



## Consultation Response

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**Consultation:** Report of the Next Generation Broadband Taskforce

**Body:** Department of Communications Energy and Natural Resources

**Official:** Communications Division  
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**Deadline:** June 07<sup>th</sup>, 2012

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## Preamble

The Report of the Next Generation Broadband Taskforce is premised on a requirement to plan and deliver a Next Generation Network to between 15 and 30% of the population of Ireland. However these consumers will find their access to modern communications networks grossly restricted by the cumulative non-investment by telecommunications companies over the course of the coming decade.

As Gandhi once said: "If you worry about yesterday's failures, then today's successes will be few. The future depends on what we do in the present."

Depending on the precise population equivalent to be served the geographic scale of the project is extremely large: It encompasses all the Caltras and Irishtowns and Islandeadys nationwide from where future FG and Labour leaders are commencing their long journeys to Dublin today.

*The LEAST SERVED 30% of the Population Occupies 93% of the state by area.<sup>1</sup>  
The LEAST SERVED 15% of the Population Occupies 69% of the state by area.*

The Taskforce has therefore set itself the task of building a National Network irrespective of whether the objective is to serve 15% or 30% of the un-served population.

In order that any modern technologies are available on a widespread basis, be they any of:

*Fibre to the Home/Kerb,  
Fixed Wireless  
High Speed Mobile Technologies*

a national fibre network must be driven very deep into every nook and cranny of the state and realistically to within 10km to 20km of each and every citizen, without exception.

Unless fibre is driven very close to the consumer and entirely without prejudice to the final mile (or up to 20km) technology solution deployed in a particular area to a particular customer, it will simply not be feasible to deliver the Digital Agenda for Europe requirement that all citizens shall have access to a minimum of 30mbits and that such a minimum is not crippled by contention by the year 2020. IrelandOffline makes some simple proposals that outline how this could be done.

Even in sparsely populated rural areas such a specific objective such as that set by the EU as a minimum requires quasi-universal fibre, Furthermore the network must be designed to serve the existing wholesale and backhaul requirements as well as providing Dark Fibre to every endpoint point as well as Managed Services on a wholesale basis.

It is further required that such a network be constructed without prejudice to market entrants who may not yet exist, hence the overwhelming need to provide dark as well as lit solutions in parallel to every part of the country.

Finally we believe that the network must be designed on a multi centred basis and not on the presumption that every inter-regional connection is to be interconnected in Dublin as has been

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<sup>1</sup> Census 2011 (Small Areas) , 87% by electoral divisions.

the tendency with national networks over the course of the last decade. At least 4 National nodal cores should be designated, these being Cork, Dublin, Letterkenny/Derry and Galway to allow for differential service buildouts and architectures of the future as well as differentiated international links unlike the present cable set which is almost exclusively along the east coast.

In the event that all of these deliverables are not provided for there can be no prospect of new market entrants on a national scale, be they Fixed or Mobile Wireless operators, a hybrid of such, or Fixed Line and Hybrid Plant operations. In that case the DCENR will simply replace a Monopoly with a small cartel and will be forced to revisit the issue again in the near future.

All three national communications schemes since 2004 have been poorly provisioned.

- The MAN program where over half of all MANs are either not connected to anywhere or where MAN fibre is back-hauled across low capacity wireless links. Some are years old.
- The National Broadband scheme that has never been completed properly.
- The current Rural Broadband scheme where end users with latency sensitive requirements are being driven onto unsuitable third world solutions such as satellite links.

None of those technologies are Next Generation. This is our first chance and realistically our last chance to get the architecture right.

We commend that Minister Rabbitte reads this preamble, executive summary and consultation response himself.

**The world is fast moving beyond Ireland, very shortly it will have gone well past us!**

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## **Executive Summary**

### *Taskforce Proposals*

#### **Targets**

The Government has not stated what its own involvement will be - even in outline. There will need to be detail on the scope, network architecture, finances, resources, state ownership and management in the completed plan.

#### **Demand Stimulation**

IrelandOffline welcomes demand stimulation measures but demand stimulation depends on good broadband availability not the other way round. The measures should be delegated to the most appropriate departments. Objectives should be prioritised and funding sources identified.

