



**OPENDIGITAL**

WEST SUSSEX

# Growing Sussex 5G Innovation Region

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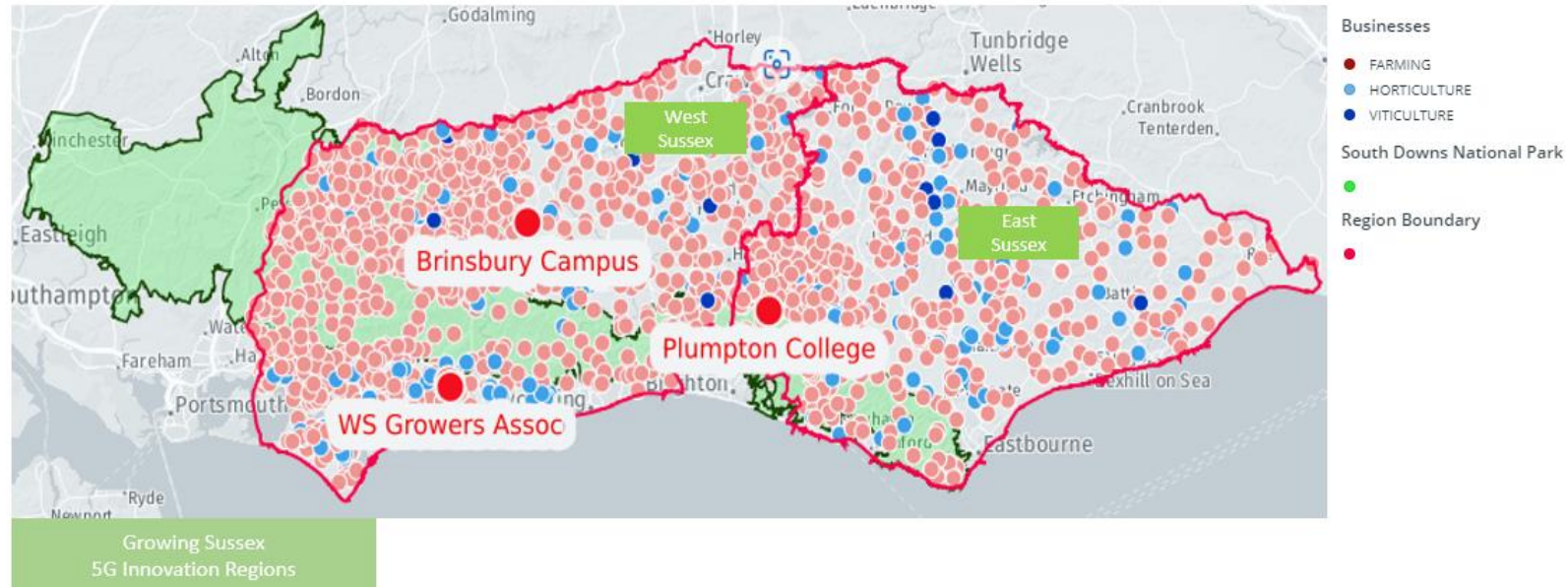
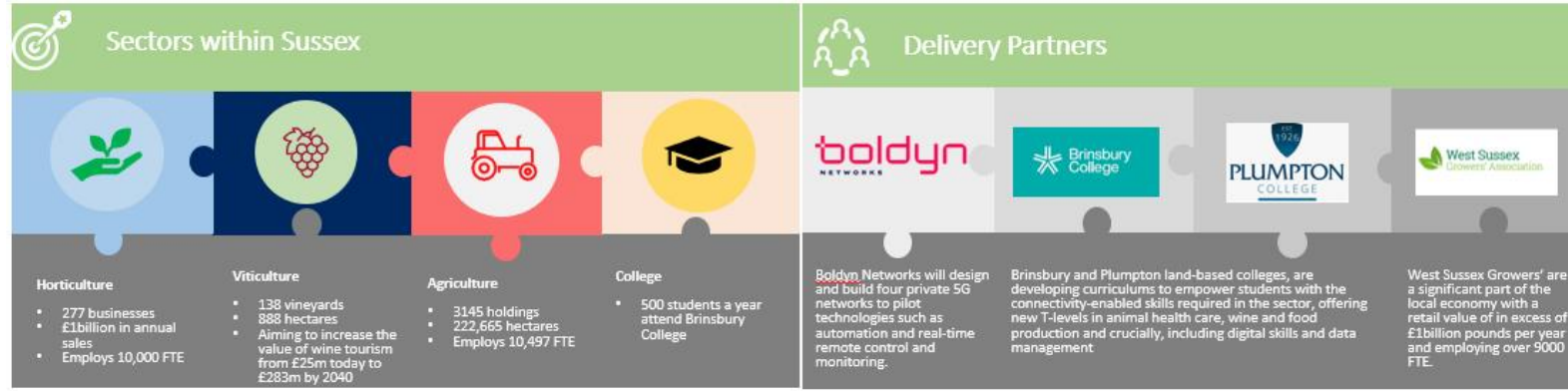
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# Vision

