

# The Future of Telecoms



Committee for  
Economic Development

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# Executive Summary

The States of Guernsey has published its strategic Policy and Resources Plan (Guernsey – Great Today, Better Tomorrow) that is the 20-year vision for Guernsey. It states that ‘We will be among the happiest and healthiest places in the world, where everyone has equal opportunity to achieve their potential. We will be a safe and inclusive community, which nurtures its unique heritage and environment and is underpinned by a diverse and successful economy’. The P&R Plan has 23 policy objectives and number four is Digital Connectivity.

The Digital Connectivity policy states that - The digital industry, and the digital enablers for industry, are a strong focus for the States of Guernsey, owing to it being a high value, low footprint economic activity, suitable for a small island where land and workforce are at a premium. Digital connectivity is a priority in order to facilitate and support that industry. Additionally, there is also a need for government and local businesses to become digital by default if they are to remain competitive. The island’s aims for this policy are set out in the Digital Sector Strategic Framework Document, which prioritises the following:

- ⦿ Driving digital sector growth
- ⦿ Delivering next generation digital infrastructure
- ⦿ Developing the digitally skilled workforce of the future
- ⦿ Providing world leading and proportionate legal, compliance and regulatory environment

This Telecommunications Sector Policy Statement lays out how ‘Delivering next generation digital infrastructure’ will be achieved through the existing competitive market, regulation and targeted Government support.

The Committee for Economic Development (CfED) has developed three key objectives for Telecoms in the delivery of next generation digital infrastructure. These are developed from the following core assumptions:

- ⦿ Government role is to set the policy direction and objectives but for the market to deliver them within a regulated structure.
- ⦿ Government’s role is not to interfere with a working competitive market, if that market will deliver the policy objectives.
- ⦿ Government can support the market where the commercial economic case cannot be made.

- ⦿ Digital connectivity is critical to islanders and therefore its provision must be based on the principles of equality and access for all.
- ⦿ Government recognises the uncertain technology landscape; especially with next generation mobile technology.
- ⦿ Government is technology agnostic and will not specify technology solutions to deliver its policy outcomes. The validity of business cases rests with the telecommunications companies within the current competitive market.
- ⦿ Environmental impact must be considered, and delivery should have the minimum of adverse environmental impact.

### The three key objectives are:

- |   |   |  |
|---|---|--|
| <p><b>1</b> Provision of Fibre to business districts within 2-3 years</p> | <p><b>2</b> Provision of high quality super-fast broadband to all residential properties within 2-3 years</p> | <p><b>3</b> Provision of next generation mobile technology in line, or earlier than the UK</p> |
|---|---|--|

During the next 2-3 years the current competitive market environment is expected to fully meet the requirement of the provision of fibre to business districts. Over a similar timescale the market is expected to expand its residential broadband offering to provide super-fast services to around 85% of the population.<sup>1</sup>

The standard for next generation mobile technology has not yet been set but is likely to require significant investment by the telecommunications operators. This combined with environmental factors may, unless addressed, delay the roll-out of next generation mobile.

The remaining challenges therefore fall into two main areas:

- ⦿ How to provide superfast broadband to the remaining 15% of residential properties.
- ⦿ How to ensure the telecommunications companies can make the investment decisions to deliver next generation mobile technology but in a manner that doesn't have an adverse environmental impact.

This paper provides the States of Guernsey high-level Telecoms strategy to fulfil the Bailiwick's long-term ambitions for industry growth, development of the digital sector, the future of new government digital services and a digitally enabled society all aligned with the Policy and Resources Plan.

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1. Fibre to the Cabinet (FTTC) Technology is unlikely to achieve the target of 100Mbit/s, although speeds close to that can be achieved when the distance of "last-mile" copper is small. Further technology advances will see data rates improve.

Below is a summary of the main points in each section of this paper.

## 1 Fibre to business

Both Sure, the incumbent telco, and JT, their main competitor in the fixed communication area, are committed to continuing the rollout of fibre to the key business districts of Guernsey, ensuring availability and competitive service offerings. Airtel-Vodafone as a mobile only operator has no aspiration or intention to rollout fibre in Guernsey but aims to offer similar business services via its island-wide 4G network and continued access to backhaul will be required.

Rollout of fibre networks is disruptive and costly, meaning that it takes time to reach all business areas, and the business case requires continuous refinement. While today both Sure and JT remain committed to a rollout which meets the States of Guernsey objectives, small changes to the economics could see plans change quickly.

## 2 Residential Broadband

As the number of connected devices in the home increases combined with higher data usage (such as video streaming) combined with evolving requirement for flexible and home working means that digital connectivity is becoming an integral part of people's daily lives. In the short to medium term the advances in the Internet of Things (IoT)<sup>2</sup> is likely to see this demand only increase. The requirement for access to high-speed broadband is rapidly moving beyond the home as a gateway to entertainment, and into the wider setting as a lifestyle, social and community necessity.

It is considered that the competitive commercial environment in Guernsey will ensure that close to 85% of residential households will have access to superfast broadband service in the next 2-3 years. Speed itself is not the only requirement and overall performance is also critical. Whilst the objective is for superfast broadband will be available to customers with up to 100Mbps there will also be the requirement for consideration of latency, peak performance and availability as well as the digital Voice of the Customer (dVoC) assessments. However, Government will not be mandating the level of connectivity, as this is

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2.The Internet of Things (IoT) – Reference, [https://en.wikipedia.org/wiki/Internet\\_of\\_things](https://en.wikipedia.org/wiki/Internet_of_things)

a consumer decision, rather it will support the market in making available these circuits to all residential properties so that all islanders can have the option to purchase it. The rollout of Fibre to the Cabinet (FTTC), with the “last-mile” distribution over the existing copper network will continue. 4G mobile networks also offer a high-speed broadband service which will provide an alternative for some users, and an attractive in-fill for those areas where the fibre rollout does not reach.

Mobile technologies like 4G are increasingly seen as offering a viable alternative to provide high-speed home broadband services. Beyond the obvious advantage of mobility, rollout of mobile networks is less disruptive and most often cheaper than the fixed alternative although consideration will be needed in regards to developing technology such as use of larger antennas.

Government does not intend to interfere into well-regulated and working competitive market such as residential broadband telecoms market. However, this sector policy recognises that Government does have a role in supporting the Island’s operators in bringing the relevant infrastructure to the remote areas of Guernsey where a commercial economic business case cannot be justified. This does not interfere with the working competitive market and CICRA, in conjunction with Government, will define the basis on which, public funds available could be made available to ensure the residual 15% of residential properties can also have access to super-fast broadband. so that Government support can be applied for.

### 3 Fixed or Mobile

The International telecommunications Union (ITU) programme “IMT for 2020 and beyond” finalised its vision for the 5G mobile broadband connected society in late 2015. The vision incorporated a number of key messages including:

- Mobile Broadband is Not Optional in Society
- Technology Evolution and Additional Spectrum are a Must If the Societal Benefits are to Continue

This Vision for the future of mobile communications has informed the 3GPP document “Description template of

3GPP 5G candidate for inclusion in IMT-2020”, a summary of the technical characteristics of the 3GPP 5G solution.

As the 5G standardisation work progresses in 3GPP, the GSMA has produced its own vision for the 5G era “The 5G era: Age of boundless connectivity and intelligent automation” and proposes 5 industry goals:

- ⦿ Provide boundless connectivity for all
- ⦿ Deliver future networks innovatively and with optimal economics
- ⦿ Accelerate the digital transformation of industry verticals
- ⦿ Transform the mobile broadband experience
- ⦿ Drive growth in new use cases for massive IoT and critical communications services

Taken together these 5G industry goals can inform innovative thinking and shape new strategies for telecoms in Guernsey.

