

CAV@Culham

July 2022

The Culham-Millbrook testbed

We are part of UK Government supported 'CAM Testbed UK.

We partnered with Millbrook to pool experience and assets to host customer focused development, trials, test and demonstration

- 80km tracks in 900 acres - hills, valleys, curves straights
- Aligned procedures
- Behind closed doors or with 2000+ other road users
- High complementarity with other sites
- Endless scenarios - with and without other road users
- Ability to test vehicles, components and (sub) systems
- SME and start up friendly
- Connectivity: DSRC and LTE (with 5G layer)
- 'Smart' street furniture
- Digital twins, mule vehicles, sensor library...

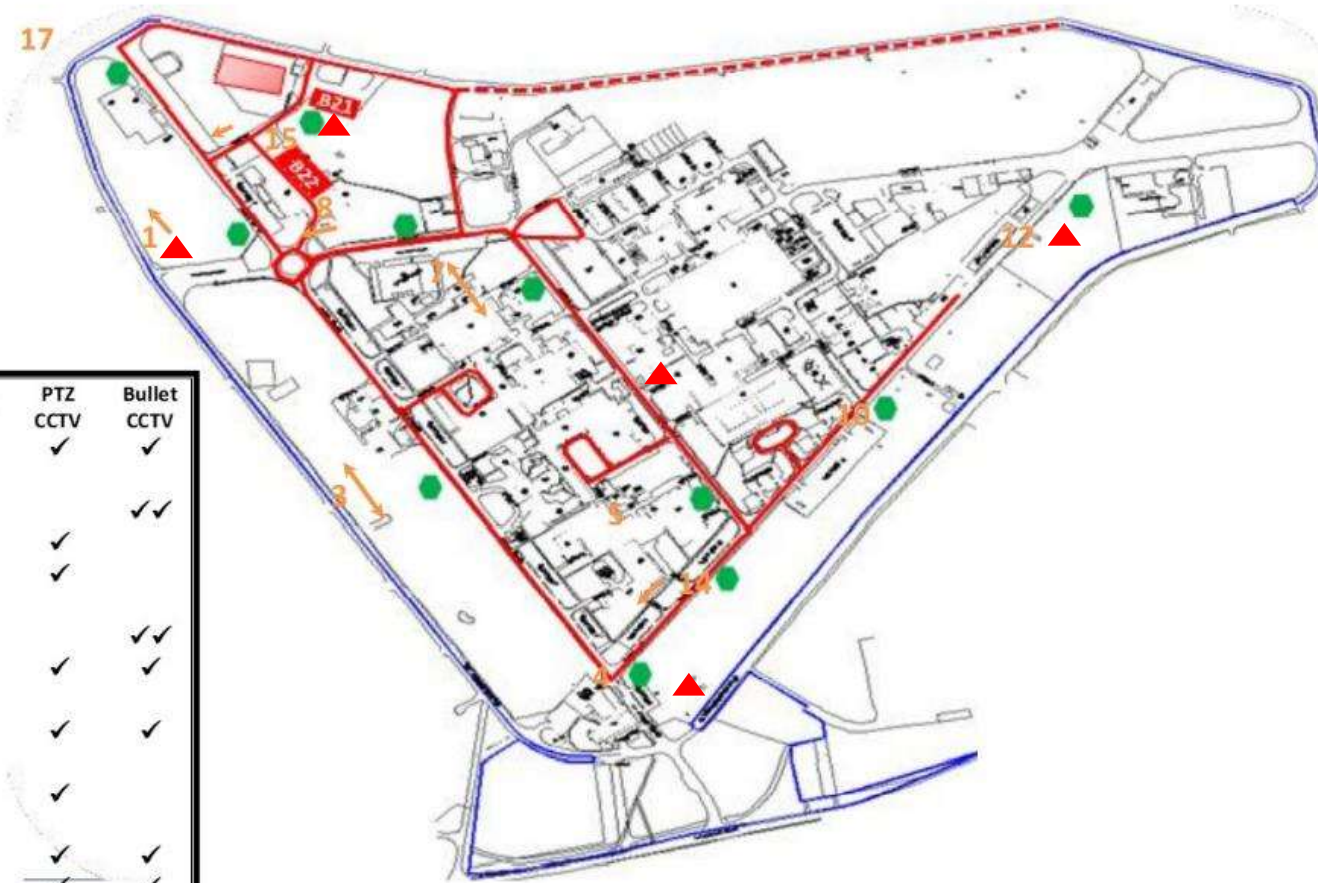


What does this look like?



