

SPACE IN CORNWALL

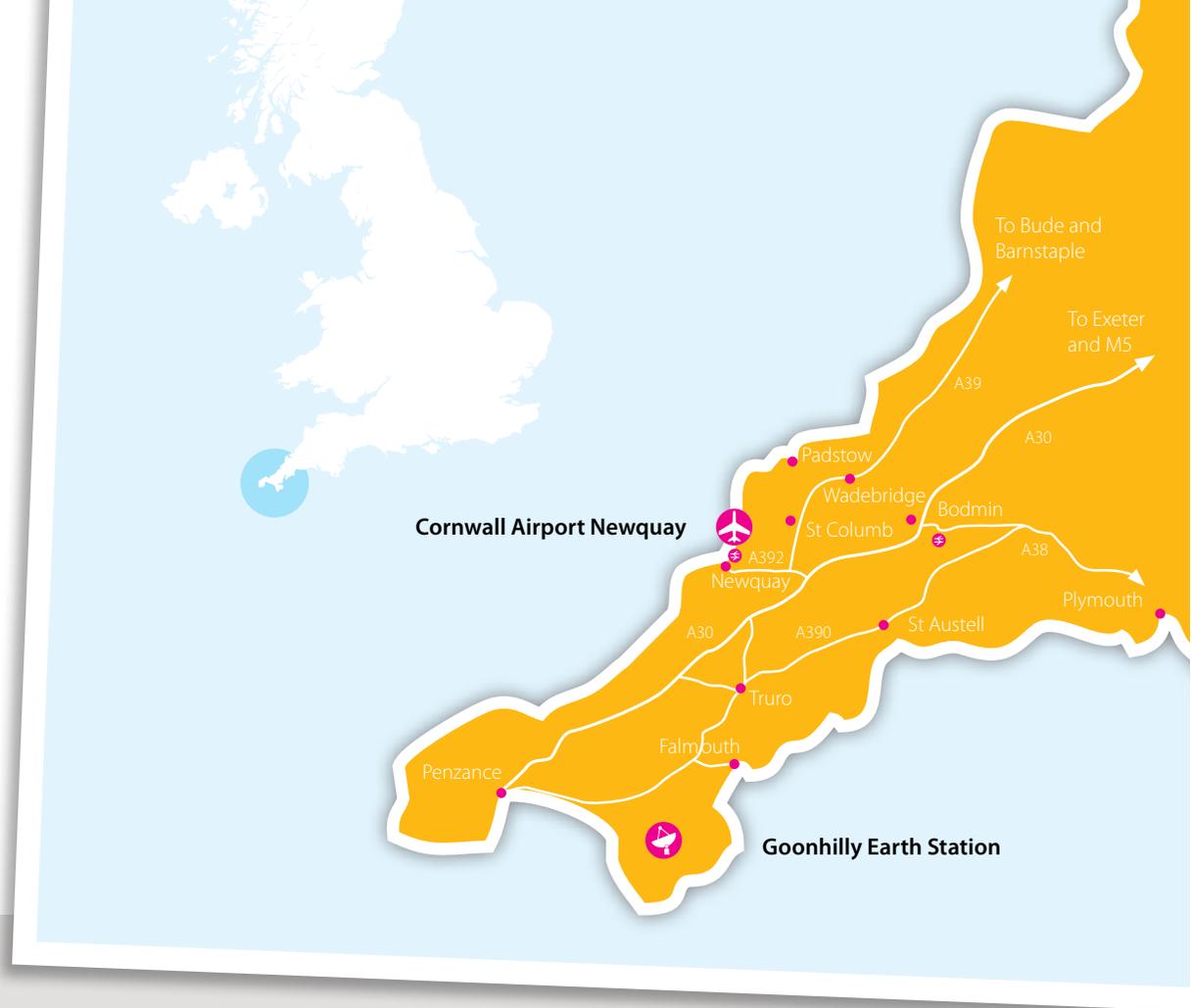
QUESTIONS AND ANSWERS



What is a Spaceport?

Fundamentally it's about offering safe and low-cost access to space for a range of possible users. A Spaceport can be a licensed location at an existing Airport where horizontal launched spaceplane systems can operate and test.