## Strategic Context

The States of Guernsey’s Policy and Resources Plan identifies digital connectivity as one of 23 strategic priorities. The Committee for Economic Development documents “States Economic Development Strategy” and the “Digital Sector Strategic Framework”, highlight some key objectives for the Guernsey economy. Alongside developing existing areas of the economy, are goals to support advances in new sectors, for example Digital Businesses and FinTech. The report highlights a number of factors needed to facilitate business growth, key amongst those is connectivity and infrastructure.

The Analysis Mason report “Guernsey Connectivity Review” covers the current situation of telecoms in great detail and makes some proposals for future connectivity requirements and how these could be achieved. This paper builds on this work and proposes ways in which government policy and telecoms regulation will be formulated to encourage industry involvement and ultimately deliver the States vision for economic development.

# Fibre to Business

Both Sure, the incumbent Telco, with the major market share, and JT, their main competitor in the fixed communication area, are committed to continuing the rollout of fibre to the key business districts of Guernsey, ensuring availability and competitive service offerings. Airtel-Vodafone as a mobile only operator has no aspiration or intention to rollout fibre in Guernsey but aims to offer similar business broadband services via its island-wide 4G network.

Rollout of fibre networks is disruptive and costly, analysis shows that anything from 60% up to 80% of the cost of a fibre project are in civil works (ducts and cables) and estimates of anything up to £200 per metre and more in challenging urban areas are not uncommon. Along with this, the required transport and personal disruption can be considerable, meaning that it takes time to reach all business areas, and the business case requires continuous fine-tuning.

While today both Sure and JT remain committed to a rollout which meets the States of Guernsey objectives in the next 2-3 years, small changes to the economics could see plans change quickly and Government will continue to monitor the roll-out to ensure this target is met.

In summary the delivery of its first policy objective 'the provision of fibre to business districts' it is the view of Government that this will be achieved without any additional support to the telecommunications companies.

# Residential Broadband

As a cornerstone of its aspiration to ensure that Guernsey has the level of connectivity and service needed to deliver the stated objectives for economic and social development, the second policy objective states Government's position to ensure that a superfast broadband service is available to all residential households.

In defining the need for superfast broadband, a range of factors have to be considered. Whilst speed is the common 'marketing' tool for telecommunications operators, and it is a material consideration, other factors affecting performance also need to be considered. These include considerations of peak and average speed, latency, reliability and availability. In such a diverse technology area, such as broadband, where multiple services run simultaneously with differing requirements on speed, data throughput and latency it can be difficult for customers to understand the service they require and whether the service they have purchased is meeting its contractual obligations. In order to ensure that all residential



properties have access to superfast broadband it does need to be defined; albeit whilst noting that this is a service that is made available, but it remains a consumer decision whether to purchase it. The requirement of superfast broadband required by the second policy objective will continue to evolve and Government, working with CICRA and the telecommunications companies, will keep it continually under review. However currently Government judges that the requirement is based on the ability to provide a circuit of up to 100Mbps with a dVoC<sup>3</sup> (or similar assessment) of 75-80. CICRA will continue to work with the Telecommunications operators to define the requirement considering factors such as the Advertising Standards Agency guidance on advertising of broadband speeds<sup>3</sup> and whether dVoC or another measurement of quality is required in addition to speed. It is judged that the existing competitive commercial environment in Guernsey will ensure that close to 85% of residential properties will have access to superfast broadband service, set against the requirements above, in the next 2-3 years. The rollout of Fibre to the Cabinet (FTTC), with the “last-mile” distribution over the copper network will continue and will be supplemented in some more easily fibre accessible areas with Fibre to the Home (FTTH) avoiding the legacy copper final connection. While FTTC technology has some limitations in terms of speed speeds close to 100Mbit/s, can be achieved when the distance of copper is small. Further technology advances, e.g. the introduction of VHDSL (Very High bit rate Digital Subscriber Line) capability will see data rates continue to improve, but always fall someway short of FTTH.

Government does not want to interfere into well-regulated and working competitive market such as residential broadband telecoms market. Indeed, Government intervention can cause unexpected and negative consequences, however, the principles of equality and access for all mean that without some Government support the commercial economic case could not be made. This would lead to social inequality of access to digital enablers and the services that operate over them. Therefore, this sector policy recognises that Government does have a role in supporting the telecommunications operators in bringing the relevant infrastructure to the remote areas of Guernsey where a commercial economic business case cannot be justified. This does not interfere with the working competitive market and CICRA, in conjunction with Government, will define the basis on which, public funds could be made available to ensure the residual 15% of residential properties can also have access to super-fast broadband. Further CICRA are tasked to develop the regulations that will enable Government support without adverse interference with the market.

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3. ASA Guidance takes effect on 23 May 2018 and after a sixmonth implementation period will apply to residential broadband services.

In summary the delivery of its second policy objective 'the provision of superfast broadband to all residential properties' it is the view of Government that 85% coverage will be achieved without any additional support to the telecommunications companies; the remaining 15% will not be achieved as the telecommunications companies would be unable to make a commercial economic case. For this remaining 15% Government, working with CICRA, will develop a regulatory basis on how Government Funds can be made available.

## Fixed and Mobile

The current telecoms landscape in Guernsey, where the provision of both fixed and mobile services is dominated by Sure with competition in both areas from JT and in mobile by Airtel-Vodafone, is seen as continuing for the next 2-3 years.

The rollout of fibre based fixed services is primarily driven by the ambition to gain more customers and increase revenues. The objective of the States of Guernsey to provide superfast broadband to all residential properties, inevitably shifts the challenge from how to acquire new customers and revenues to how to reach the more remote areas economically. When the business case for a fibre connection no longer works, a mobile solution may provide an answer.

The Guernsey mobile communications market is dominated by Sure, with JT and Airtel-Vodafone sharing just 40% of the market between them. This domination in the market is not down to any significant service or network differentiation but is rather a historical association to the Guernsey Telecom days prior to today's competitive landscape.

All 3 operators have rolled out very similar network capabilities and service offerings and the small differences in coverage and capacity are purely a consequence of the disparate siting of individual elements of the radio infrastructure. True competition exists almost exclusively in the commercial and customer service domains.

While site sharing is relatively common and encouraged, there is currently no true infrastructure sharing between Operators in Guernsey which can cause issues for new entrants.

As the unprecedented growth of IoT continues, so networks must develop to cope with many more connected devices in smart homes and smart cities and devices used by consumers to augment and enrich their lifestyle. Wireless connectivity is considered the most convenient method in most IoT devices – WiFi at the home or office, and cellular mobile elsewhere. While many of the smart home and smart city devices will not be mobile, i.e. they will be fixed in one position, they may still

require both a cellular mobile and a fixed connection to ensure a fall-back for security reasons in case of a service interruption.

Fixed FTTC and FTTH and cellular mobile connectivity will co-exist for the next 2-3 years. Current technologies will deliver close to the objective of up to 100Mbps/s to 85% of residential properties and the business case for rolling out fibre to more rural areas is unlikely to be commercially or economically viable. While 4G may be able to offer an effective infill.

## Next Generation Mobile

Since the first-generation mobile systems were rolled out in the early 1980's, a new generation of mobile technology has been developed approximately every 9-10 years. The current 4th generation (4G) systems were first standardised in 2012 and are now widely deployed across the Channel Islands.

Planning and standardisation activities for 5th generation (5G) mobile networks is already underway and all of the big Telecoms Infrastructure providers have active 5G research and development projects, and early technology trials are underway at numerous locations around the world.

5G standardisation by 3GPP (the global standardisation body) has recently accelerated and the first ratified standard for the "New Radio Specification, 5G (NR)" was agreed at the end of December 2017. Further standards work is expected to deliver the agreed specifications for Core Network and other items in summer 2018. The "final" 5G standard – 3GPP release 16 – is currently forecast for completion in July 2019.

The International telecommunications Union (ITU) programme "IMT for 2020 and beyond"<sup>4</sup> finalised its vision for the 5G mobile broadband connected society in late 2015. This vision incorporated a number of key messages:

- ⦿ Mobile Broadband is Not Optional in Society
  - » IMT is an essential foundation of modern society.
  - » IMT brings the world to people in all countries – it is truly a global force for change and empowerment.
  - » IMT is increasingly becoming the sole means for accessing communication, information, and entertainment.