Connected layer

▲ Private small cell LTE network, upgrade to full 5G underway



Location	LTE	DSRC	PTZ CCTV	Bullet CCTV
1		✓	✓	✓
2		✓		
3		✓		✓✓
4	✓	✓	✓	
5		✓	✓	
6		✓		
7	✓	✓		✓✓
8		✓	✓	✓
9		✓		
10		✓	✓	✓
11		✓		
12	✓	✓	✓	
13		✓		
14		✓	✓	✓
15	✓	✓	✓	✓
16		✓		
17		✓	✓	



Over 6 years testing experience

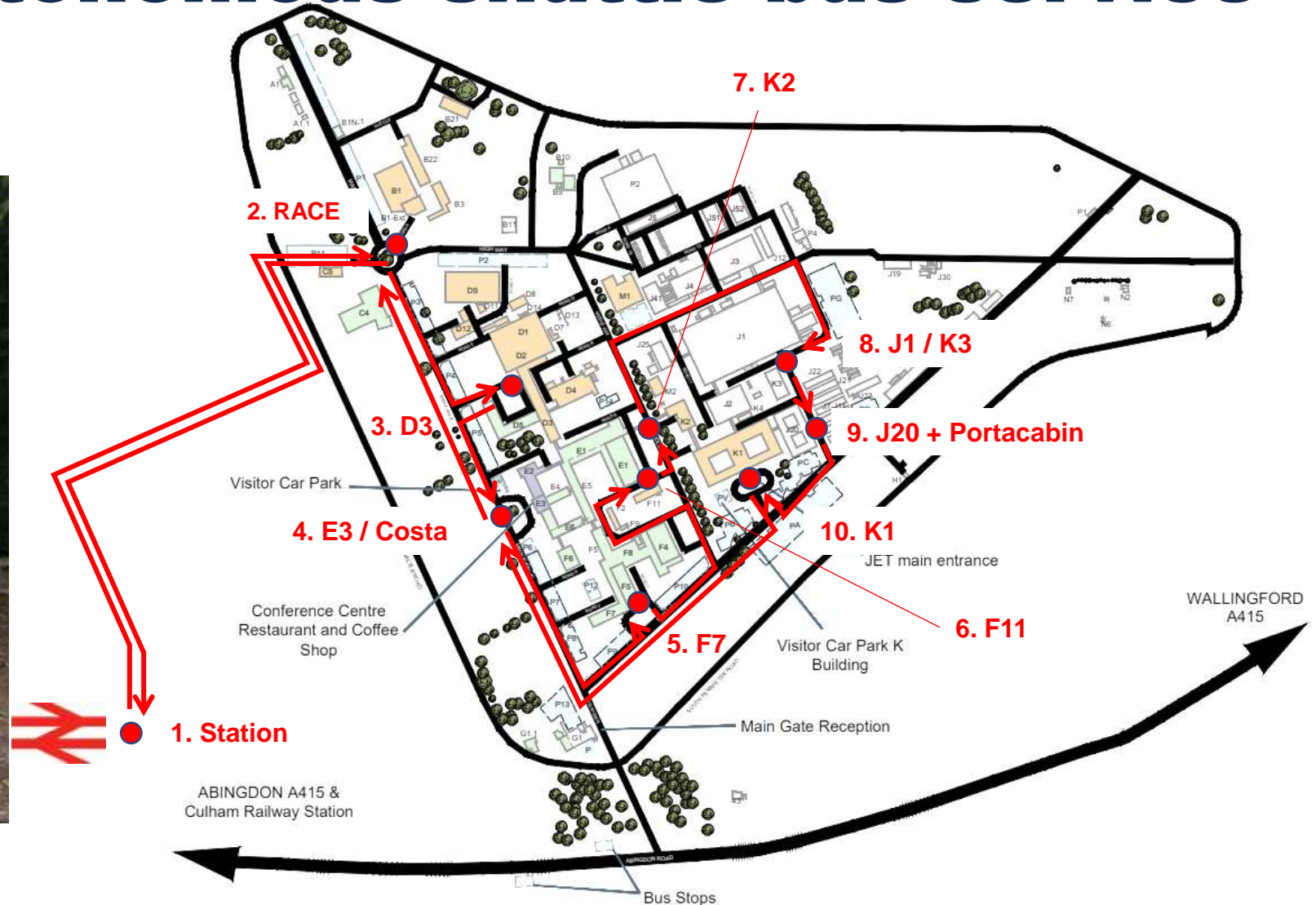


Operating principles

- Our roads are private
- Permitted activity is based on risk assessment
 - On entry do not expect full compliance with codes etc
 - But actively help generate evidence to meet these
- Tiered access:
 - Fenced Test Area
 - No experience required, work towards a graduation test
 - Graduation test can be at Culham or Millbrook
 - Northern Loop
 - 50km monitored operation on relatively quiet roads
 - Graduation test
 - Full access
 - Autonomy on any road with a 20mph speed limit
- Currently moving towards Level 5 operations
- Looking at telematic operation
- Increasing focus on service delivery



Next: An autonomous shuttle bus service



Correlating real world scenarios with simulation