In addition the location is likely to attract associated industry, supply chain activity and the manufacture/assembly of space systems. A core activity is intended to be the launch of Earth orbiting spacecraft for a range of useful applications, such as monitoring crops or providing navigation for driverless cars, as well as spaceplane systems carrying low gravity scientific experiments or even passengers.



Spaceport Cornwall could create

2000

jobs by 2028

What is Spaceport Cornwall?

Spaceport Cornwall is the name given to the project which encompasses Cornwall Airport Newquay, Goonhilly Earth Station and the wider space and aerospace supply chain in Cornwall.

The project is being driven by the Aerohub Enterprise Zone team at Cornwall Development Company and Cornwall Airport Limited, on behalf of Cornwall Council and the Cornwall and Isles of Scilly Local Enterprise Partnership (LEP). The LEP is leading the bid for a share of Government investment to make Spaceport Cornwall a reality.

What is a Spaceplane System?

Spaceplane Systems usually comprise of commercial aircraft carrying a separate rocket vehicle designed to deploy satellites or other space payloads, space flight experiences and scientific tasks. Systems can launch objects, or people, into space for brief periods and return to Earth (suborbital flight), or into orbit for periods of months or years. The 'carrier' aircraft transport the rocket to a safe area or 'range' where it activates a high energy propulsion system to accelerate the spacecraft to the velocity and altitude necessary for Earth orbit. Spaceplane carriers are aircraft and operate under national regulations issued by the Civil Aviation Authority, but launch into space using rocket propulsion will be regulated by the Commercial Spaceflight Act which will involve the UK Space Agency and the Department for Transportation under a new act of Parliament.

Will the Spaceplane Systems be flying over Cornwall?

Spaceplane carriers will operate in the immediate vicinity of NQY as they take off and land, but operation of the high energy propulsion systems required for space launch will only take place at some distance off the coast, in a specially designated restricted flying area. Launches to orbit are likely to take place in the North Atlantic west of Ireland in a Northerly direction to achieve a polar orbit.

Are Spaceplane Systems safe?

Spaceplane Systems contain rocket propulsion systems which must harness inherently higher energies than commercial aircraft. Comprehensive testing over unpopulated areas such as ocean,

demonstrating safe operation of all spaceplane technologies will be required to obtain launch licenses. The flight routing for operating Spaceplane Systems will avoid residential or built-up areas; minimising the risk to 3rd parties. The UK Space Agency, Department for Transport and the Civil Aviation Authority are crafting a regulatory framework for safe spaceplane operations.

What is the UK Government Strategy on Spaceport?

The 'Space Innovation and Growth Strategy 2014-2030 Space Growth Action Plan' identifies and prioritises a series of actions to realise the government's ambition to grow the UK's share of the global space market from 6.5% to 10% by 2030. The Action Plan includes an ambition to establish a Space Port in the UK by 2018 and to identify further reforms to regulation which will be needed to allow commercial space flight in the UK. Commercial spaceflight enables a wider range of space activities and services in the UK that ultimately deliver economic and societal benefit.

How does Cornwall Airport Newquay become a Spaceport?

In 2014, Cornwall Airport Newquay (CAN) was shortlisted as a potential site for the UK's first Spaceport. Local partners submitted a Consultation Response to the DfT in 2015 outlining our proposition. The UK Space Agency (UKSA) is now seeking joint proposals from a Spaceport and an Operator for a commercial space launch to be in place by 2020. The 'open call for investment' was launched in March and proposals are invited for a possible investment of up to £10m. Spaceport Cornwall will be making a bid, and is partnering with several commercial operators. These proposals will be submitted to the UKSA on April 28th, 2017.

The project is being driven by the Aerohub Enterprise Zone team at Cornwall Development Company and Cornwall Airport Limited, on behalf of Cornwall Council and the Cornwall and Isles of Scilly Local Enterprise Partnership, which is leading the bid.

Why is Cornwall Bidding?

The commercial spaceflight market could be worth £25bn over the next 20 years. We believe Spaceport Cornwall could have a transformational impact on our economy by creating a high-value space cluster that would help deliver the Government's National Space Policy and its Industrial Strategy. Our objectives are:

1. To be selected as the UK's first spaceport, partnered with commercial launch operator(s).
2. To raise the profile of Cornwall Airport Newquay, Aerohub Enterprise Zone, Goonhilly and Cornwall as an ideal place to do business.
3. To attract investment and promote trade by showcasing the operational potential of the airport and the wider Cornish business environment.
4. Catalyse stakeholder's economic prosperity by driving local growth.
5. Space inspires: Spaceport Newquay is the perfect opportunity to inspire young people in Cornwall to pursue science engineering mathematics and technology careers. Space will also attract talented individuals to Cornwall who can create opportunities for economic growth.

