12 single-antenna users. The digital signal processing is distributed over 50 Xilinx FPGAs which are connected through a star-topology using a high-speed PXIe bus. A TDD massive MIMO system has been prototyped on the testbed. It uses 20 MHz bandwidth with 1200 data sub-carriers, 0.5ms sub-frame consisting of 7 OFDM symbols each. The system runs at full-rate with over-the-air transmission and real-time processing on FPGAs.		https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7931558	Liang Liu Associate Professor Liang.liu@eit.lth.se
Industry 4.0 Testbed	ELLIIT Infrastructure: Connectivity and Compute Lab for Edge Computing			Erik Larsson, LU-EIT erik.larsson@eit.lth.se
LTH-CS				
NodeMCU	Tiny IoT boards with WiFi, ESP8266 (5 pcs.)		https://www.nodemcu.com/index_en.html	Flavius Gruian, flavius.gruian@cs.lth.se
Pycom LoPy	Bluetooth+LoRa+WiFi small IoT prototyping board, programmed in Python (2 pcs.) + PyTrack (GPS) and PySense (accelerometer, humidity, light, pressure, temp) shields		https://pycom.io	Flavius Gruian, flavius.gruian@cs.lth.se
Onion Omega2+	Linux based IoT computer on a chip, WiFi Also with PowerDock		https://onion.io/store/omega2p	Flavius Gruian, flavius.gruian@cs.lth.se

Parallella board	Epiphany 16-core RISC CPU, embedded board (2 pcs.)		https://www.parallella.org/board/	Flavius Gruian, flavius.gruian@cs.lth.se
Digilent boards	FPGA prototyping boards, generations Nexys 2, 3, 4, 4DDR; Basys; etc. (old rather, several)		https://store.digilentinc.com/fpga-development-boards-kits-from-digilent/	Flavius Gruian, flavius.gruian@cs.lth.se
KTH				
AD-EYE	Automated driving simulation platform (intended to be made open source): www.adeye.se		Naveen Mohan <naveenm@kth.se>	
Eclipse LYO	Open source tools for interoperability of heterogeneous products, services, and other distributed network resources.https://www.eclipse.org/lyo/		Andrii Berezovskyi <andriib@kth.se>	
KTH ITS testbed	Intelligent transportation systems testbed being set up at KTH initially consisting of digitalized campus models/data, the KTH research concept vehicle (autonomous and with 5G) and a 5G installation on campus		martint@kth.se	
AI IOT SW and HW	NVIDIA Jetson Nano, Jetbot AI IOT and TurtleBot robot kit		Dejiu Chen <chen@md.kth.se>	
ESS-Car	Scale model autonomous and connected vehicle platform with SDN and SOME/IP		Dejiu Chen <chen@md.kth.se>	
Object tracking and IoT	Vicon tracking system (cameras and softare, Vicon Tracker 3) used in connection with numerous student projects on IoT		Fredrik Asplund <fasplund@kth.se>	
NTNU				
Industry 4.0 Lab	The Industry 4.0 lab is part of the MANULAB and consists of 5 robots: • One ABB YuMi robot, which is a two armed collaborative robot • Two KUKA iiwa robots, which are 7DOF collaborative robots Two KUKA KMR iiwa robots, which are AGVs with an iiwa robot on top.	Coming soon	Coming soon	Adam Leon Kleppe
Robotic Welding Lab	The Robotic Welding lab is part of the MANULAB and consists of 3 robot cells:	Coming soon	Coming soon	Adam Leon Kleppe

	• Two robot welding cells for aluminum as they have CMT welding tools One is the large welding cell, with two welding robots (TIG and MIG welding) and a large two-axis rotation table which can hold 1.5 tonnes.			
Industrial Robotic Lab	The Industrial Robotic Lab consists of 4 robot cells (soon to be 5): • The Milling cell: consisting of two KUKA KR120 robots which primarily is tooled for milling • The Small Welding cell: with a KUKA KR5 with TIG welding, used for small welding projects • The Assembly cell: with two KUKA KR6 robots with Robotiq gripper. This cell will soon be split into two. The General Robotic cell: with a KUKA KR16 and a set of various tools.	Coming soon	Coming soon	Adam Leon Kleppe
5G lab	This is only in the starting phase, but we have gotten money to build a lab using 5G technology.	Coming soon	Coming soon	Amund Skavhaug
Aalto				
Aalto Industrial Internet Campus. Kone cranes	Kone cranes industrial overhead crane. Ilmatar OIE is an open physical and digital development environment targeted for different third parties i.e. students, startups, SMEs, larger corporations or other parties, who want to innovate and develop new devices and applications that are connected to Konecranes overhead cranes.		https://www.aalto.fi/en/industrial-internet-campus/ilmatar-open-innovation-environment	Jari Juhanko jari.juhanko@aalto.fi