- » IMT contributes significantly to national economies & jobs.
- » IMT continues to grow at unprecedented rates and supports connectivity, applications, and services that were not envisioned even a few years ago.
- ⦿ Technology Evolution and Additional Spectrum are a Must If the Societal Benefits are to continue.
  - » IMT voice usage remains a key communication medium and most importantly, data traffic volumes have become unbounded and show no signs of scaling back.
  - » IMT systems, technologies, and architectures supporting mobile broadband continue to evolve to improve on spectrum efficiency & utilization. They are adopting new deployment architectures which help but are not the total solution.
  - » IMT must continue to seek new ways to advance the capabilities and push out the boundaries of the technology.
  - » IMT requires adequate spectrum if these society benefits are to continue.
- ⦿ ITU has a rich history in the development of radio interface standards for mobile communications.
  - » The framework of standards for International Mobile Telecommunications (IMT) encompasses IMT-2000 and IMT-Advanced which spans the 3G and 4G industry perspective.
  - » IMT standards will expand to incorporate “IMT for 2020 and beyond”.
  - » Establishing IMT as an excellent global mean for connecting people and devices everywhere will continue in the “5G” future.
  - » ITU-R provides the unique opportunity for collaboration between governments (ITU Member States), industry (ITU-R Sector Members), Associates and Academia. All the viewpoints and concerns are taken into consideration and finally approved by Member States to create globally agreed outcomes (ITU-R Reports, Recommendations and Radio Regulations)

This Vision for the future of mobile communications has informed the 3GPP document “Description template of 3GPP 5G candidate for inclusion in IMT-2020”, a summary of the technical characteristics of the 3GPP 5G solution.

The GSMA has set 5 mobile Industry Goals for the 5G era<sup>5</sup>:

- ⦿ Provide boundless connectivity for all
- ⦿ Deliver future networks innovatively and with optimal economics
- ⦿ Accelerate the digital transformation of industry verticals
- ⦿ Transform the mobile broadband experience
- ⦿ Drive growth in new use cases for massive IoT and critical communications services

In order to meet these goals 5G technology development has focussed on delivering a number of key requirements:

- ⦿ Data rates of 10's of Mbit/second for tens of thousands of users
- ⦿ Data rates of 100's of Mbit/second for metropolitan areas
- ⦿ 1GB/second simultaneously to many workers on the same office floor
- ⦿ Several hundreds of thousands of simultaneous connects for wireless sensors
- ⦿ Spectral efficiency significantly enhanced compared to 4G
- ⦿ Improved coverage and availability – perception of 100% coverage and 99.999% availability
- ⦿ Improved latency
- ⦿ Reduced energy consumption

In essence, the advantages of 5G will be much greater data speeds (broadly matching those of FTTH) and much lower latency with capacity for a massively increased number of devices when compared to current 4G networks. The GSMA's 5 goals should be used by the mobile industry to shape network planning and design strategy and inform 5G investment decisions.



New harmonised mobile spectrum is required to ensure future 5G services deliver the full range of potential capabilities. The GSMA proposes that 5G needs spectrum within three key frequency ranges to deliver widespread coverage and support all use cases.

- ⦿ Sub-1 GHz, will support widespread coverage across urban, suburban and rural areas and help support Internet of Things (IoT) services
- ⦿ 1-6 GHz, offers a good mixture of coverage and capacity benefits. This includes spectrum within the 3.3-3.8 GHz range which is expected to form the basis of many initial 5G services
- ⦿ Above 6 GHz, needed to meet the ultra-high broadband speeds envisioned for 5G. A focus will be on bands above 24 GHz – this includes growing interest in the 24 GHz and/or 28 GHz bands which could be easily implemented together in a single device due to their close proximity. There is also some interest in exploring bands in the 6-24 GHz range.

Radiation Protection - In Guernsey each mobile network operator's licence contains an obligation to meet the standards set by a recognised international body, the ICNIRP for their mobile networks and equipment.

ICNIRP, the Independent Commission on Non-Ionising Radiation Protection, is an independent international body recognised by the WHO which was set up to review the effects of non-ionising radiation (NIR), which includes radio frequencies used to provide mobile phone services, on health. It publishes guidelines on the appropriate levels of emissions, and periodically reviews them to take into account new scientific findings.

In addition to the licence obligations imposed on each operator, CICRA carries out annual audits of telecoms masts and antennas. This includes a biannual survey of all masts, most recently carried out last year following the completion of the roll out of 4G mobile services. The full results, with an interactive map of locations and detailed reports for each individual site are available on CICRA's website. None of the sites surveyed in Guernsey or across the Bailiwick was found to exceed the standards set by the ICNIRP.

The introduction of 5G services is likely to result in more antennas to provide better coverage and the faster data speeds that users demand. Each generation of mobile equipment has become more efficient and required less power to carry data services, 5G is no exception and we would expect that the overall power levels of individual antennas and masts [per gigabit/megabit of data] would be lower than for previous generations of mobile services.

That does not mean we are complacent, and we expect CICRA to impose the same tough standards and inspection regime on 5G services as it currently applies, and to take account of changes and updates to the ICNIRP standards as they are revised.

# 5G Strategy for Guernsey

While in the short term (less than 5 years) the future of telecommunication in Guernsey will see the continued coexistence of fixed and mobile networks offering voice and data services to business and residential customers, as the business case for sustained rollout of fibre infrastructure becomes increasingly challenging, so technology advances and the adoption of 5G as the preferred means to deliver “boundless connectivity for all” and the other industry goals will begin to drive future investment decisions.

In the GSMA's own words:

*“To achieve these goals, the mobile industry needs to unify around a common technology standard and seek to deploy 5G networks on a set of harmonised spectrum bands. The business case is based on finding new models to roll out 5G cost effectively and identifying incremental revenue opportunities that can be served with 5G's superior capabilities....*

*... Society expects 5G to deliver innovation and ultimately economic growth. The expectation is that the benefits of 5G should be realised across society, within the constraints of network economics and with appropriate reward for investment and risk. All stakeholders need to recognise this and work together to ensure their visions of the 5G era are aligned, and that the right foundations are in place to deliver them. Ultimately, the way 5G is developed, regulated, funded and commercialised will determine the future of the industry”*

While the States of Guernsey as a key stakeholder will not seek direct involvement in the technology options for 5G, it can be positively influenced by innovative policy and regulatory strategies:

- ⦿ Deliver future networks innovatively and with optimal economics: All stakeholders will strive to cost-effectively deliver better quality networks either independently or through sharing and partnerships.
- ⦿ Drive growth in new use cases for massive IoT and critical communications services: 5G networks will support the massive rollout of intelligent IoT nodes for a multitude of scenarios and provide a competent platform to support the widespread adoption of critical communications services.

- ⦿ Ensure delivery of 5G to Guernsey is at least as fast, if not earlier, than the mainland UK.

