# **APPENDIX 1**

# **Event Evaluation**

# "Enchanted Garden"

# Maghera Walled Garden Event Saturday 26 August 2017



### Background

The two acre Victorian Walled Garden in Maghera was restored in 2015, and is a key attraction in the district. Mid Ulster Town Centre Action Plan identifies as one of its key themes that a number of key events will be developed and delivered to add vitality and vibrancy to the five town centres.

The aim of the "Enchanted Garden" event was to promote the Walled Garden by delivering a signature event to showcase the attractiveness of the facility. It was envisaged that the event would attract over 3,000 (local and national) visitors to the area and increase footfall to Maghera town centre.

# **Event Overview**

A number of activities took place during the event:

- Create your own Fairy or Elf Garden
- Fairy Wand & Elf Hat Making
- Fairy & Elf House Trail
- Fairy Door Making
- Gormely the Troll Show
- Storytelling with Strawberry the Summer fairy
- Face Painting
- Balloon Modellers
- Glitter Tattooist
- Giant Games
- Garden Games
- Classical Music
- Food stalls
- A park and ride facility operated from the High School site





# Attendance

The event attracted a total of 3,675 people which exceeded the target of 3,000.

50% of people attending the event were from Maghera and 50% were from other areas as follows:

- Magherafelt (15%)
- Swatragh, Tobermore and Dungannon (15% each)
- Other areas outside Mid Ulster District (20% Bangor, Derry)

# Budget

The total cost of the event was £13,795.93

This was broken down as follows:

Marketing	£3,777.13
Entertainment	£6,245
Operational Costs	£3,773.80

## **Marketing & Promotion**

Promotion of the Enchanted Garden event at Maghera Walled Garden event on social media commenced on the 1<sup>st</sup> August 2017. The channels used were Facebook- Visit Magherafelt page and Twitter - MidUlster\_DC.

On Facebook, between 1<sup>st</sup> August and 29<sup>th</sup> August a total of 23 posts (including 3 videos) were added to the Visit Magherafelt Facebook page (4 pre-event, 18 during the 4 hours and 1 post-event) which resulted in a \*reach of 123,905, engagement of 9,127 and 823 video views.

On Twitter, between the same dates (1<sup>st</sup>-29<sup>th</sup> August), 20 posts (including 3 videos) were added to the Mid Ulster Council Twitter page (3 pre-event, 16 during the 4 hours and 1 post-event) which resulted in a total of 19,830 \*impressions, engagement of 613 and 322 views.

This clearly illustrates that the platform that worked best for promoting the event was Facebook.

As well as promotion on social media, a total of 4 news releases were issued to the press- 3 pre-event and one post-event.

Artwork was also designed- flyers, billboards, adshels were produced and ads designed for newspapers and the event was added to the homepage of the Council's website and the URL /enchantedgarden was setup.

\*reach- Facebook reach is the number of unique people who saw your content.

\*impressions- the number of times a tweet has been delivered to the Twitter stream of a particular account.

Some of the Facebook comments following the event can be seen below:

## Feedback

A Survey Monkey questionnaire was developed and shared on the Visit Magherafelt facebook page immediately after the event (Appendix 1)

Feedback from the event was very positive as can be seen from the responses highlighted below.



## How would you rate the atmosphere at our event?

## How would you rate the Entertainment provided?





How did you hear about the Event?

# What did you enjoy most about the event?



There were a number of comments regarding the queuing for activities. With the large number of children attending the event the demand for workshops was high and therefore queuing was an issue.

The Park and Ride Facility received some comments regarding the time for waiting for the bus. Unfortunately it was not possible to source an additional bus on the day.

## **Recommendations for future event**

Should the event be delivered again the following recommendations have been submitted through the evaluation process:

- Activities for large groups to replace a number of workshops. This will restrict the queuing times for workshops.
- Park & Ride Facility increase the size/buses for the Park and Ride Facility
- Leaflets to be produced detailing the activities taking place and the location of each

## Conclusion

This event was received very positively by the people who attended and the local businesses in the town. The event met the objectives as set out in the Mid Ulster Town Centre Action Plan of animating public and shared spaces in the town centre, enhancing the overall visitor experience and increasing civic pride.





# Appendix 1

# Evaluation Enchanted Garden Event Saturday 26 August 2017

- 1. How would you rate the atmosphere at our event?
  - Excellent
  - $\circ$  Good
  - $\circ$  Average
  - o Poor
  - o Don't Know
- 2. How would you rate the entertainment provided?
  - Excellent
  - o Good
  - Average
  - o Poor
  - o Don't Know
- 3. What other entertainment or activities do you feel would enhance this event?
- 4. How did you hear about the event?
  - o Excellent
  - $\circ$  Good
  - Average
  - o **Poor**
  - Don't Know
- 5. Where did you travel from to attend today?
- 6. What did you enjoy most about the event?
  - Children's Workshops
  - Food Stalls
  - o Games
  - Shows / Storytelling
  - $\circ$  Music
  - Other (please specify)

## Mid Ulster Business Breakfast Digital Seminars 2017

#### Seminar 1: Achieving Online Growth Through Your Website

#### Date: Wednesday 4 October 2017 Time: 8:00am - 10:15am Venue: The Burnavon Theatre, Cookstown

This seminar will advise how to drive more relevant traffic to your website and convert that traffic into new customers and enquiries. The 2 workshop sessions will explore the fundamentals of **Search Engine Optimisation** and the **Essential Elements of an Effective Website**.