#### **Infrastructure Barrier Removal**

Mast issues and planning should be addressed by an amendment to the 7th schedule of the Planning and Strategic Development Act (2006) to include major national communications infrastructure in line with the submission of Engineers Ireland - 2003

Roadworks, ducting and way-leaves issues should be centralised in the NRA with a strong direction from the Minister for Transport as was intended in the Communications Regulation Act 2010. We support common standards, visibility, resource sharing and accountability.

#### **Spectrum Policy**

The most urgent issue. A single Radio Access Network (RAN) is unarguably the best solution for Ireland. A halt to the spectrum auctions and a new ministerial policy direction to ComReg on spectrum sharing are required immediately. (see RAN Proposal below)

#### **Assets**

We welcome the use of state assets but the proposals are undeveloped. A more comprehensive long-term solution should see the establishment of a communications assets holding entity alongside a capable MSE.

### *IrelandOffline Comments*

We comment on what is still missing from the plan and what needs to be considered in the eventual plan.

*IrelandOffline Broadband Plan*

**Interim Broadband Plan**

We propose an interim plan using FWA to deliver some of the DAE 2020 targets by 2015

**The Fibre Network**

Fibre is the future of communications in Ireland (and everywhere else). An Open Access National Network with a mixture of Managed and Dark Fibre service solutions must be driven to every part of the country.

This national network should explicitly be no more than 20Km from all citizens in Phase 1 and no more than 10km away in a programmed deepening of this network during phase 2.

**The Radio Network (Mobile)**

We present an outline and recommendations for a Single Radio Access Network ( Single RAN) to address the minimum 87%<sup>2</sup> of the entire country that will have no regulated 4G mobile coverage under the new licences.

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<sup>2</sup> Census 2011 (Electoral Divisions)

## Consultation response

### Targets

#	Taskforce	Response
1	Govt. & Industry to map out forecast and planned NGA expansions and time frames.	<p>Should be fully transparent to all stakeholders, including a fully described service.            Mapping project should include mapping of available SOA ducting.            IoffL cautions against the following:            Change of ownership by map contributors/operators            Non-completion of plans.            Encouragement of mini-geographical monopolies.            Encouragement to collusive behaviour            Deterrence to new-entrants.</p> <p>Mapping should distinguish between current and planned coverage.            Consumer opinion/verification of mapped areas should be sought.            Planned services must guarantee to reach 100% of depicted areas.            EU State Aid NGA mapping criteria should apply.            Planned investment plausibility test should apply.            High resolution of areas required to street level            Mapping task to go to the department or NGO with best GIS function.            CEF mapping support (financial) available.</p>
2	Govt. to invest for 15-30% un-served commercially. Govt. to look at further measures in rural areas subject to State Aid rules.	<p>Actual area should be the result of mapping – above.            Investment should be as IoffL Broadband Plan (below)</p>
3	Govt. to look at targets and incentives for adoption by SMEs and citizens.	Plan must specify targets and funding.
4	Govt. to consider a 2015 target. Min broadband standard to be available regardless of time or location.	The target should relate to the extensiveness of fibre provision. See IoffL Broadband Plan

## Demand Stimulation p 39 – 48

#	Taskforce Suggestion	Response
5	Co-fund (with govt.) awareness campaign esp. to SMEs	OK. Specify funding
6	Training and awareness	OK. Specify funding
7	CMOD(Centre for Management and Organisational Development) - ICT penetration into public administration. Paper due 2012.	A plan for NGA should not be dependent on a plan for ICT penetration.
8	Mandatory use of online services e.g. Revenue.	OK, but problem is not demand inertia, it is broadband supply.
9	Subvention of PC purchase. easy payment method. DSP Telco allowance to be simplified and transferable	Waste of money. Distraction. Remove eircom default. All allowances on application to DSP
10	Civil Service e-working	OK, but constrained by broadband availability. First the infrastructure then the e-working.
11	Broadband for schools.  Comp Science core in Junior. Cert.        Teacher training	OK  Not an NGA objective. More relevant to Department of Education and Skills.  <u>DE&amp;S (suggestions)</u> Computer science is not for everybody. Funding for Coderdojo. Availability of schoolrooms for afterschool activities, computer camps etc. Website construction, e-commerce implementation, database theory and practice OK
12	SME to online stimulation by Enterprise boards, Webactivate, SOLAS	See mandatory revenue CRO, LA
13	Capitalise on Irish entrepreneurship in e-Applications.	Not relevant to NGA.
14	Concentrate on 25-54 age group to create demand and motivate others.	Not relevant to NGA investment. Private sector will invest on ex-ante business case. Demand stimulation will not alter the business case.