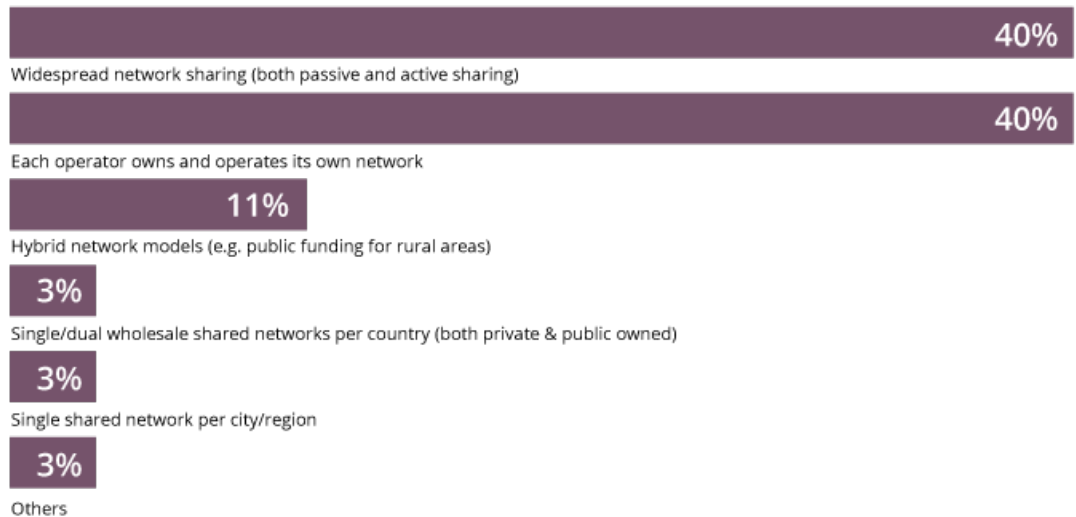
While Government's role is not to interfere with a working competitive market, if that market will deliver the policy objectives, delivery of 5G is different to the continued roll-out of Fibre to Businesses and delivery of super-fast residential broadband. The latter is an expansion of current technology whereas 5G is a new technology into what in effect is a new market. Given the GSMA goals for 5G of boundless connectivity for all the traditional models for competition in the telecommunications market may be challenged. Currently telecommunications operators tend to compete on network coverage and speed, as well as cost and customer service, to win market share and hence justify their business cases for infrastructure investment. Further the environmental impact of unbounded mast proliferation will need to be considered. The potential situation where telecommunications companies can no longer compete for market share on the basis of speed and coverage and the requirement to reduce environmental impact means that 5G in Guernsey, as elsewhere, will likely require new models for infrastructure ownership and competition. Without clarity on the new competitive environment it is possible that investment decisions will be delayed and hence the delivery of next generation of mobile technology will also be delayed. Strategies on where and how-to rollout networks are capital-intensive investment decisions. Once the technology solutions are available, attractive economics and a favourable policy framework are needed to ensure that society and industry goals are realised.

The challenges should not be underestimated. While all stakeholders recognise the necessity to realise economies of scale when thinking about 5G networks, the proven, albeit historical, merits of competition at the infrastructure level may see operators continue to want to build and own their own 5G networks. When surveyed by the GSMA, mobile industry CEOs were equally split on what will be the most common industry structure for 5G infrastructure ownership, with 40% in favour of each operator owning and operating its own network, and 40% favouring the idea of widespread network sharing.

There was very little support for hybrid network models.



## Industry Structure for Infrastructure Ownership



**Question: what will be the most common industry structure for infrastructure ownership in the 5G era**

Network site sharing, already a reality for operators in Guernsey, will continue to be supported and actively encouraged by policymakers and regulators. Given the level of investment needed for network densification in the 5G era, the business case for infrastructure sharing, including full RAN<sup>7</sup> sharing is likely to become more attractive and could become compelling for operators.

Alternative networks also have a role to play in expanding network coverage and capacity. The industry needs to engage with providers of innovative new solutions (drones, aerial platforms, satellites) on how to deliver ubiquitous, high-quality, connectivity.

All of these considerations have an impact on collaborative working and policymaking for 5G. Decisions that strengthen the business case will be taken, for example – innovative spectrum and RAN sharing models, infrastructure and backhaul leasing, capacity sharing “marketplaces”, or “bring your own small cell models could all be designed to lower costs.

The unique opportunities offered by the distinctive, geographically constrained, vibrant social and economic character of The Channel Islands and Guernsey in particular, can fuel innovative new models for 5G and formulating the appropriate policy and regulatory framework now, in consultation with all the key stakeholders, will deliver considerable benefits.

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7. Site Sharing – where operators share the passive elements of the site – e.g. compound and tower, but each deploys their own antennas and radio equipment. RAN sharing – where one radio infrastructure is deployed and shared between operators who each have their own core network. Reference: GSMA; “Mobile Infrastructure Sharing”

In the following section we describe some possible scenarios for innovative new models for the 5G era. Government will look to the Telecommunications Companies and the Regulator, CICRA, to develop the best case network sharing option for Guernsey and the areas where active Government support is required and beneficial.

## New Network Options

The scenarios documented here are aligned with the GSMA and are aimed at developing an environment where network connectivity, quality and availability are ubiquitous, reducing or removing incentives for competition at the network level and bringing about wholesale change to the criteria driving investment in networks. By de-coupling network and service, so new competitors can build innovative business cases to enter the market.

For these scenarios it is anticipated that once 5G is available it will develop into the means to fulfil the objective of “boundless connectivity for all” and the legacy fibre network will evolve into the backhaul infrastructure. However, it should be noted that both fixed fibre, legacy mobile capability and 5G will co-exist for some time.

### 1 Build and operate just a single network and encourage multiple service providers to offer services using it.

- a. Form a joint venture (or some other special purpose vehicle) of network providers to pool their existing infrastructure resources, fixed and mobile. This new “Netco” would be tasked to roll out and operate 5G and legacy networks in Guernsey. Access to the network would be open to any service provider on a regulated basis – for example an “access fee” based on the number of users, and a “per GB fee” for usage. Access for IoT and critical communication services would be provided on a different fee structure designed to encourage widespread adoption.

Planning policy could encourage the rapid rollout and densification of the single 5G network

The system for the award of radio spectrum licenses – designed in an era of competition at the network level, should be changed and one licensee (the “Netco”) should receive all of the available spectrum without usage restrictions, but with agreed objectives for coverage and quality. Without the driver of competition, a realistic fee for use of spectrum would need to be agreed.

Given the relative scope and resources of the existing network operators, it is envisaged that Sure would form the basis of the Netco in Guernsey and JT in Jersey if a similar approach is taken across the Channel Islands.

**Pros:** Only 1 5G network  
Network and service de-coupled  
Efficient use of radio spectrum  
Encourages competition at the service level  
Good opportunities for IoT and government services

**Cons:** Netco revenues are regulated, so limited financial scope  
Challenging model to take account of levels of investment in existing networks.

② **Maintain the existing fixed and legacy mobile state of play and build a single new 5G network.**

a. If 5G is considered as a completely new stand-alone network, it could be built independently from existing mobile infrastructure. A new 5G network company (could be a consortium of the existing operators) would be given the exclusive license for 5G and the existing operators would not be allowed to build 5G networks.

Planning policy would need to mandate sharing of facilities (radio masts, etc.) and the flexible planning rules should make the mandated rollout to rural areas more financially attractive.

New spectrum made available for 5G should be awarded to only the 5G operator on a fee basis similar to the above.

Interconnect, and leasing of backhaul capacity would need to be regulated to ensure sustainable pricing is obliged.

Existing operators and new entrants could offer competitive services over the 5G network. As a key stakeholder in the new 5G network (by virtue of licensing, planning and other incentives) the States of Guernsey could also provide essential and community services using 5G.

**Pros:** Only 1 5G network  
Good opportunities for IoT and government services

**Cons:** Network and service remain coupled for fixed and legacy mobile services  
5G network revenues are regulated, limiting financial scope, and introducing challenging competitive relationship with legacy networks

b. As in scenario a) above but invite interested new 3rd parties to build the 5G network. For example; Telecoms infrastructure vendors (ZTE, Huawei, Ericsson...); other global operators (Vodafone, O2, France Telecom, 3...)

**Pros:** Only 1 5G network  
Good opportunities for IoT and government services  
Opportunity for “sponsorship”

**Cons:** Network and service remain coupled for fixed and legacy mobile services  
5G network revenues are regulated, limiting financial scope, and introducing challenging competitive relationship with legacy networks.