2 leading digital experts, (Barry Adams, Digital Polemic Digital Robert McKnight, eCommerce and Digital Marketing specialist) will share their knowledge, experience and answer your questions during a 40 minute panel discussion. After the discussion, you will have the choice of attending one of the practical hands on workshops that are focused on providing actionable advice and guidance.

Clara Maybin, Digital Marketing Executive for successful Mid Ulster company, BA Components, will share their digital success story and provide insights into how to achieve growth online.

### Seminar 2: Achieving Online Growth Through Advertising

#### Date: Wednesday 25 October 2017 Time: 8:00am - 10:15am Venue: Ranfurly House, Dungannon

This seminar will show how to use tried and tested digital advertising techniques that generate more sales, more leads, more engagement and will contribute to a successful digital approach. The 2 workshop sessions will provide a step by step guide to **Google AdWords** and **Facebook Advertising** focused on generating real commercial results for your business.

Niamh Taylor and Emma Gribben will share their knowledge, experience and answer your questions during a 40 minute panel discussion. After the discussion, you will have the choice of attending one of the practical hands on workshops that are focused on providing actionable advice and guidance.

A local company will also be on hand to share their digital success story and provide insights into what is required to achieve growth online.

#### Seminar 3: Achieving Online Growth Through Content Marketing

Date: Wednesday 22 November 2017 Time: 8:00am - 10:15am Venue: Council Offices, Magherafelt

#### **Content Marketing**

This seminar will show how to create content that connects with your customers in a meaningful way along their path to purchase. The two workshop sessions will demonstrate how to create personalised video content for Facebook that will boost local awareness and generate sales and provide a step by step guide on creating a content marketing strategy.

Peter McNicholl and Kathryn Pyper will share their knowledge, experience and answer your questions during a 40 minute panel discussion. After the discussion, you will have the choice of attending one of the practical hands on workshops that are focused on providing actionable advice and guidance.

Local company "Find Your Body with Pete" will also be on hand to share their digital success story and provide insights into what is required to achieve growth online.

## **APPENDIX 3 – LETTER FROM CRAIC THEATRE**

### **RE CHRISTMAS LIGHTS SWITCH ON, COALISLAND**



# Amharclann & Ionad Ealaíona CRAIC

27th September 2017

TO WHOM IT MAY CONCERN

Over the past 10 years, CRAIC Theatre have co-ordinated and delivered the annual Christmas Switch On for Coalisland. This annual event marks the start of the festive season and brings the community together.

The community of Coalisland and the surrounding area look forward to this event each year and we request the continued financial support of £4,200 from Mid Ulster District Council to deliver this event for Christmas 2017.

We look forward to working with the council this year again. If you have any further queries please do not hesitate to our offices on 028 8774 1100.

Yours sincerely

m Micky Carolan

CRAIC Theatre

#### Telephone/Fon: 028 8774 1100



Coalisland Enterprise Centre - Dungannon Road - Coalisland - Co. Tyrone - BT71 4HP - Northern Ireland Ionad Floritratochta - Böthar Dhün Geannain - Oileán an Ghuail - Co. Thir Eoghain - B171 4HP www.craicartscentre.co.uk - Email/Rphost: craicartscentre@vahoo.com



Property (set) Descent of

# APPENDIX 4 – LETTER FROM MAGHERA TRADERS ASSOCIAITON RE MAGHERA CHRISTMAS LIGHTS SWITCH ON

From: Gary Burns <<u>gary@burnshomes.co.uk</u>> Date: 26 September 2017 at 18:23:12 BST To: Davina McCartney <<u>Davina.McCartney@midulstercouncil.org</u>> Subject: Maghera Christmas Switch On/Winter Wonderland

Hi Davina – on behalf of Maghera Traders Association, we would be delighted if the Mid Ulster Council would be able to help provide support, both financially and practically for the upcoming 2017 Maghera Christmas Festival that is held annually within the town.

Regards,

Gary Burns Director

Burns & Co 61 Main Street Maghera BT46 5AB

telephone:+44 (0) 28796 42271eMail:gary@burnshomes.co.ukweb:www.burnshomes.co.ukfacebook:www.facebook.com/burnsandcoestateagents





# **APPENDIX 5 - DIGITAL CATAPULT ULSTER PROPOSAL**

#### SECTION D – TECHNICAL PROPOSAL

See Section 11 for evaluation criteria with which this relates.

The boxes set out below may be resized as required. Any attached material must be clearly referenced in the question and the attachment clearly labelled with the question number.