What does the bid consist of?

The bid consists of each potential Spaceport site partnering with commercial operator/s that can show a realistic prospect of safe, horizontal launch services in 2020.

Who will use the Spaceport?

Operators launching spacecraft and passengers into space will be working alongside developers of satellites, launch vehicle supply chain companies, rocket propulsion testing and scientists studying the impact of the space environment and low gravity on future space systems.

Does that mean there will be rockets launching from CAN?

The operators we are partnering with plan to use horizontal launches where civilian conventional aircraft take off in normal fashion but are carrying a rocket launch vehicle instead of normal cargo or passengers. Once the aircraft reaches a safe operating area, well away from any risk to 3rd parties, the rocket detaches, ignites and follows a trajectory into space. We will be testing these systems at CAN and there will be some ground rocket tests. There are currently no plans for a vertical launch facility in Cornwall.

How much would setting up a Spaceport in Cornwall cost and where will this money come from?

We are considering a phased approach to the project and infrastructure and buildings that matches the build-up in space launch activity anticipated over the next few years. We are bidding

for £10M of National UKSA funding that is only available for a Spaceport, so this is will be new government money injected into the Cornwall economy. We estimate phase 1 of the Spaceport will cost in the region of £20-25m to include the support for launch system development. The remainder of the investment is planned to be made up of local funding matched by significant private sector investment.

How would a Spaceport benefit Cornwall?

Benefits range from high value job creation, inspiring young people, facilitating space based navigation, environmental monitoring & security and mobile communications services to society.

The spaceport has the potential to cumulatively realise over £100Ms of additional economic activity in Cornwall, and nationally 1,000s of new jobs from suborbital human spaceflight, satellite launch, regional tourism and microgravity research by 2028. The principal drivers of this planned economic impact are the growing sub-orbital space tourism market and the increasing number of small satellite launches. The UK manufactures large numbers of small satellites but currently has to export them internationally for launch at substantial cost. Tourism related additional economic impact is also predicted to be significant.

From an education perspective, having suborbital and orbital capability benefits academia with student opportunities to design, develop, and launch experiments, gaining hands on experience in science and engineering. This provides unique opportunities to inspire and motivate students to pursue STEM subjects. Having a Spaceport able to support an active space programme with frequent access to space will also attract

international researchers and students to the UK generating further economic and collaborative research activity.

The spaceport would therefore act as a catalyst for a very diverse set of activities and operations, e.g. the establishment of human and scientific spaceflight from the UK.

What if Spaceport Cornwall is not successful?

A Spaceport is only part of the wider space sector growth in Cornwall. If we are not successful, we still have a thriving tracking and monitoring capability at Goonhilly, a rocket test facility at Cornwall Airport Newquay, and several innovative space companies already here. Cornwall would continue to support the growth of downstream applications working with the South West Centre of Excellence in Satellite Applications, which is located at Goonhilly. We would also continue to work closely with the UKSA and any operators that may have requirements for testing.

Spaceport Cornwall could realise

£320M 

of economic activity

Where can I find out more information?

• Digital Channels

- Website: www.spaceportcornwall.co.uk
- Twitter: @SpaceCornwall
- Facebook: @SpaceCornwall

• Upcoming Events for Further Spaceport Cornwall Info

- May 17th : Cornwall Business Fair
- May 30-June 1st: UK Space Conference
- June 8th-10th: Royal Cornwall Show
- Other Local Information Events and Parish Council sessions tbc

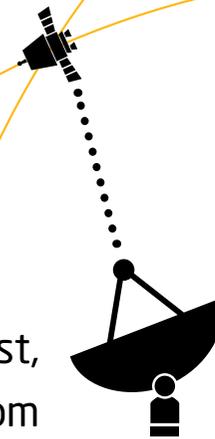
• Points of Contact

- **Media Enquires**, Jason Clark, Jason.clark@dca-pr.co.uk,
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£25bn

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Research, design, test,
launch, track - all from

Cornwall



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