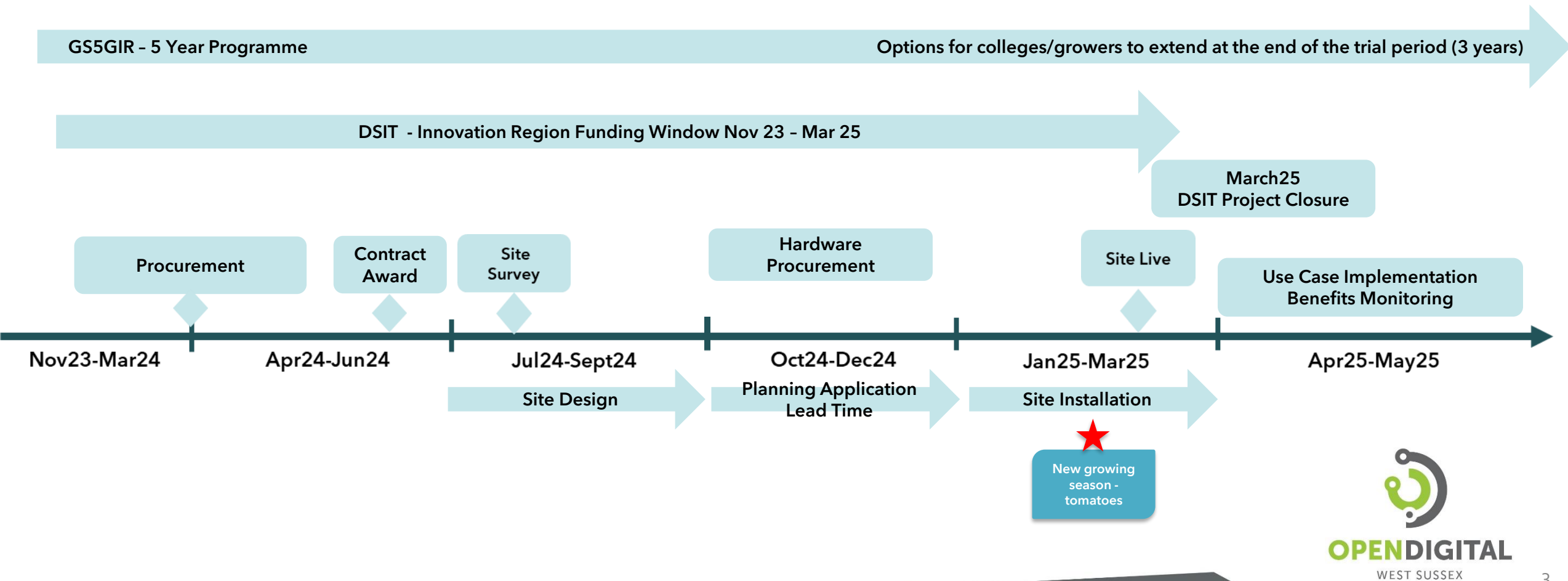
## Project Goals

### Growing Sussex 5GIR will:

- Co-develop with producers and colleges growing practices that employ foundational technologies (5G, IOT, AI) in increasing food and drink production, sustainably.
- Create demand for scalable expansion of 5G/wireless connectivity across sector.
- Build a commercially sustainable 5G investment model.
- Build digital skills and capabilities IoT, AI and automation, developing local workforce.



# High Level Timeline



# Advanced Wireless Solutions Outcomes

Growing Sussex 5G Regional Innovation aims to develop an ecosystem collaboratively bringing together connectivity and technology partners, education centres and commercial producers to grow the region's Growing Sector.

The use cases developed through this programme will:

- increase sustainable food and drink productivity;
- provide a qualified, digitally skilled workforce;
- develop sector-supporting products and services;
- foster a 5G ecosystem through innovation and data sharing at education centres with suppliers and adopters;
- create demand for scalable expansion of 5G/wireless infrastructure; and
- explore the commercial models to enable more food and drink producers to invest in digital connectivity.



# Advanced Wireless Solutions Expectations

As part of the procurement process a range of use cases – delivered through advanced wireless networks (e.g. private 4G/5G or IoT Networks, such as NBloT and LoRaWAN) – have been developed which it is expected will deliver some significant improvements for the Growing Sector in Sussex.

These use cases will be deployed at the four key sites:

- Plumpton College
- Brinsbury College
- Wicks Farm
- The Green House Sussex Ltd.