D1	Meeting the Requirements				
Confirmation as detailed in Please note t the space bel	and brief evidence that your organisation can meet all the requirements Section 3 of this RFP. hat a response of 'no' may result in your RFP being rejected. Please use ow to explain the solution will satisfy the requirements stated.	Pass/Fail (500 words max.)			
RESPONSE TO	D D1				
We have dev also Computi Northern Irel businesses w We are certa	eloped a consortium (led by Ulster University) consisting of both the Schoo ng and Mathematics at Ulster University (UU), InvestNI (INI), the majority c and, Tourism Northern Ireland (TourismNI), and a significant number of No ith various Digital/IoT needs and interests; this is therefore a bid on behalf in the consortium will meet all the requirements as detailed in Section 3.	ls of Engineering and of local councils in rthern Ireland of Northern Ireland.			
We believe w level. These a	ve are ideally positioned at this time to deliver every requirement of the cal are specifically;	l to an excellent			
• Impleme This will be d	ent and operate a free-to-use regional LPWAN network lelivered and managed throughout by Ulster University.				
• Support, This will be c tailored large	& maintain the Things Connected network & LoRa Gateways hampioned by Ulster University in conjunction with the Councils who will r e-scale challenges.	un a number of			
• Build and support an ecosystem across industry and academia Ulster University, InvestNI, the councils, TourismNI, and a cluster of local IoT forum groups (IoT Alliance, TechTalk Coleraine, and IoT-Belfast) will nurture and significantly extend the innovation ecosystem in Northern Ireland by supporting SMEs to innovate, experiment and prototype new products and services to market. UU will develop training/engagement programmes for SMEs interested in developing and trialling technical solutions on the network.					
• Bring lar, UU will coord the network. challenge fur	• Bring large-scale challenges with the potential for commercialisation to the programme. UU will coordinate the development of a technical infrastructure and technical knowledge to make use of the network. The Councils will define and create opportunities to explore the capability through the sizable challenge funds.				
1. Touri to ex	ismNI will launch a competition challenge fund of <b>£35, 000</b> to understand to plore tourist movement, creative technologies, increased tourist spend, etc	echnology use cases			



- The local Councils commit to fund and coordinate challenge funds (£10,000 per Council with Belfast City Council giving £30,000) to launch scalable trials and explorations to address challenges in the following areas;
  - Health (Core challenge)
  - Manufacturing (Core challenge)
  - Creative Technologies (Core challenge)
  - Agriculture/ Food Manufacture
  - Tourism
  - Waste Management
  - Transportation Delivery and Planning
  - Monetarisation of Data

These Council and TourismNI funds will be launched by the Councils/TourismNI to reflect local interests and demands against the key regional challenge calls. This removes governance and funding transfer issues from the coordinator (UU) to better enable area-specific innovation.

• Identify and recruit SME cohorts to address the challenges and experiment with solutions.

Ongoing work at the University, InvestNI, within the councils, and the IoT forum parties have ensured there is a sizable engaged SME community; our vision is to expand and develop this further to reach other sectors and accelerate development and growth. The ecosystem for Industry will be developed from the following areas with the support of InvestNI and relevant industry cluster leads;

- IoT Alliance (~30 companies)/TechTalk Coleraine (70+ members)/IoT-Belfast (50+ members)
- TourismNI
- > CHIC and wider health technology (~10+ interested companies)
- > NIACE and wider advanced engineering (~5 interested companies)
- > CASE and wider sustainable energy (~5 interested companies)
- Council Enterprise Agencies
- > Other SMEs keen to engage based on current regional publicity and outreach activities

#### • Run regular meet-ups for local businesses and develop the local LPWAN community.

Northern Ireland has a vibrant community of SMEs, investors, academics, and policy makers who meet quarterly (through the 3 IoT forums) as part of a healthy innovation ecosystem; this LPWAN Digital Catapult activity would accelerate development of these networks considerably, widen participation, and enable new products, services, partnerships and creative solutions.

#### • Provide first line technical support to network users

Technical support will be provided by UU directly through University staff, UU will also establish a working group within the councils and advisory SMEs to rapidly and effectively address all arising issues. The regular meetups will also provide a platform to supports users/potential users. Use of social media, an online user forum, and an online FAQ/trouble-shooting guide (all created by UU) will further provide rapid technical support.



D2		Delivery (Team and Plan)	
Please project Section	descrit experi 1 3.	be the project team and the consortium, provide evidence of relevant ience and the plan for delivering against the requirements outlined in	
1)	Confir with (	rm that the consortium and its members are in at least neutral standing Dfcom.	
2)	List ar inclus toget	nd briefly describe each member of the consortium, the reason for their ion and relevant experience, especially any evidence of working her on past projects of a similar nature.	
3)	List ar their i any ev	nd briefly describe each member of the project team, the reason for inclusion, their relevant skills/qualifications and experience, especially vidence of working together on past projects of a similar nature.	
4)	Outlin Please	ne one case study of an innovation programme you have run in the past. e include contact details for the organisations for the Catapult to contact	Marked / 10
5)	If you please	have similar experience of implementing and managing networks, e provide a case study. Please include contact details for the isations for the Catapult to contact for a reference	Weighting: ×2 (1000 words max.)
6)	Provic a. b. c. d. e. Your r timeta	<ul> <li>de an overall plan for how you will deliver your proposal, including:</li> <li>Confirmation you are able to meet the timescales in Section 6; or, if you feel that you are unable to meet the proposed dates, or have an alternative proposal, please provide details.</li> <li>Key milestones;</li> <li>Key assumptions and dependencies;</li> <li>Key opportunities and risks;</li> <li>Potential barriers</li> <li>response should include a brief summary graphical representation of the able (not included in the word count).</li> </ul>	

## **RESPONSE TO D2**

1). We confirm that the consortium and its members are in good standing with Ofcom (Ulster University employees have recently been involved in providing counsel to Ofcom on matters of 5G development).