*Infrastructure Barrier Removal p 49 – 57*

#	Taskforce Suggestion	Response
	<b>A. Masts</b>	
15	Industry Forum with LAs	Initiated/Organised by whom?
16	LAs to work with Industry in strategic planning	see above
17	LAs councillors and officials to align county development plans with ABP policies.	see loffL plan for Radio Access Network
18	Minimise new sites maximise sharing take advantage of planning exemptions LAs to update exemptions. use public infrastructure (lampposts etc)	see loffL plan for Radio Access Network
19	Fair development levies	OK. Initiated/Organised by whom? see LA Funding – below
20	Delegate all radiation monitoring to ComReg not operators.	OK. Initiated/Organised by whom?
21	Consistent planning rules and charges.	OK. Initiated/Organised by whom?
22	ComReg to plan and notify LAs of future base station deployment.	OK. Initiated/Organised by whom?
23	Planning Guidelines amendment 5 year permission rule to be made permanent Abolish re-instatement bonds. Social benefit of high speed networks to be circularised to LAs Plan for 100% coverage.  Abolish exclusion zones (e.g. Kerry 1km rule)	Permanent permission OK, subject to loffL plan for Radio Access Network. (below)  Single re-instatement bond. OK  OK subject to loffL plan for Radio Access Network (see below) Should be an ABP decision. See loffL plan for Radio Access Network. Amendment to planning Act
24	Industry to submit to consultation on guidelines as follows: Fair development levies No PDCs Plan for 100% coverage No development levies on renewals.	OK subject to loffL plan for Radio Access Network (see below) Single RAN ( with small planning exempt Femto infill) should be planned as universal coverage, largely planning fee exempt and subject to LIFE of licence planning consents (where single RAN is preplanned with local authority or ABP for Universal Coverage)

IrelandOffline response to consultation NGBT report – June 2012

25	<p>LAs to address public concern on masts.                  Design competition for standard mast (15M)                  Communicate to public on health concerns                  Communicate to public on benefits of broadband                  Facilitate road opening when required.</p>	<p>OK                  OK                  Waste of money. (See #8 above)                  OK. This matter is supposed to be within the statutory remit of the NRA currently. Why has there been no progress.</p>
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#	Taskforce Suggestion	Response
	<b>B. Roadworks</b>	
26	Monitoring by NGBT WG on six monthly basis	OK
27	Online application system to LAs	<p>NRA has already been delegated this area of responsibility.                  One stop shop?</p>
28	Fair fees	OK. NRA responsibility.
29	Common technical standards	OK. NRA responsibility.
30	Timely processing	OK. NRA responsibility.
31	Forum for LAs and Telcos on permits.	subject to loffL recommendations on (see below)
32	Visibility & coordination of road opening.	OK. NRA responsibility.
33	Performance stats for LAs on processing of permits.	OK. NRA responsibility.