**3 Maintain the current competitive network situation but pursue a determined approach to RAN sharing for 5G through legislation, planning rules and regulatory policy.**

a. Investment in 5G is key component of any strategy to achieve the goal ubiquitous super-fast mobile broadband to every part of Guernsey. As operators look to rollout 5G, potentially requiring many times more radio stations to be deployed than the existing 4G networks, a legislative and regulatory environment that requires RAN and transmission backhaul infrastructure sharing will drastically reduce the environmental impact of competing island wide networks, for example:

- ⦿ Planning policy could encourage the rapid rollout and densification of the RAN sharing 5G network.
- ⦿ States of Guernsey could, within the bounds of planning policy, look at States’ owned property and other infrastructure (e.g. street lights, traffic signs, etc.) to be made available for shared infrastructure purposes.
- ⦿ Planning policy will also encourage the deployment of very small “micro” radio sites inside and outside of commercial and private properties – a “bring your own small cell” approach, where operators would provide a service utilising privately deployed radio infrastructure.
- ⦿ The interconnect cost of fibre backhaul to 5G sites should be regulated as sites and backhaul transmission are shared. In this way no operator can enjoy a commercial advantage when it comes to rolling out 5G to areas where fibre is scarce.
- ⦿ The regulator could link the availability of spectrum to an obligation to RAN sharing.

**Pros:** Reduces the number of new 5G radio sites required hence makes an attractive business case for operators.  
Operators continue to have separate logical networks and spectrum.  
Partially achieves the ambition of separating network and service.

**Cons:** Challenging to enforce the regulated use of fibre for transmission backhaul as this was not considered when the operator's business case for fibre rollout was formulated.

One of the principles is that Government does not intend to intervene in a working competitive market. The advent of the 5G standard and the GSMA proposition of boundless connectivity for all does however challenge the current models for telecommunications competition. The role of Government is therefore to encourage, support and provide certainty to the investment decisions being made by the telecommunications companies; whilst discouraging under and over investment that will both have a negative impact on the consumer. As the standard for 5G has yet to be set Government wishes to encourage a meaningful discourse with itself, the telecommunications operators and CICRA with the aim of the successful delivery of the third policy objective of the 'Provision of next generation mobile technology' as fast as, if not earlier than the UK. The position of Government, in order to encourage investment decisions is that:

- 1 5G Network** A single, resilient 5G network that provides boundless connectivity can meet the needs of the Island. A far greater level of network sharing, a new single 5G network or a RAN sharing would meet this requirement. Government will support the regulator in developing the model for the delivery of the most cost effective 5G network that builds competition at all levels, not just the network level, to the advantage of the consumer. CICRA will advise on what legislative and regulatory action is required.
- 2 5G Backhaul** CICRA to consider the regulation of the interconnect cost of fibre backhaul to 5G sites as sites and backhaul transmission are shared. In this way no operator can enjoy a commercial advantage when it comes to rolling out 5G to areas where fibre is scarce.
- 3 5G Spectrum** Spectrum to enable 4G was free. The States of Guernsey and CICRA to consider the availability and cost of spectrum with the obligation to develop the most effective 5G network and to ensure sufficient spectrum is available.

#### **4 Planning Policy**

Planning policy will be used to encourage the rapid rollout and densification of the 5G network in support of the delivery of the most effective shared 5G network in accordance with the States environmental and planning policies. The Planning Authority has extensive experience of successfully securing mast- and site-sharing by operators gained when dealing with the roll-out of 3G and 4G in Guernsey. The policies of the Island Development Plan (2016) provide a comprehensive and positive basis on which such proposals can be assessed and approved. This includes the requirement that the particular choice of location for the proposed development must be clearly justified and that the proposals represent the best practicable option, taking into account all relevant economic, social and environmental considerations. For small-scale forms of development associated with the provision of infrastructure, there is also a requirement to demonstrate that the sharing or co-location of facilities, buildings, apparatus and support structures is not practically possible. Further planning policy can also be used to ensure appropriate oversight of access to street furniture, government sites or even large structures such as churches. The Planning system is therefore a significant instrument by which the preferred network option can be delivered through application of existing legislation and policy. Some small-scale proposals may be exempt from the need for planning permission or be considered 'de minimus' not amounting to development as defined in the Planning Law. Further policy development can be considered if required, including possible further relaxations to facilitate preferred approaches to development of a single shared network.

#### **5 SoG Infrastructure and Funding**

The States of Guernsey may wish to take a role in the commercial aspects of the future 5G network. The States of Guernsey, primarily through its trading entities, owns a range of transmitter sites, street furniture, buildings, underground ducts and off-island cables. In addition to direct funding, as identified in the Medium Term Financial Plan, these physical assets may be made available at

commercial rates to accelerate the delivery of a 5G network. This may include the purchase of new telecommunications infrastructure subject to a commercial business case being made.

## 5G Testbed

The geography and policy direction of Guernsey makes the Island a potential site for early adoption and providing a testbed for 5G technology. The societal and economic opportunities are potentially considerable but, as with all new technology, are not yet fully understood. Government will therefore be engaging with CICRA and telecommunications operators to encourage the development of a 5G testbed in the Island. The development of a 5G testbed must not interfere with the deployment of a full 5G environment and therefore the two areas will be kept discrete and separate. The critical factor in developing a 5G testbed is a coherent Government telecommunications policy, which this document lays out, and the availability of spectrum. Therefore Government, working with CICRA and OFCOM, will make spectrum available for a limited period to provide a testbed environment. This will be time limited to ensure no spectrum squatting occurs.

In summary the delivery of its third policy objective 'Provision of next generation mobile technology' as soon if not earlier than the UK, it is the view of Government that this will require a new competitive model for telecommunications. This will reduce the competition on network coverage and speed and increase the competition on cost to consumers and customer service. The view of Government is that we need to encourage the appropriate level of investment, and discourage over or under investment, in infrastructure in order to facilitate competition based on service and cost to consumer rather than on network. Further the opportunities related to greater levels of network sharing, a single network or a RAN network reduces the environmental impact of an uncontrolled proliferation of masts. Government has a key role to play in supporting the development of a single or shared 5G network via areas such as planning policy, spectrum allocation, infrastructure and direct investment and will look to do so. Further Government wishes to encourage a 5G testbed by making spectrum available on a limited basis.

# Summary & Recommendations

The policy direction for digital connectivity is to ensure Guernsey is one of the most connected jurisdictions in the world where society, culture and the economy can lever, and maximise, the opportunities of the digital age whilst ensuring we maintain and protect our environment. Government recognises that even with a working competitive market for telecommunications the three objectives may not be met without support from Government to ensure the Telecommunication Companies investment business cases can stack up. That said Government does not wish to unnecessarily interfere with a working competitive market rather its role is to lay out the policy guidelines and vision for the future within which the regulator and telecommunications companies operate.

Specifically, this sector statement recognises that the commercial economic case is unlikely to be made for superfast broadband capability to remote rural areas without supportive intervention from Government. Whilst this sector policy statement does not specifically invoke a Universal Service Obligation (USO) giving everyone the legal right to request a broadband connection, it does place a requirement on CICRA to encourage the market to deliver superfast broadband connections to all residential properties within three years. This will be supported by a Government commitment that in areas where the commercial business case is not economical then CICRA will develop the regulations to enable direct Government support.

Next generation mobile does challenge the way networks and infrastructure have traditionally been built and potentially changes the competitive environment from where operators compete on coverage and speed to one where they compete on price and customer service. The challenge is to ensure the investment decisions deliver the objective of boundless connectivity without either over or under investment in infrastructure. The challenges of transforming the way networks are built and owned should not be underestimated. Operators have made significant investments to realise the networks they have today and may resist. However, Government, and the regulator, have important roles to plan developing, in partnership with the Telecommunication Companies, the most effective and efficient model for either a single network or network sharing that enables the right investment decisions to be made. CICRA will now develop the regulatory framework that encourages innovative options for shared infrastructure deployment and incentivises timely achievement of connectivity goals.

Finally, Government wishes to ensure that Guernsey can provide a testbed for 5G development and CICRA will be working with OFCOM to release spectrum on a trial basis whilst preventing spectrum squatting subject to the Telecommunications Companies developing a compelling business case.