2). <u>Ulster University</u> are active members of the Global "LoRa Alliance" (<u>https://www.lora-alliance.org/</u>) and the Faculty of Computing and Engineering have 25+ years' experience in developing novel technology for commercialisation and employment creation (over 250 jobs) from spin-out companies. Ulster University houses the £5m Connected Health Innovation Centre (InvestNI 2012-2020) which supports SME innovation, a £7.5m Bio-devices Laboratory which supports UK businesses in rapid-prototyping of advanced products, and a number of other innovation centres in the areas of energy and manufacturing to support knowledge transfer and collaboration.

The Faculty of Computing and Engineering have extensive expertise in the IoT space and in particular have been part of the €2M Pervasive Nation All-Ireland LoRaWAN project (Ireland's Internet of Things testbed) and furthermore have deployed multiple LoRa and Sigfox base stations, as well as creating a range of innovative IoT devices in conjunction with a number of SMEs.



The Connected Health, NIACE and CASE Innovation Centres are actively engaged with 80+ SMEs keen to avail of the benefits this regional LPWAN network (and many more on the fringes reaping the rich benefits of the Innovation network).

Additionally Ulster University have recently developed substantial capability in the use of big data and data mining to develop intelligent connected systems that are data-driven and to release previously untapped potential in collected data.

**Invest Northern Ireland (INI)** is a Non-Departmental Public Body - an Agency of the Northern Ireland Department for the Economy. Its main organisational tasks are regional economic development and provides business support and foreign investment activities to support the economy. INI has been included in this bid proposal because of the experience and linkages which it can bring. For 2016/17, it promoted 5,600 new jobs; saw £203m investment in R&D and wider innovation and assisted in a 14.6% rise in the manufacturing export sales.

Its current Business Strategy (2017-2021) has identified the IoT as a growth opportunity and has been engaging with the business community to promote IoT benefits both in terms of business improvements and the creation of new products and services. INI understands the challenges involved in raising awareness and outlining opportunities which IoT provides. As the regional economic development agency, it has deep relationships with the business community and can identify suitable SMEs to participate in the call opportunities proposed. Additionally it facilitates networking through its extensive contacts to promote the required events and training proposed within this proposal. As these projects are implemented it can support local SMEs to take these solutions to international markets.

INI has extensive experience of working with others for the successful delivery of projects. It worked in partnership with the Department for the Economy and Catalyst Inc. (a next generation Science Park) to create the Digital Catapult node for Northern Ireland (2016). It was also worked with Ulster University to create the Advanced Biomedical Engineering Laboratory, to assist companies to develop prototypes for the biomedical, engineering, electronic device and aerospace sectors (2017).

The <u>Councils</u> in NI each have substantial experience of supporting and fostering business development in their particular council areas, this has resulted in a growing economy that addresses key sectors in the region including Healthcare, Manufacturing, Agriculture, Fishing, Tourism, Transport, Digital data management, Creative and artistic industries, Construction, etc. The councils hold responsibility for areas such as health, economic development, civic activities, etc. and growing local businesses.

In particular, Belfast City Council launched a "Smart Cities" completion on 26/10/17 which aims to harness innovation, technology and data science to drive the economy and will richly complement the large work conducted in this Digital Catapult programme. Smart Belfast's priorities are to use digital innovation to create employment, attract external investment, reduce economic inequalities, improve services, reduce costs, and develop the city for the future. The remit of the project has very specific challenge areas that do not overlap overly with this Digital Catapult LPWAN project but will certainly be enhanced by it (and vice-versa).

Additional active players in this proposal are Northern Ireland's **IoT Alliance** group <u>http://theiota.net/</u> (members include NI Electricity, NI Water, Kainos, etc.), **TechTalk** Coleraine (with 70+ members), and **IoT-Belfast** (with 50+ members). These groups foster a rapidly growing innovation IoT ecosystem regular meetups and events, and have provided a networking platform for collaboration and shared resources/knowledge. A regional LPWAN network will further drive these successes and is indeed essential for rapid growth of Digital companies in NI.



### 3).

Philip Catherwood (Ulster) – Dr Catherwood has expertise in novel IoT networks with a particular focus on medical devices and wearable wireless electronics, he is a regular reviewer for IEEE/IET journals and the EPSRC, he is invited to speak regularly on IoT/wireless topics (e.g. the IoT Smart Summit LPWAN conference in London (20/9/17), Digital Government Conference City of Derry (5/12/17)), and has led a number of large industrial and academic projects over a 20 year period.

Joseph Rafferty (Ulster) – Joseph is a researcher at Ulster University in the School of Computing and Mathematics.

Gary Campbell (INI) – Gary is the Sector Development Manager for Technology & Services at Invest NI and has ongoing interactions with some 550 digital and creative clients.