## Spectrum Policy p 61- 69

	<b>Taskforce Suggestion</b>	<b>Response</b>
34	Indefinite licences to encourage continual investment.	see loffL plan for Radio Access Network (see below p21)
35	Monitor indefinite licences in other countries.	OK
36	Regime on spectrum trading from ComReg by Q2 2012	loffL recommends sharing rather than trading. See #37 below and loffL recommendation for RAN (p21)
37	ComReg & CA to detail spectrum sharing framework	<p>ComReg has set out its view on Spectrum Sharing in document 11/88</p> <p><i>"In relation to calls for ComReg to advance a policy framework for spectrum sharing and pooling and to clarify its position and that of the DCENR on spectrum sharing, ComReg would firstly state that it is clearly a matter for the DCENR to set out its position on spectrum sharing."</i></p> <p>Above indicates that ComReg understand that spectrum sharing is a policy item and within the remit of the Minister and secondly that the Minister should set out his policy on Spectrum sharing. ComReg acknowledged of itself that <i>"ComReg cannot be said to have a firm view on the issue of spectrum rights sharing"</i></p> <p>loffL advises that a sharing solution acceptable to the Regulator is more likely if proposed by the Regulator himself – if necessary on foot of a direction from the Minister.</p> <p>There is little chance in our view that four independent MNOs would agree a structure that fortuitously satisfied both themselves, the Regulator and the Competition Authority without first having a blueprint to start from.</p> <p>See loffL plan for Radio Access Network (below p21)</p>
38	Quicken access to non-harmonised bands.	
39	Update DCENR's spectrum policy paper.	loffL advises that communication between ComReg and DCENR should be clear and formal. The best method is by Statutory Instrument. loffL notes that the relevant Instrument under which ComReg is operating is obsolete. (see loffL recommendation below). DCENR should identify currently operative legislation and directives. DCENR should identify any other documents it believes are relevant to Ministerial direction of the Regulator.
40	Update Wireless Telegraphy Act 1926	OK. To include/exclude what? New WTA required as a rollup Act given the profusion or regulations.

IrelandOffline response to consultation NGBT report – June 2012

41	Continue taskforce dialogue with DCENR on spectrum issues.	loffL disagrees. The effect would be to undermine the Regulator. Undermines #42 below and gives continual preferential access to a select group of mobile operators.
42	Multilateral industry forum with ComReg.	loffL cautions against preferential access. Increased likelihood/intensity of Regulatory Capture. If adopted, balancing consumer access would be required. See EIU recommendations.
43	ComReg to take holistic view to reduce the total cost of ownership of the licence.	see loffL plan for Radio Access Network (below p21)

*State Assets and Entities p 70 – 76*

	<b>Taskforce Suggestion</b>	<b>Response</b>
44	Industry to identify gaps, suggest useful state assets.	loffL warns against ad hoc use of state assets. Questions of rights of use, rights of way, preferential access, health and safety, competence, damage, restitution etc., are more properly dealt with under #45 below.
45	Govt. policy on State assets. Open access, market pricing Transparent and proportionate access. Commercial rates.	OK. subject to loffL Broadband Plan (below p17)
46	Other State assets to be included in Govt. policy paper.	See loffL Broadband Plan. (below p17)
47	SOAs to be subject to normal competition and State aid rules.	Subject to loffL Broadband Plan. (below p17)
48	Legislate to bring assets from other agencies into play.	OK. If required. . Try test transfer first. Subject to loffL Broadband Plan (below p17)
49	Other Regulators mandated to help.	By whom and how
50	Single access point for State Assets.	New corporate entity required. see loffL Broadband Plan (below p17)
51	Standard contract templates to access SOAs. Advice and reporting of progress.	see loffL Broadband Plan (below p17)

## IrelandOffline Comments

### Scope

The plan currently omits any government commitment of any kind. Insofar as the public can have any influence on privately owned operators, there is therefore very little to discuss or contribute or influence in this document.

We do not see any indication of the overall structure of State involvement, or its size, or management or standards.

The plan, not surprisingly, is mostly concerned with inviting/leveraging government funding for demand stimulation or seeking ways of reducing capital and operating expenditures across most of the state. There is no counterbalancing commitment from operators to either reduce their prices or deliver better or more extensive services. We therefore suggest a list of elements that will need to be included in the forthcoming National Broadband Plan and we would ask some questions.

### Design and Mapping

Has any work been done on designing at least the architecture, if not the scale, of an overall solution.

Who has who done this work?

We note that the EU guidelines for government interventions require that State Aid “show a clear preference for so-called ‘multi-fibre’ deployments, the latter being the most likely to ensure long-term effective and sustainable competition”<sup>3</sup>

We note that eircom’s current NGA (FTTH) plans are PON based.

We note also that ADSL2+ are not admitted as viable NGA deployments due to the lack of headroom

### Investment

The Taskforce document does not identify the size of government investment. More particularly the Taskforce does not identify any new rollout plans beyond the previously announced plans of the Taskforce participants.