The key recommendations in this Telecommunications Sector Policy Statement are:

- 1 The current competitive telecommunications market will deliver fibre to all business districts with 2-3 years and no Government intervention is required.
- 2 The current competitive telecommunications market is likely to deliver up to 100Mbps high quality superfast broadband to around 85% of the population with 2-3 years. Government support will be required to roll-out superfast broadband to the remaining 15%.
- 3 CICRA will develop the regulations to enable Government direct support where the commercial business case is uneconomic, and the telecommunications companies have made all reasonable steps to meet the 85%.
- 4 Government will support a 5G testbed and will, subject to business cases from telecommunications companies, work with CICRA to release spectrum on a temporary basis for 5G testing.
- 5 Next generation mobile will challenge the traditional investment models and Government will work with CICRA and the Telecommunications companies to develop the most effective network sharing architecture.
- 6 Government will develop a range of support for the early development of the most effective 5G networks sharing model through a range of measures from planning policy, availability of spectrum through to commercial use of States assets and capital investment.

## Reference Material

- ⦿ States of Guernsey Policy and Resources Plan
- ⦿ States of Guernsey Committee for Economic Development – Digital Sector Strategic Framework
- ⦿ Analysis Mason; Guernsey Connectivity Review
- ⦿ The GSMA; The 5G Era: Age of boundless connectivity and intelligent automation
- ⦿ The GSMA; 5G Spectrum, public policy position
- ⦿ The GSMA; Mobile Infrastructure Sharing
- ⦿ ITU; towards “IMT for 2020 and beyond”

# Glossary of Terms

4G	4G or LTE is the fourth generation of mobile phone technology that follows on from the existing 3G and 2G mobile technology. 4G technology builds upon what 3G currently offers but does everything at a much faster speed.
5G	5th generation mobile networks, abbreviated 5G, are the proposed next telecommunications standards beyond the current 4G/IMT-Advanced standards
3GPP	3rd Generation Partnership Project – the global standards body for mobile telecommunication
dVoC	Digital Voice of the Customer – A rating methodology that shows the point at which digital experience quality becomes so poor that the customer will have an unsatisfactory experience using an online service or product. It should be the benchmark that digital providers aim to achieve.
FTTC	Fibre to the Cabinet – Network architecture where the connection from the local exchange to the street cabinet is fibre and the last mile connection from the cabinet to the home is over copper cable
FTTH	Fibre to the Home – Network architecture where the connection from the local exchange to the customer’s premises is fibre.
GSMA	GSM (Groupe Spéciale Mobile) Association – represents mobile operators from around the world
IMT	International Mobile Telecommunication – ITU area focussed on standards framework for mobile communications
IoT	Internet of Things – A system of physical things embedded with sensors, software, electronics and connectivity to allow it to perform better by exchanging information with other connected devices, the operator or the manufacturer.
ITU	The International Telecommunication Union is an agency of the United Nations whose purpose is to coordinate telecommunication operations and services throughout the world
RAN	Radio Access Network
VDSL - VHDSL	Very-high-bit-rate Digital Subscriber Line - technologies providing faster data transmission

# Appendix 1 – Fixed Line & Off Island Connectivity

## Fixed Line Services

Guernsey has two established telecommunication providers for fixed line services – JT (Jersey state owned) and the incumbent provider Sure (originally Guernsey Telecoms pre-2003, now owned by Batelco, <http://www.batelcogroup.com/>).

Both Sure and JT have an extensive network reach in terms of both mobile and fixed (retail and wholesale) telephony. As well as being well-established operators both Sure and JT have the advantages inherent in owning some or all of the fixed line network on Guernsey as well as independent connections back to the UK via Jersey, France and UK.

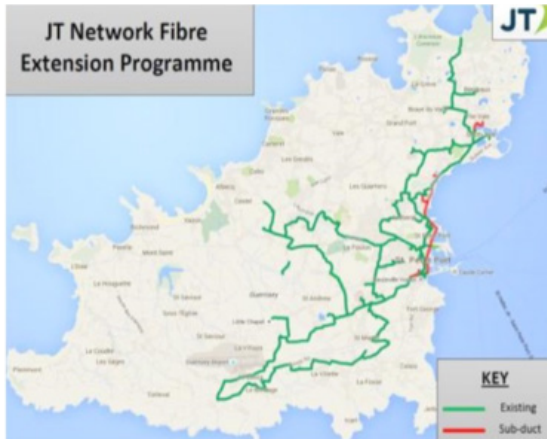
The services that both operators offer and the part they play can be simplified and broken down as follows:

Service	Description	Provider
<b>Consumer fixed line telephone service</b>	Telephone line to the house	Controlled and operated exclusively by Sure
<b>Consumer Broadband</b>	Requires above + internet service to run over the cable	Connectivity owned by Sure.  Others have the ability to run a broadband service over the cable owned by Sure  JT can wholesale as above
<b>Business fixed line service (telephone service)</b>	Telephone line to the business Copper or fibre – selection is dependent on availability and/or customer requirement.	Copper connections owned by Sure. JT wholesale from Sure to provide the service  Fibre - JT can reach some business districts, Sure almost all. JT wholesale where their reach is not available.

<b>Business Broadband – low speed &lt;50Mbps contended 20:1</b>	Requires copper or fibre / dependent on customer requirement and network reach	See above.  JT and Sure can both independently provide a broadband service
<b>Business Broadband – high-speed</b>	Fibre	JT can reach some business districts, Sure almost all. JT wholesale from Sure where their reach is not available.  JT and Sure can independently provide the broadband link for their respective services.
<b>Business connection – Private outside of Guernsey.</b>	To simplify – generally 3 connection points are required: <ul style="list-style-type: none"> <li>• Connect the business to Telco operator via Fibre.</li> <li>• Onward connect the customer from the Telco to an off-island Telco location.</li> <li>• Connect the off-island Telco connection to the final business destination.</li> </ul>	Sure can connect most businesses.  JT reach some and use Sure wholesale to reach those businesses it cannot connect directly.  JT and Sure can independently provide connections.

The table above is a simplified representation, in reality there are more services and the competitive and regulatory interplay is complex. It can therefore become confusing in particular for business customers when selecting where to buy their services from. Not included in the table are the ‘System Integrators’ who purchase wholesale services from the Telco’s, add their own IT services as part of an overall ‘solution’ for business customers. The fixed landscape is complex and challenging to regulate without significant resourcing and funding.

With regards on island fibre – both JT and Sure have extensive networks shown in the diagram below:



JT has made significant investment in fibre infrastructure in Guernsey and the following graphic outlines the extensive fibre rollout over the course of the last number of years.

The network supports the provision of full fibre services to the States of Guernsey high bandwidth sites. It is also used to provide full fibre services directly to businesses and consumers.

Sure the incumbent own 100% of fixed line services to consumer households and has the ability to connect most businesses and Government departments to fibre

Sure has over 400km of fibre in the ground and typically spend in the region of £1m a year extending the reach of this fibre.