Representatives from the Council areas – These council representatives have been hand-picked by each council as those best positioned to deliver economic growth in their areas, they recognise digital technology as one of the key growth and opportunity areas and are most keen to explore LPWAN technologies. A recent example of this commitment is the Digital Northern Ireland 2020 consultation to help target future government funding for digital provision investment.

https://secure.investni.com/static/library/invest-ni/documents/digital-northern-ireland-2020-report.pdf

TourismNI – TourismNI is responsible for developing tourism and marketing Northern Ireland as a tourist destination. They run regular Digital Tourist events to help local tourism companies use data to create better tourism products.

SLA Ltd – SLA Ltd are a global software solutions company who have specialisms in Data Processing solutions. They are keen to investigate how SMEs can realise further revenue from the data they gather in a secure manner.

Bluebox Broadband - For almost a decade Bluebox have been providing superfast broadband to areas of Northern Ireland most providers can't get to. They provide bespoke, high capacity internet connections for demanding users. They have choice sites for their wireless equipment and can provide secure locations for some of the LoRa gateways.

Key SMEs/advisors – There are a selected number of advisors and key SMEs who have expertise in exploiting technology for business development. We have gathered technical advisors from BlueBox Broadband, See.sense, and RFproximity as they each have substantial commercial experience in LPWAN devices, services, and networks, and will help nurture other SMEs into successful adoption of LPWAN technologies.

4). We have selected a case study to illustrate local innovation by the consortium in the area of LPWAN.

#### Belfast City Council and See.sense: bikes

As of April 2017, 210 of the 576 Belfast hire bikes (similar to the London Santander bike scheme) in the fleet had either been stolen or had to be taken out of service due to vandalism, costing the scheme almost £1,800 per month. Over the Easter weekend of 2017 alone 19 bikes were stolen, six of which were recovered, and a further eight were vandalised. through



To address this problem Belfast City Council employed the help of local company See.sense, 2 Universities, and BT to utilize their LPWAN technology to address the situation. They used LoRaWAN devices embedded into smart bicycle lights to track the bikes across the city. However they also incorporated accelerometer sensors which allowed them to cross-reference the accelerometer data with positioning data to determine where the emerging potholes where on the city streets as well as record accidents to determine accident blackspots for cyclists. Thus, in a world first, sensor data is being crowdsourced from Belfast city bikes to help improve cycling safety in the city. The project technology is now being rolled out in Dublin, Manchester, and Milton Keynes.

Belfast City Council (Ciara Donnelly) - Web: <u>http://www.belfastcity.gov.uk/</u>, Tel.: 02890320202) See.sense (Philip McAleese) - Web: <u>https://seesense.cc/</u>, Tel.: 02891 800536)

5). The University has established and managed a number of LPWAN services and systems. As described above in point 2, the Faculty of Computing and Engineering were a key technical contributor to the €2M Pervasive Nation All-Ireland LoRaWAN project in collaboration with Trinity College Dublin, Cork Institute of Technology, Dublin Institute of Technology, Dublin City University, Maynooth University, Tyndall National Institute, University College Cork, University College Dublin, and Waterford Institute of Technology. (<a href="https://connectcentre.ie/pervasive-nation/">https://connectcentre.ie/pervasive-nation/</a> - contact details on website). The objective of Pervasive Nation was to build an Internet of Things testbed-of-scale in Ireland which is a resource to act as a strong catalyst for IoT research and innovation.

Ulster has a long history in wireless technology research and translation into commercialisation. Significant IoT progress has been made by the University in partnership with local industry, business, and public service providers to trial solutions in the Greater Belfast area (Contacts for reference are directly available through Stephen McComb, Technology Leader, NIBEC, Engineering Research Institute, Co Antrim, BT37OQB. Tel.: +44 28 90368018, Email: sj.mccomb@ulster.ac.uk).

Ulster was the first UK university to launch a SIGFOX IoT network, they are also host to the first Sigfox base station in Northern Ireland (<u>https://internetofbusiness.com/ulster-uni-iot-technology/</u>). Further work in Sigfox has developed a range of remote healthcare prototypes focusing on heart failure, patient fall detection, and smart homes.

6). We present a Gantt chart which outlines our systematic approach to deliver all the required outcomes.