### Crowding Out

The announcement of a ‘plan’ or even a ‘plan about a plan’ by a Government is often enough to put potential private investment on hold. The government should determine in outline at least the extent of its proposed intervention *in geographic terms*, an idea of the technical solution and the amount of EU and exchequer money that it needs. A sober estimate of the completion date will also be required. This will enable communities with progressive ideas to move on at a faster pace, if they wish, without fear of duplicating or competing with a State aided intervention.

Recent examples in that regard have been the National Broadband Scheme, which was mooted publicly in June 2006 but not finished until October 2010, and the Rural Broadband Scheme that was proposed in mid-2009 and arguably still has not started. In all, a period of six years in which DCENR was promising much. It is difficult to say how much alternative private investment would have occurred otherwise.

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<sup>3</sup> [http://ec.europa.eu/competition/publications/cpn/2009\\_3\\_3.pdf](http://ec.europa.eu/competition/publications/cpn/2009_3_3.pdf)

### **European Funding**

The Taskforce report has not indicated what types of European Funding are available. The Taskforce members, principally the fixed line operators, we suppose, will be required to submit project plans. Have they been asked to develop plans either for State Aided projects or for CEF co-funded projects?

When will CEF funding be available?

What are the conditions attached?

Can other funding that can be accessed and when e.g. Cohesion Funding or EIB investment?

### **Ownership**

In order to avoid the presence of State Aid, the guidelines require risk equalization. It seems unlikely that any ex-ante business case could be made for NGA deployment in rural areas and so State equity participation in joint ventures would seem to be irrelevant. It would equally seem hazardous to entrust an SGEI to a failed business such as Eircom in the absence of regulatory control of both its ownership or capital structure. Therefore, the State will either have to own assets in perpetuity or build assets and then sell them at a market rate.

### **Entity**

The corporate entity by which State Investment might be made has not been described. In our view no acquisition or creation of either State, or State agency assets, or rights of way can be initiated without the creation of a credible vehicle for public ownership of broadband assets. It appears that CEF funding, if accessed, will be project based. In anticipation of more than one project with more than one partner, the entity as described should be flexible enough to allow for multiple projects to be subsumed into a common administrative structure.

The entity is necessarily made more complicated if a pick and mix strategy is adopted in relation to projects and partners. IrelandOffline prefers a more comprehensive approach outlined below. DCENR should already be considering, or seeking expert advice on, a suitable corporate entity.

### **Assets**

While classes and sources of assets are mentioned in the Taskforce document, no actual assets appear have been identified. IoffL is concerned that the identification of suitable assets and their transfer to a suitable entity OR their being shared in transparent way above may prove be the most troublesome aspect of the plan. IoffL recommends some assets (fibre/towers) should be transferred on a test basis now in order to iron out any bureaucratic hurdles that might arise. We further recommend that access to those assets for foreseeable needs should be tested.

The Taskforce members have not indicated which amongst their assets they would be prepared to submit to an NGA project (at fair value).

### **Managed Service Entity**

An MSE will probably be required to take control of and run assets held by the State either solely or in partnership. Is there more than one candidate? If so, how long will the tendering process for an MSE take? If not, will that candidate have the necessary capacity and expertise to manage a diverse system.

## Regulation

In recent documents<sup>4</sup>, the regulator has indicated that his remit, in terms of mobile data coverage, extends to somewhere between 13% and 60% of the national area. The rest he believes is the responsibility of government. This ties in with the upper limit of the Taskforce estimate i.e. that 30% of population (or 87% of land area) would be excluded in the case of all purely commercial NGA deployments, both fixed and wireless.

The regulator has further proposed that no universal broadband obligation should obtain in the case of fixed line connections. (at least until 2014)

This poses a problem in relation to State intervention. The Commission guidelines require that, in the first instance, regulatory solutions should have been shown to be ineffective before State Aid would be approved. In our view it is unlikely that the Commission could conclude that ComReg's 70% population coverage obligation was sufficiently high to meet that criterion. It seems likely that further time would be wasted in requiring the regulator to make a fresh attempt to extend coverage obligations by regulatory means before State Aid could be seen as an acceptable solution. Deployment of NGA to 'grey' or even 'white areas' could thus be delayed

The current solution proposed by the regulator in the mobile bands precludes spectrum sharing or fixed wireless<sup>5</sup>. We deal with these particular items in more depth later, but our view, in short, is that if wireless is considered capable of supporting NGA, then the regulator has chosen a highly ineffective way of facilitating it. The EU may refuse State Aid and CEF funding on the basis that the regulator is not availing of reasonable options to extend wireless reach. The regulator's unwillingness to use any of the digital dividend (800 MHz) to extend services "beyond the territory/population expected to be covered by the market."<sup>6</sup> might be seen as a further complicating factor.