## Business districts covered

All schools

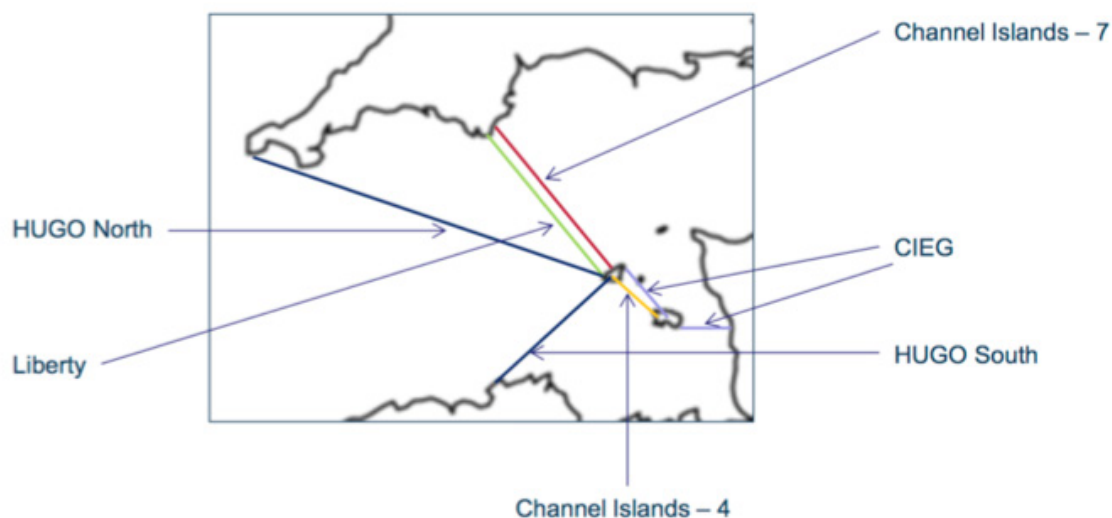
All main Government buildings

Main Business Areas:

- ⦿ Town and Bridge – both have extensive fibre penetration
- ⦿ Admiral Park
- ⦿ Garenne Park
- ⦿ Les Caches
- ⦿ Airport including La Villiaze
- ⦿ Pitronnerie Road trading estate
- ⦿ Lowlands Industrial Estate
- ⦿ Braye Road Industrial Estate
- ⦿ Guilberts Industrial Estate
- ⦿ Guernsey Data Park Site

## Guernsey's off-island telecommunication links

Despite its size, Guernsey is well connected to the UK and France via various fibre networks with enough unused capacity to provide connectivity to a small city.



For further details on how Guernsey is connected to UK, refer to the Analysis Mason report page 13 (see [www.gov.gg/CHttpHandler.ashx?id=102049&p=0](http://www.gov.gg/CHttpHandler.ashx?id=102049&p=0))

Both JT & Sure have multiple links on islands, giving them unmatched connectivity and pricing power, especially compared to new entrants. They are also the only providers for off-island circuits, thus arguably creating a duopoly severely limiting real competition.

CICRA conducted a review of submarine cable regulation and concluded that there was little international precedent on which to base any future regulation. Given this, it would prove difficult to compel operators to open-up capacity.

## Summary

On Island JT has made significant investment in rolling out its own fibre network with a priority to connect business districts, education establishments and Government departments. Sure continues to invest in its extensive local fibre and in maintaining its copper networks with the bulk of recent investment going into improving consumer broadband speeds.

Sure own all domestic fixed line services with JT wholesaling services from Sure to provide their consumer customers with Broadband Services.

Despite the availability of wholesale line rental mandated by CICRA, Sure continues to retain the majority of the local consumer base for line rental. Unlike the UK, Guernsey in common with many other jurisdictions, has not implemented local loop unbundling.

Guernsey has ample off-island connections with enough unused capacity to serve a small City.

While prices for on-island bandwidth are regulated, off-island pricing is unregulated, giving JT and Sure significant pricing leverage as they own/control all the major off-island cables.

With the regulator coordinating wholesale regulations, this has led to inaction because JT and Sure do not agree to common proposals for different costing fundamentals in each island.

The island has ample unused capacity available connecting it to the UK, however, pricing remains a barrier to opening up capacity for Guernsey.

# Appendix 2 – Planning Policy Position Paper – 5G Mobile Telecommunications Infrastructure

This Planning Policy position paper sets out the relevant current planning policies and policy statements within the Strategic Land Use Plan (2011) and the Island Development Plan (2016) which are of particular relevance to the development of 5G Mobile telecommunications infrastructure on Guernsey. Planning Policy will support the development and rapid deployment of the States of Guernsey's preferred option for enhanced network sharing. The policies of the Island Development Plan provide a comprehensive and positive basis on which such proposals can be assessed and approved, without the need for any further legislation or policy development. The paper concludes with further information on other relevant planning matters.

## The Strategic Land Use Plan (2011)

The Strategic Land Use Plan (SLUP) is a statutory document under the terms of the Land Planning and Development (Guernsey) Law, 2005 (Part II, Section 5). The SLUP sets out a 20-year agenda for land use planning in Guernsey and it does this by guiding and directing the Development & Planning Authority in the preparation of detailed land use policies set out within a Development Plan. The Authority must take into account such guidance and directions in preparing the Island Development Plan, which must be certified as consistent with the SLUP. One of the core objectives of the SLUP relates to the maintenance and enhancement of modern key strategic infrastructure.

Of relevance to this topic, the SLUP states as follows:-

### Infrastructure and implementation

Modern infrastructure is vital to the Island and the ability of the planning system to enable its timely provision is an important objective of the SLUP. In the context of the SLUP, infrastructure includes the basic physical structures and large physical networks needed for the functioning of a modern society.

This covers: transportation infrastructure (road network, seaports and lighthouses, airports, etc.), energy infrastructure (importation and distribution of fuel, electrical



power network, etc.), water management infrastructure (drinking water supply, sewage collection and disposal of waste water, etc.), communications infrastructure (fixed and mobile telephone networks, transmission stations, Internet, etc.) and solid waste management.

The SLUP supports:

- making better use of existing infrastructure
- reducing demand through measures such as reducing reliance on the motor car through the development of sustainable communities
- providing additional capacity by extending existing or providing new Infrastructure.

### **SLUP POLICY LP11: INFRASTRUCTURE AND IMPLEMENTATION**

i. The Development Plan will make provision for the development of

Guernsey's infrastructure to meet the social, economic and environmental objectives of the States

ii. The location of strategically essential development should have first priority in existing and new areas of land reclamation

iii. Through policy formulation and other initiatives, the States should investigate opportunities to harness investment to assist in maintaining and developing airport and harbour-related infrastructure

## **The Island Development Plan (2016)**

The Island Development Plan (IDP) is a Development Plan, prepared by the Development & Planning Authority under section 8 of the Land Planning and Development (Guernsey) Law, 2005, which sets out the land planning policies for the whole of Guernsey in a single document. It is consistent with and takes into account strategic guidance set out within the SLUP, approved by the States in November 2011 (Billet d'État XIX).

The IDP sets out the factors that will be taken into account by the Authority under that Plan in reaching decisions on applications for planning permission. In conjunction with the provisions under the Land Planning and Development (Guernsey) Law, 2005, the planning policies of the IDP determine how development proposals should be assessed.

Of relevance to this topic, the IDP states as follows:-

## Infrastructure requirements

**2.2.26.** The SLUP notes that modern infrastructure is vital to the functioning of the Island and it is an important objective of the planning system to be capable of enabling its timely provision.

**2.2.28.** Consistent with the SLUP, the policies of the IDP make provision for new infrastructure while seeking to support and make better use of existing infrastructure to prevent unnecessary provision to the detriment of other objectives of the Island Development Plan.

### **IDP PLAN OBJECTIVE 6: MEET INFRASTRUCTURE REQUIREMENTS**

To achieve the provision of infrastructure where required for the most effective and efficient functioning of the Island, in order to meet the strategic objectives of the States of Guernsey, as set out within the Strategic Land Use Plan.

## Infrastructure Policies

**20.1.1.** The SLUP states that modern infrastructure is vital to the Island and the ability of the planning system to enable its timely provision is an important objective.

**20.1.2.** In the context of the SLUP, infrastructure includes the basic facilities, services and installations needed for the functioning of a community or society, such as transportation and communication systems, water and power lines, and public institutions including schools, post offices and prisons. For the purposes of this part of the IDP infrastructure is taken as the physical structures and large physical networks needed for the functioning of a modern society including: transportation infrastructure (road network, seaports and lighthouses, airports, etc.), energy infrastructure (importation and distribution of fuel, electrical power network, etc.), water management infrastructure (drinking water supply, sewage collection and disposal of waste water, etc.), communications infrastructure (fixed and mobile telephone networks, transmission stations, Internet, etc.) and solid waste management.