											Mon	ths									
Ob Jeodi ves	K ey itsks	Personnel	8ep.17	O of 17 N	ov:17 De	10.17 Jan	L13Feb	.18M an	C.18 Apr	:18 May	.18Jun	.18 Jul	18 A ug.	.18 8ep	7.18 Oot	112 Nov	x.13Dec	0.18 Jan	1.18 Fel	0.18 M	ar.18
			-2	$\overline{\tau}$	÷	8		-		-			10	+	÷	2	-	4	9		17
	Ran and agree erad plecement of galeways sources council brances	UU, Councils, INI, Fourism NI, Bluebox, RFproximity																			
	Installation landering process	00																			
iloyment of regional LPWAN network	Installation of all galaways	UU (through contractor)																			
	let up for each galew ay on Things Connected	nn																			
	Test & vertilogion of galaxays, executing required remedial action	UU, Council																			
monet lastion tions development	Creation of a polential miloropayment model and solution to allow BMEs to generate data rav	BLA, UU																			
dining to increase	Create BME support (materials, user forum, ohilienge guidsnoe doos, eto)	00			_																
55 e con 5	Training for BINEs on technical & commercial exploritation of metwork.	8																			
	Promole Challenges to regional SMEs using multificoeted approach	UU, Counolis, INI, Tourism NI, 3 IoT forums																			
secuel diallenges	Run 6+ isrga-soale regional Challenges	UU, Councils, INI, Tourism Ni																			
ommeroibliskion	Support for BMEs to engineer solutions	UU, Councils, INI, 3 IoT forums																			
	Aupport for BMEs to expert southens	UU, Councils, INI, Tourism NI, 3 IoT forums																			
and the final fields	Bill Ernediups	UU, Councils, INI, 31oT forums																			
	Gethering and dissemination of success stories, issues, ame needs, etc.	UU, Councils, INI, 3 IoT forums			<u> </u>	<u> </u>															
	Challenge co-ordination meetings of the consortium	UU, Counolis, INI, Tourism NI, 3 IoF forums												_		_		_		_	
varamme review	soliidi feedbaok from BitEs to understand if mblarmfalloring is required	UU, Counolis, INI, Tourism NI, 3 IoT forums																			
	Bakeholder meetings to review progress against Largets	UU, Counolis, INI, Tourism Ni																			
st-project planning	Brgage with Digital Cataput, Investivit, SMEs, etc. to premote, fund, and operate the network and further targe scate chatempes	Consortium led by UU																			

CATAP



D3		LPWAN Technology and Support		
Please instanc	respo e of th	nd to the below regarding the implementation and maintaining of a local ne Things Connected and the associated customer service.		
1)	How nece	many sites will you be able to provide to host the LPWAN gateways with ssary power and Ethernet connectivity until 31/03/19?		
2)	Brief distri	ly describe the sites where you intend to host the gateways and their bution.		
3)	3) Briefly describe how you will ensure the gateways are installed and configured correctly to link up with the Things Connected portal.			
4)	Wha <sup>:</sup> funct	t provisions will you make to ensure the continued operability and ionality of the network?	Marked (10	
5)	Wha <sup>:</sup> servi	t provisions will you make to ensure the continued provision of quality ce and support to customers?	Weighting: ×2.5	
6)	Wha <sup>.</sup> netw	t provisions will you make for first line technical support to users of the ork?	(1300 Words max.)	
7)	Brief inten acces	ly describe other LPWAN technologies you plan to deploy in your ded coverage area, if any, and the extent to which they provide free as for non-commercial use for experiments, pilots and innovation activity.		
8)	Brief netw cove 31/0	ly describe how you would maintain the operability and quality of the ork and the relevant hosting sites longer term and how you may expand rage should Digital Catapult and yourself agree to continue beyond the 3/19 programme end date.		

#### **RESPONSE TO D3**

Northern Ireland has benefited over the last 10 years from extensive development of wired and wireless networks, although there are still some areas without an acceptable level of service. Broadband speeds in NI lag behind England and Wales, and are comparable with Scotland (including Highland areas), with NI being the only area in the UK unable to achieve download speeds of 1 Gbps in any areas. Also mobile voice services cover around 80% of Northern Ireland's landmass. LPWAN technology with its longer reach can introduce a form of wirelessly-enabled services to the wireless blackspots to create new opportunities. [ref: Connected Nations Report 2016 – Northern Ireland, Ofcom, 14 Dec. 2016].

1). We will provide 50 sites using LoRaWAN technology (gateways provided by Digital Catapult)

2). The 50 gateways will be strategically placed through collaboration between Ulster University and the Council areas to offer maximum possible coverage (based on our Longley-Rice propagation modelling work and strategic positioning based on SME locations). The focus will be on cities, towns, and the surrounding industrial areas, with specific installations to meet the needs of SMEs focusing on activities in rural areas (fishing, agriculture, etc.). Belfast already has a number of LoRaWAN gateways so efforts in this area will focus on addressing areas of poor coverage. Additionally we have agreed with existing wireless providers to ensure gateways are positioned on suitability high structures to increase geographical coverage; this is supported by the councils who will address any local issues with installation and/or planning.



3). We will use a registered contractor to install and test the gateways (we have worked with a number of local contractors for LPWAN installation in the past) and Ulster University will set up and test each gateway to ensure it correctly links with the Things Connected portal (of which we already have experience).

4). We will provide technical support (through the Ulster University) for the network, this will take the form of UU staff who will address all issues with connectivity, engage with the contractor to repair hardware faults as they occur, address any arising issues with linkage to the back end portal, and assist SMEs in getting connected.

5). UU will provide training sessions and organise/support regular meet-ups to engage and educate users/potential users, also we will provide development tutorials, example technical solutions, a technical user forum, and an array of training guides.

6). UU will make provisions on a number of fronts to ensure users are well supported in a timely manner. We will address any technical support issues via email and telephone. We will encourage users to first consult an online self-help portal (as is common for modern customer-centric technical help) which should solve a number of the simple queries. We will also develop a technical forum to allow users to share experiences and foster new ideas within the user community.