The implications of the regulatory remit being so narrowly defined (above) mean that each new advance in technology will require repeated government intervention in the un-served and unregulated areas. The resourcing of DCENR to cope with this episodic demand for engineering input will mean alternately too many or too few engineers in the Communications Section of the department

## Scalability

The plan should be sufficiently flexible both in architecture, funding, ownership, and management that it can be extended where necessary and without delay.

## Targets and Progress

We are concerned that having developed a plan that the necessary leadership will be in place to ensure its delivery. We would like to know, who is in charge of this project; are they competent; will there be measureable milestones for the project.

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<sup>4</sup> "DotEcon notes that not spot' obligations have generally been used to address this issue and the RBS and NBS in Ireland can be considered as tackling the availability of broadband to all households in Ireland."

<http://www.comreg.ie/fileupload/publications/ComReg1225.pdf> p186

<sup>5</sup> For reasons due to installation costs fixed wireless providers are unlikely to obtain any sub 1GHz spectrum.

<sup>6</sup> COMMISSION STAFF WORKING DOCUMENT ON THE IMPLEMENTATION OF NATIONAL BROADBAND PLANS (SWD(2012) 68 final/2) [http://ec.europa.eu/information\\_society/newsroom/cf/document.cfm?action=display&doc\\_id=914](http://ec.europa.eu/information_society/newsroom/cf/document.cfm?action=display&doc_id=914)

### **Accountability**

Are there penalties for failure to deliver this project, Are they credible? On whom do they fall and what guarantees are there that they will be enforced.

### **Transparency**

loffL advises that progress reports on the implementation of the plan be made public in candid un-redacted form.

We recommend that contracts issuing, as a result of the plan, be made public.

We also advise that all mapping as a result of the Taskforce document or as part of the National Broadband Plan be made fully amenable to public query and also to correction on foot of credible information from the public.

### **Resources**

We are concerned that the creation of a separate Regulator's office and the reduced public sector budget has hollowed out the engineering function and general resources within the Department. We note also that Ireland takes on the role of EU presidency in January 2013. We are therefore unconvinced that there will be sufficient capacity or focus within the DCENR to deliver a credible National Broadband Plan before the end of the year.



## Ireland Offline Broadband Plan

### *Interim Broadband Plan*<sup>7</sup>

#### **Overview**

The proposal provides for planned integration of Fixed Line and Wireless to provide services capable of meeting a mid term objective by 2015 without prejudicing DAE 2020 targets. The plan focuses on optimizing available infrastructure and spectrum and makes pragmatic choices. It acknowledges that our split demographic militates against a wholly market type solution, and outlines an asset holding and management structure.

#### **State Holding Structure UBN (Universal Broadband Network)**

We propose a Private Public Partnership. While some companies can optionally join and share resources, other resource contributions will be mandatory but will lead to ongoing profit. While there are many operational models with different levels of Government ownership, we feel that a UBN will largely be funded and owned by the exchequer no matter who operates it.

#### **Resources**

1. Point-to-point Microwave Links to connect Subscribers, MANs, Nodes and Back-haul
2. Point-to-Multipoint Microwave
3. Fixed Wireless (FWALA)
4. Masts for (1) to (3)
5. Back-haul Fibre to Dublin
6. MANs (once connected to (5) )
7. Fibre from Backhaul, MAN, Microwave etc to Cabinet/Node
8. Street Cabinets with copper pairs to Premises, optionally Fibre
9. Poles for Fibre or Copper to cabinets or Subscribers
10. Ducts for Back-haul, fibre to Cabinet/Node and Fibre/Copper to Subscriber.