**20.1.4.** In the absence of a States-agreed Infrastructure Resource Plan and in accordance with the SLUP, this section of the IDP makes specific provision for new infrastructure while seeking to support and make better use of existing infrastructure to reduce overall demand and safeguarding some areas of land for possible future key infrastructure requirements.

**20.1.5.** Not all infrastructure uses are specifically addressed within this chapter, owing to the fact that certain forms are covered by other policies of the IDP. In some instances, infrastructure requirements may, at some stage in the future, be identified that were not envisaged at the time the IDP was prepared. Consequently, Policy S5: Development of Strategic Importance has been prepared and will override other policies of the IDP in identified and specific circumstances.

## Small-Scale Infrastructure Provision

**20.12.1.** Modern infrastructure is vital to the Island and its timely provision is an important objective of the SLUP which supports making better use of existing, and providing additional capacity by extending existing or providing new, infrastructure. This is reflected in the Plan Objectives of the IDP.

**20.12.2.** Infrastructure includes the basic physical structures and large physical networks needed for the functioning of the Island community. In some instances, infrastructure requirements may be large scale and/or of strategic importance, or requirements may be identified at some stage in the future that were not envisaged at the time this Plan was prepared. Consequently, Policy S5: Development of Strategic Importance has been prepared and is appropriate where development is demonstrated to be essential to the public interest or health or safety or security of the community. For the avoidance of doubt proposals for new telecommunication masts will be considered under Policy S5: Development of Strategic Importance and in relation to such proposals the impacts on public health will be assessed by the Office of Environmental Health and Pollution Regulation against latest standards and guidance. Some forms of infrastructure may affect the operation of the airport and Policy GP17: Public Safety and Hazardous Development and Annex IX: Public Safety Areas are relevant in this respect.

**20.12.3.** There are also small-scale forms of development associated with the provision of infrastructure. Small scale forms of infrastructure development, such as affixing additional telecommunications antennae to existing structures, installation of telecommunications cabinets, the erection of small-scale buildings, electricity substations and other service apparatus will be

supported where this would contribute to the maintenance and support of efficient and sustainable infrastructure and accords with the other relevant policies of the IDP.

**20.12.4.** In order to minimise the impact of small-scale infrastructure and to ensure the best practical use is made of existing buildings and infrastructure, and the most effective and efficient use is made of land, proposals will first be required to demonstrate that the sharing or co-location of facilities, buildings, apparatus and support structures is not practically possible.

#### **IDP POLICY IP11: SMALL-SCALE INFRASTRUCTURE PROVISION**

Proposals for small scale infrastructure development will be supported where this would contribute to the maintenance and support of efficient and sustainable infrastructure and accords with the other relevant policies of the Island Development Plan.

In all cases, the applicant will first be required to demonstrate that the sharing or co-location of facilities, buildings, apparatus and support structures is not practically possible.

## **Development of Strategic Importance**

**3.6.1.** Where a development would address issues concerning the health or safety or well-being or security of the community, or is otherwise clearly in the public interest, the Authority may support proposals that could conflict with the spatial policies or other specific policies of the IDP.

**3.6.2.** However, the Authority will need to be satisfied that the particular choice of location for the proposed development can be clearly justified and that the proposals represent the best practicable option, taking into account all relevant economic, social and environmental considerations. For this reason, a detailed and comprehensive site selection study, together with more technical evidence such as environmental, economic and social assessments, will be expected as part of the submission for planning permission. Measures to mitigate any harmful effects on the environment should be incorporated into any scheme from the outset and it will be expected that opportunities for environmental enhancement will be explored and implemented wherever possible. Development Frameworks may be

required to ensure the most efficient and effective use of the site or area concerned unless the proposed development is such that a Local Planning Brief is required (see below).

**3.6.3.** The IDP does not make provision for proposals that are clearly demonstrated to be essential to the well-being of the Island community but are of such a scale or nature as to have an island-wide social, environmental or economic impact, but were not envisaged at the time the Island Development Plan was prepared. As a result, members of the public were not reasonably able to take such proposals into account when considering the Island Development Plan. This type of development will require a Local Planning Brief. Local Planning Briefs are explained in Annex III: Development Frameworks and Local Planning Briefs. A Local Planning Brief is subject to a very similar procedure as the IDP so the Authority must consult with relevant States' Committees and stakeholders and it will be subject to public consultation, consideration by an independent planning inspector through a public inquiry and final adoption by the States of Guernsey before coming into effect.

#### **IDP POLICY S5: DEVELOPMENT OF STRATEGIC IMPORTANCE**

Proposals for development that is of Strategic Importance and which may conflict with the Spatial Policy or other specific policies of the Island Development Plan but which is clearly demonstrated to be in the interest of the health, or well-being, or safety, or security of the community, or otherwise in the public interest may, exceptionally, be allowed where:

- a.** there is no alternative site available that, based on evidence available to the Authority, is more suitable for the proposed development; and,
- b.** the proposals accord with the Principal Aim and relevant Plan Objectives.

As noted above, the policies of the Island Development Plan, which are consistent with and take into account the strategic guidance set out within the Strategic Land Use Plan, provide a comprehensive and positive basis on which proposals for the development of 5G Mobile telecommunications infrastructure on Guernsey can be assessed and approved.

## Further information

Information is provided below regarding other planning matters likely to be of relevance to the development of 5G Mobile telecommunications infrastructure on Guernsey.

### Planning Exemptions and de minimus work

Class 5 of the Land Planning & Development (Exemptions) Ordinance, 2007 relates to Development by the States and Public Utility Providers. Class 5(4) of the Ordinance provides for “Development in relation to minor equipment by suppliers of electricity and telecommunications services”.

This exempts from the requirement for planning permission any development which:

- a. is carried out by or on behalf of a person who is a licensee under the Telecommunications (Bailiwick of Guernsey) Law, 2001 or the Electricity (Guernsey) Law, 2001, and
- b. is necessary for the maintenance or replacement of overhead lines, cables, surface wiring, block terminals and dish or multiple rod aerials used for the purpose of supplying electricity or providing telecommunications services to the public, provided that any replacement is not significantly different in terms of its siting, design, size and appearance to the equipment that it replaced and that any hard surface which is disturbed by the development is restored with a finish which is not significantly different from the existing finish and in the case of granite cobbles or flags is restored with the same materials.

There is also potential scope for small items of equipment to be considered as de minimus, not amounting to development as defined in the Planning Law. The Planning Service can advise further on this in relation to specific proposals.

### Planning Fees

The current schedule of fees for planning applications is set out in the Land Planning & Development (Fees) (Amendment) Regulations, 2015.

Category 8 of the Regulations provides for fees for Development in relation to mobile telephone masts and antennas.

A planning application fee of £400 is currently charged for an application for the erection, installation or substantial alteration of a mobile telephone antenna, or other telecommunications apparatus which has a similar function, not falling within sub-category A, including -

- a. the erection, installation or substantial alteration of any structure supporting such antenna or apparatus and any associated cabinets, and
- b. any associated works, for each such antenna or apparatus.

A planning application fee of £1,700 is currently charged for an application for the erection, installation or substantial alteration of a mobile telephone mast or other telecommunications apparatus which has a similar function, including -

- a. the erection, installation or substantial alteration of any structure supporting such mast or apparatus and any associated antennas and cabinets, and
- b. any other associated works, for each such mast or apparatus.

## Pre-application enquiries

The Development & Planning Authority actively encourages pre-application discussions, which are conducted free of charge.

A pre-application enquiry form can be downloaded from the States website, link below to form and guidance notes:

<http://www.gov.gg/CHttpHandler.ashx?id=3262&p=0>

## Timescales for application processing

The Planning Service has targets for dealing with planning applications. Our targets for speed of decision making are:

- 80% of planning decisions issued within 8 weeks
- 90% of planning decisions issued within 13 weeks

The Planning Service publishes reviews of performance against these targets on a quarterly basis.

## Further information

A comprehensive range of further information about the planning process can be found under the Planning & Building section of the States of Guernsey Website at [www.gov.gg](http://www.gov.gg).