7). There are a number of LoRaWAN gateways in Northern Ireland, many of these are private networks with no direct access. However, within Belfast City and at the Ulster University in Jordanstown there are LoRaWAN gateways which can be used for experiments, pilots and innovation activity. Additionally the Smart Belfast initiative will see more LPWAN gateways emerge in the City of Belfast which will be free to use. The 50 sites provided by the Digital Catapult network will be further supported and enhanced by these other LoRaWAN networks

8). Our vision would be to have made the network a necessary part of commercial life and something businesses need to deliver their new services. It may be feasible for a business to take over the network and run it on behalf of the SMEs (and other groups).

We would also wish to share knowledge, stories, resources, and develop new partnerships between the Northern Ireland LPWAN community and the 4 other communities developed under this funding activity. This would better serve to create new innovation and trade opportunities across the United Kingdom.

Expansion would focus on increasing the number of base-stations to ensure highly robust LPWAN services as well as being able to offer advanced user services such as geo-positioning through LoRa station triangulation. We would be keen to develop local companies who can support and design/create new technical solutions for SMEs to help them more easily attain a working product or service. This will be essential to encourage widespread adoption of what LPWAN can offer. Further coverage would particularly benefit agriculture in remote areas, off-shore fisheries, and cottage industries wishing to expand.



D4	SME Innovation Programme				
Please re commur	spond to the below regarding driving LPWAN innovation in the SME ity.				
Consider Manufac extra ma	Consideration of one or more of the Digital Catapult target sectors – most significantly Manufacturing, as well as Digital Health and Creative Industries – will be awarded extra marks.				
Bids that targeted	can show a uniqueness in meeting the demands for LPWAN technology in in geographical areas and industrial sectors will also score higher.				
Engagin	g your local innovation ecosystem				
1)	Briefly describe the current innovation ecosystem in the area you intend to provide LPWAN coverage. For example, how many start-ups will be in the coverage area of the network?				
2)	low many events do you plan to run to engage the community with LPWAN and at what frequency?				
3)	Please describe the innovation and business ecosystem growth activity you vill carry out throughout the duration of the programme until the 31/03/19 programme end date.	Marked / 10			
Propose	d challenge-led innovation programmes	Weighting: ×3.5 (3000 words max.)			
4)	low many challenge-led innovation programmes do you plan to run between being awarded the contract on 31/10/17 to the 31/03/19 end date?				
5)	How many organisations do you expect to be able to enrol as challenge				
6)	Give an initial list of challenge owners you plan to engage in your innovation				
7)	Describe the types of challenges you intend to set for the programmes, ncluding how they benefit the challenge owner and the associated economic mpact.				
8)	low many SMEs do you expect to actively engage in each programme and overall by the 31/03/19 end date?				
9) 10)	Give an initial list of SMEs you plan to engage in your innovation programmes. Briefly describe the nature of the innovation programmes you will run, ncluding an outline schedule of activities.				
11)	What provisions can you make for technical and business support for SMEs hroughout the innovation programmes?				
12)	What provisions can you make for advisory and mentoring capabilities for SMEs throughout the innovation programmes?				



#### **RESPONSE TO D4**

#### Engaging your local innovation ecosystem

1). Northern Ireland has proven to be a unique area for start-ups, enterprise ventures, University spin-outs, etc. and as such the region has a bustling innovation ecosystem. The University, InvestNI, and the Councils are at the forefront in actively engaging on a long-term basis with a large number of these SMEs. Examples include the InvestNI-funded Innovation Centres based at Ulster University which have 80+ SMEs working collectively to drive change in the healthcare, construction, and energy sectors.

There are several hundred technology start-ups and SMEs in these Council areas and we have direct links with most of them through the stakeholders. As Northern Ireland shares a border with the Republic of Ireland there are further unique opportunities in the region of the UK to create international opportunities for trade and tourism as well as to address solutions to the coming Electronic border that Brexit may bring.

2). We will run a minimum of 2 events per quarter; these will take the form of training events, information events, business networking events, Science Faires, etc. These will be hosted at various locations throughout the region to ensure maximum provision of engagement opportunity.

Both the University and InvestNI are strongly focused on impacting the region's commercial success and have built ecosystems to create sustainable growth in the region. We will run 5+ large-scale challenges to cover key areas highlighted by Digital Catapult, InvestNI, local government, and councils. These are challenges that will help create digital solutions to both long-standing and emerging problems, create new business opportunities for local enterprises, and connect users in a cooperative way.

3). Growth activities are driven by the planned meet-ups, strategic collaborations on challenges (facilitated by InvestNI and the University), training from InvestNI on how to create commercial opportunity from LPWAN technology, and explicit activities to investigate the monetarisation of data to name a few.

#### Proposed challenge-led innovation programmes

4). The challenge-led innovations will be led by Ulster University and directed by the leader/s of the council areas. Challenge owners which will be a collection of leaders (current discussions have the leads from TourismNI, Belfast City Council, and Causeway and Glens Council) who represent all the councils and TourismNI. Councils have specific and detailed knowledge of the business needs in their area and understand how an LPWAN infrastructure could remarkably impact upon public and private sector activities. They each have a range of industries in their area including Manufacturing, Healthcare, Creative Technologies, High-end consumer technology, Agriculture, Fisheries, Tourism, Service industry, Sustainably energy, Sport, etc.