#### **MSE**

A managed service entity OpCO will be set up, or tendered, to control the resources and offer the infrastructure at wholesale rates. Existing owners of the above assets can rent them to the Universal Broadband Network (UBN) but rent will be fixed at the cheapest European EU rate for that resource for 10 years. Alternatively, the individual resource owners can transfer those resources to the UBN in exchange for shares. The valuation will be the average EU valuation for that resource as arbitrated by an independent arbitrator (Canadian, Korean, Australian or American company with no EU connection and no connection to any involved company) and no right of appeal.

#### **Effects on current Market**

- Mobile Operators will lose some voice users and current residential data users.

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<sup>7</sup> The following takes some high level elements from a more detailed plan which identifies market effects, appropriate use of technology, technical performance of platforms, theoretical limits, architecture, equipment and TV interface.

- LTE will only be economic to roll out in Urban/Suburban areas as a competitor to Public Wi-Fi. This may be true anyway, even if UBN didn't exist. In Rural areas a single RAN (see below p21) will be the only viable option.
- Satellite providers will lose most of their VSAT customers. Satellite Internet will drop to a handful of customers instead of over 1000.
- The incumbent fixed line provider will most likely lose considerable wholesale business.
- The human cost in redundancies will be high, but the MSE will most likely employ a good many fixed line staff.
- Existing Fixed Wireless will have to undertake extensive reconfiguration. Some services will close

### Technical Implementation

1. **Urban**  
Minimum 100Mbps, Cap 1000Gbyte. Premium 1Gbps or more easily available
2. **Suburban:**  
Minimum: 20Mbps, Typical 50Mbps. Cap 1000Gbyte Premium 200Mbps to 1Gbps
3. **Rural – Suburban:**  
Minimum: 20Mbps Typical: 25Mbps. Cap 250Gbyte Premium get 100Mbps
4. **Rural:**  
Minimum: 20Mbps/2Mbps Typical: 25Mbps, some up to 100Mbps. Cap 250Gbyte
5. **Extreme Rural:**  
20Mbps/2Mbps at 10:1 Contention. Roof top Fixed Wireless. Cap 250Gbyte

### Connection Scenarios

1. **Single user 3km from the Node/Cabinet with Line of Sight (LOS).**  
A pair of small dishes and 5.8GHz Licence free Wi-Fi Link using optimized timing 802.11 radios/Airpoints in "Bridge Mode" The cabinet end is driven by VDSL2 modem and on a pole, mast or building up to 1.5km from the Cabinet/Fibre node. The Wireless link can be up to 7.5km.
2. **Single user too far from Cabinet but with Line of Sight.**  
Cambridge or similar Microwave Point to Point Link. ComReg licence fee of €1,200 p.a. to be waived).
3. **Less than 10 scattered users between 1.6km and 10km from the Fibre Node.**  
Suitable Fixed Wimax is provisioned. Typically using FWALA 3.5GHz
4. **Over 250 users with Line of Sight view of highpoint.**  
Some are 1km to 12km, some 10km to 25km. DOCSIS 3.0 using 14 x 8MHz channels in 10.5GHz band. (ComReg FWALA 10.5 channels A, B, C, D)

5. **Almost 300 Users from 0.5km to 45km from Fibre Node.**

UHF 120MHz + 96MHz DOCSIS 3.0 (15 channels). The total capacity is about 570Mbps (cf peak capacity 21Mbps HSPA, or 0.12Mbps cell edge) to cell edge. TV type Yagi aerial is used. Perfect LOS is not required. At 10:1 contention we have 5700, thus at 20Mbps per subscriber package is 285 Subscribers.

6. **About 50 houses spread on a single 10km stretch of road, more than 1km from the Fibre Node. Trees or terrain make Wireless difficult.**

These can be supplied from a single coaxial cable running DOCSIS 3.0 Protocol with up to 200Mbps minimum 10:1 contention. Cable can be run on ESB or Eircom poles if duct is not available. Termination and Modems are much cheaper and faster than Fibre.

*The Fibre Network*

Fibre is the future of communications in Ireland (and everywhere else). An Open Access National Network with a mixture of Managed and Dark Fibre service solutions must be driven to every part of the country.

This national network should explicitly be no more than 20Km from all citizens in Phase 1 and no more than 10km away in a programmed deepening of this network during phase 2.