<b>Use Case 1: Growing Medium (Soil) Quality Monitoring</b>	<b>LoRaWAN</b>
<b>Use Case 2: Crop Health and Diseases – Outdoor Drones</b>	<b>5G</b>
<b>Use Case 3: Viticulture Frost Monitoring</b>	<b>LoRaWAN</b>
<b>Use Case 4: Plant Health Pests Glasshouse Devices</b>	<b>5G</b>
<b>Use Case 5: Crop Monitoring Nitrogen Sensor</b>	<b>5G</b>
<b>Use Case 6: Innovation and Collaboration Spaces</b>	<b>5G</b>
<b>Use Case 7: Vineyard Camera Trap Pest Monitoring</b>	<b>5G</b>
<b>Use Case 8: Glasshouse CO<sub>2</sub>, Temp, Humidity and Barometric Sensor</b>	<b>LoRaWAN</b>

# Use Cases

Use Cases	Commercial Growers		Colleges		Device
	The Green House Sussex (Vine Tomatoes)	Wicks Farm (Strawberries)	Plumpton	Brinsbury	
Use Case 1: Growing Medium (Soil) Quality	Y	Y	Y	Y	IoT-based soil monitoring systems to collect real-time data on soil conditions. This Use Case is to implement a Soil Monitoring System that can either be burrowed into the ground at predetermined locations and depths in the field / greenhouse or raised bed.
Use Case 2: Crop Health and Diseases, Outdoor Drones (5G)	N	N	Y	Y	Drones will capture and evaluate images to determine plant health and the presence of pests and disease.
Use Case 3: Viticulture Frost Monitoring (Smart Vineyard) (5G)	N	N	Y	N	IoT sensors. Smart weather monitoring systems collect real-time data on weather and temperature conditions.
Use Case 4: Plant Health Pests Glasshouse Devices	Y	Y	Y	Y	Sensor. Scan QR code on mobile device. Automating the monitoring of pest traps, providing real-time data on pest activity.
Use Case 5: Crop Monitoring Nitrogen Sensor (5G)	N	N	Y	Y	IoT probe that allows for measuring multiple soil variables: Moisture, Temperature, Conductivity, pH, Nitrogen (N), Phosphorus (P), Potassium (K).
Use Case 6: Innovation and Collaboration Spaces (5G)	Y	Y	Y	Y	All Use Cases will be deployed in agreed location. Boldyn will be responsible for ensuring availability of capacity in the 'test' locations.
Use Case 7: Vineyard and Apple Orchard Camera Trap Pest Monitoring	N	N	Y	N	A camera collects images of pests gathered from traps enabling pests to be identified using AI software. Data, from all locations are presented in reports accessed via desktop or mobile applications, allowing efficient monitoring and the ability to respond to the situation in the field.
Use Case 8: Glasshouse CO2, Temp, Humidity and Barometric Sensor (Smart Horticulture)	Y	Y	Y	Y	A monitoring system that utilises an Internet of Things (IoT) platform providing early warning systems and decision-making support for large-scale cultivation.

# Benefits Realisation

5GIR Objective	Benefit Name	Benefit Description/Title
Programme objective Benefit aligns to.	Use case/trial/application name or short title associated to identify which the measure refers to.	Give a short description of what the use-case is about.
Strategic Local Authority Investment	Alternative funding generated by the project	This includes any alternative funding generated by the project, and could include private funding or local authority budgets etc.
Drive economic growth	Firms from key sectors in the region who engage with the project	Number of firms from key sectors (public services, rural industries, advanced manufacturing, transport and logistics, creative industries, other) in the region who engage with the project. This could include attending workshops or dissemination events put on by the project. Please specify the companies, which sector they are part of and how they have engaged.
Foster the emergent 5G ecosystem	Total Use cases deployed	Number of use cases deployed per region.
Foster the emergent 5G ecosystem	Individual Use cases	Give information on the type of use cases and the number of each type and impact
Foster the emergent 5G ecosystem	Improved Connectivity	Measure of improved connectivity
Foster the emergent 5G ecosystem	Dissemination events	Number of dissemination events (e.g. workshops, presenting at conferences). Please give detail on the number of each type of event and who attended/engaged in the events
Foster the emergent 5G ecosystem	Networks continuing operation	Number of networks continuing operation at the end of the programme. To only be reported on in last BR collection
Stackable Use Cases	Improved Connectivity	Measure of improved connectivity increasing the provision of fibre and mobile connectivity
Digitally skilled workforce	Additional employment	Number of students undertaking commercial horticulture sector placements
Career Opportunities	Skills Provision	Number of course modules developed utilising new technologies
Digitally skilled workforce	Skills Provision	Number of students choosing to study courses in commercial horticulture and viticulture (i.e.. not including landscaping)

# Strategic Stakeholder Engagement



## Local Councils

- SDNP
- Horsham DC
- Arun DC
- Parish Councils



## Central Government

- DSIT
- UK TIN
- DEFRA



## Global Interest

- University of New England (Aust.)



## Communities

- Local Cllrs
- Parish Councils
- MPs



## Universities

- University of Brighton
- University of Sussex





**Questions?**