Established in 2013 by UK government grant plus industry, ICS/5GIC is internationally known for 5G innovations.

Set up to bring industry and academia together and to provide a 5G test bed for innovations.

Currently have 26 major international partners and over 200 SME’s in 5GIC.
COMMUNICATION AND INFORMATION SYSTEMS

COVERAGE

- Mobile cellular
- WiFi
- Satellite
- Internet of Things
- Vehicle communications
- Future Internet

Future Automation of 5G via AI

- Logistics and transport
- Manufacturing
- Games and entertainment
- Utilities
- Health

FROM THEORY TO INNOVATION
5GIC TEST-bed: ULTRA-DENSE CAMPUS TEST-bed

University of Surrey Outdoor Campus

- Macro BS
- RRH
- Umbrella Cell
- Small Cell
- AP
- FAP
- Ultra-Dense Cluster(1)

5GIC Indoor Deployment

- Access Points (x6, 802.11ac)
- Wi-Fi AP
- Femto Radios (x6, LTE FDD)

Vodafone Newbury Test Centre

- LTE Core (H/W)
- MME
- HSS
- SGW
- PGW
- VPN Tunnel
- 5GIC Comm’s Room
- C-RAN Baseband Units
- Operations & Maintenance
- LTE Soft-Core
- 5G Soft-FDC Core
- CM
- CC
- PPE

27 November 2019
4G & 5G Multi-Radio access network Environment Coverage

Outdoor

- Ultra dense C-RAN of 44 4G-TDD sites & 66 Cells
- Cell Cluster operated as 1xMacro & 15xSmallCell site/Cluster
- eMBB D-RAN of 7 5G-TDD(3.5G) Sites & 9 Cells
- Cell cluster operated as 1xMacro (2.6GHz-TDD) anchor & 4xSmallCell(3.5GHz-TDD) site/Cluster
- URLLC RAN of 1 5G-TDD(3.5G) site & single cell
- 700MHz 4G-FDD 1 site
- Combination of SDR & 60GHz supported on a drone for popup-network
- Satellite backhauling
- 60GHz backhaul system

Indoor – Over 2 Floors

- C-RAN of 4G-TDD 6 Cells
- 4G-FDD femtos cells
- 6 x Wi-Fi-A

Core Network

- Fully virtualized Rel-15 4G CUPS core overlay of FDC (Flat Distribute Context Aware Cloud Network)
- Fully Virtualized Rel15/16 5GC (made in the UK)
- Fully virtualized MEC
Some World firsts:

- 4K(UHD) video over a mobile network – 2015
- Holoportation (3D video) on mobile network – 2017
- First open 5G Network – MWC 2018
- Network slicing set up/take down in under 2 min.
- Highest spectral efficiency for massive MIMO - 5b/s/Hz antenna element – 2017
- 5G connection over GEO satellite (EUCNC 2018)
- 5G connection over LEO satellite (Telesat 2019)
- Driverless remote vehicle control via 5G – 2017
- New service layer on top of 5G00TM Forum Innovation award 2019
5GIC Testbed and Current Connected Sites
THANK YOU