Phase 1 will be sufficient to connect EVERY MAN network to the National Network and to provide adequate backhaul for e.g. 800/900Mhz LTE and for Fixed Wireless operations. Absent the completion of Phase 1 by 2015 we envisage large scale shutdowns of Rural 2G GSM Mobile assets as the 2G equipment life expires.

Phase 2 will occur post 2015 up to 2020 and will deal with localised capacity constraints as well as providing a 'MAN IN A BOX' collocation for infill cellular and for Last Mile Access solutions.

IrelandOffline does not believe that it is economically feasible to drive High Frequency Mobile Solutions any closer to Universal, e.g. 2100mhz 3G and 2600mhz LTE but we are satisfied that 10km-20km radius solutions at lower frequencies are of some use.

However PON / P2P Fibre and P2P an FWA Wireless can deliver last mile solutions to a standard which is compliant with the EU Digital Agenda for 2020 while Mobile delivers fractional bandwidth when one is out of building.

Phasing in this way provides certainty for all market operators, new and existing, across the 90% of the Geographic area of the State occupied by the 30% of the population for whom this plan is supposedly designed.

We expect that market solutions will largely take care of the largely urbanised 10% of the state occupied by 70% of the population who are beyond the remit of this Taskforce but would counsel that the imperative that drove the Rural Broadband scheme, unserved spots close to towns, will still remain.

The eircom VDSL project does not extend into the rural hinterlands of the exchanges they are upgrading. However this is a last mile issue in served areas not strictly a National Network issue and can be resolved with a universal fibre fund accessible to local authorities and communities located around these larger towns and cities or by fibre access network extensions conducted by the likes of UPC and/or eircom in conjunction with those communities. Radio Access Network (Mobile)

### *The Radio Network (Mobile)*

A single Radio Access Network (RAN) would hold infrastructure assets (masts and antennae) and a spectrum licence. The entity would be owned by the MNOs and would be pre-proofed for acceptability to market regulators. It would be a regulated SMP. All current MNOs would become MVNOs and would contract wholesale services from the RAN, much as Tesco mobile and an Post do with the current MNOs.

The RAN can cover the entire or part of the national area subject to agreement between current MNOs and the Regulator, who may regulate its ownership and capital structure.

IrelandOffline believes the balance of advantage is unarguably in favour of a single RAN. We note the gap in understanding between the Department and the Regulator as to whose responsibility it is to start this process. We outline some of the necessary steps below.

#### **Benefits**

Mast topology planned to achieve near 100% area coverage for data and voice.

Reduced capex and opex for operators.

Improved spectrum efficiency.

Lower prices consequent on lower operator costs.

Higher average download speeds because of reduced spectrum redundancy.

Better network performance due to technical effects of a large spectrum block.

Increased licence fee income to the State<sup>8</sup>.

Competition unaffected at retail level.

#### **Issues**

Loss of income for Local Authorities because of reduced mast population.

New ground for the regulator in developing a blueprint for the RAN.

Abandonment of auction process.

Expiration of existing 900 MHz licences

Stranded assets.

Different accounting treatments amongst MNOs of network sunken costs.

#### **Blockages identified**

Regulators current assessment of its statutory obligations.

Regulator's assessment of its territorial remit.

Regulatory inertia.

Lack of specific Ministerial Policy direction in relation to Spectrum sharing.

Opposition from Local Authorities due to loss of income.

Establishing a correct price for a single licence.

#### **Necessary Steps**

Minister to issue new policy direction specific to spectrum sharing.

Regulator to cancel spectrum auctions

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<sup>8</sup> <http://irelandoffline.org/2012/05/comreg-will-cost-the-exchequer-e300m-in-2012-by-design/>

Regulator to prepare further temporary licences in 900MHz band (with incentive to move to RAN)

Regulator and Competition Authority to formulate suitable corporate entity for RAN

Regulator to investigate wholesale market on lower costs basis to establish value of a single licence.

Arbitrator to adjudicate on existing network assets.

MNOs to agree RAN structure and access conditions with Regulator.

Issue tender to MSE to operate RAN

Amendment to Planning and Development (Strategic Infrastructure) Act 2006 to include communications infrastructure in line with submission from Engineers Ireland (2003).

Public information campaign.