5). The Councils and TourismNI have agreed to champion the challenges in their areas, with regular dialogue and sharing of ideas and development stories to foster collaboration, reduce replication of effort, and expedite commercial progress.

NI is a highly entrepreneurial region; some of the council areas are home to a vast number of SMEs (for example, Mid-Ulster council region has 8,000+ small businesses). Indeed Mid-Ulster council area has a notable number of business start-ups; these businesses provide the lifeblood of our local economy and we would anticipate working with many of these businesses on this programme. Mid-Ulster Councils is a fitting example of SMEs located in dispersed rural communities (approximately two thirds of all businesses), all of which significantly contribute to the region's strong economic performance and drive up operational efficiency.



6). The challenge owners will be lead representatives from the Council areas in Northern Ireland as well as TourismNI (we envisage 3 lead representatives to represent all the councils and Tourism NI as described above). Each council is investing their money to run large-scale challenges that will trial and showcase how LPWAN technology can leverage new services leading to commercialisation. The University will support the challenge owners and maintain a database to document which SMEs are actively engaged in each challenge to ensure activity is accurately recorded.

7). The types of challenges will centre around 5+ key themes (the Councils each have specific industries and needs in their region). Each of the challenges have been customised by the councils to benefit the key areas of interest in the region with the prospect of increasing income from that sector. For example, tourism is a significant area of income for Northern Ireland with many foreign tourists coming to see such sites as the Giant's Causeway, the Titanic centre, world-renowned golf courses, and the various Game of Thrones filming locations. However there is currently no suitable way to monitor tourist movement, information which could allow tour operators to offer popular packages, create advanced payment options for more rapid access to sites, and present a digitally-enhanced bespoke experience.

Challenges will incorporate a range of investigative aspects including how LPWAN technology can be used within local business, how the data can be analysed to accomplish previously unattainable knowledge and services, the use of predictive modelling, visualisation of data, etc. Examples of locally suggested challenge projects include;

#### Health (Core challenge)

- $\Rightarrow$  Provide digital home-based monitoring of heat levels to identify fuel poverty in seniors
- $\Rightarrow$  Neighbourhood and city centre air quality monitoring
- $\Rightarrow$  Better tracking of household recycling behaviour and management of street waste bins
- $\Rightarrow$  Flood management/water level warning systems.
- ⇒ Legionella Control and monitoring of in-building water sources, leading to a reduction in manual monitoring, energy consumption and an overall cost -saving. This would have a direct economic impact to the public and private sector as a whole as well as impacting on occupational and public health.
- ⇒ Air quality and temperature control in homes and workplace to control moisture build up in rooms due to environmental and human changes. e.g. damp and humidity reduction.

#### Manufacturing (Core challenge)

- $\Rightarrow$  Investigate how LPWAN can help local factories increase operational efficiency
- ⇒ Facilitate Just In Time management through digital raw material tagging and centralised monitoring
- ⇒ Freight and asset tracking from Belfast Port and elsewhere (including the UK/EU border with the Republic of Ireland)
- ⇒ Forming a cluster of SMEs in the Manufacturing sector to look at LEAN processes and methods to adopt digital solutions to enhance innovation and productivity.

#### **Creative Technologies (Core challenge)**

# Belfast is ranked no.2 in top 5 Clusters Creative Industries in the UK with over 1,300 businesses employing over 32,000 people.

- ⇒ Allowing tourists to interact with tourist sites, museum exhibitions, landmarks, etc. using LPWAN
- ⇒ Harnessing IoT tracking technology to Immersive Tech projects; this would provide interesting crosstechnology opportunities (both of which DCUK are currently investing in) e.g. using both Immersive Tech and LPWAN to create a virtual experience in a particular street or public space or public event. An interesting possibility might be how we use LPWAN to **enhance Culture Night in 2018**.



#### Tourism

- ⇒ Understanding visitor activity across the region (including arrival/departure) and encouraging movement between attractions
- $\Rightarrow$  How to utilise LPWAN for increased tourist spend
- ⇒ Providing augmented reality to enhance visitor experience Tourist events Management (e.g. Golf, motorsports, etc.) using digital solutions for crowd/traffic management

#### Agriculture/ Food Manufacture

- $\Rightarrow$  A digital solution to track stolen farm equipment or animals Tracking of transportation and delivery in the food and agriculture sector.
- ⇒ Monitoring conditions during transit to enable product stability and freshness and particularly focusing on introduction to export for SMEs growing their market.

#### Transportation

- ⇒ Better understanding of commuter movement into NI cities to optimise out-of-city parking
- ⇒ Better understanding of movement of key waste products
- ⇒ Pedestrian flow modelling eg, tracking shoppers'/visitors movements to enhance planning of retail experience in towns and cities to increase retail revenue.

#### **Monetarisation of Data**

An overarching interest is with regards to the future commercialisation of the generated data. It is possible for SMEs both 'market' and to receive 'value' from sensor or device data that they are capturing. A local SME (SLA Ltd, a data processor specialist) is keen to investigate the development of informed revenue models for future micro-payment through experimentation and prototyping of solutions based on data supplied by UU during the network development phase. It would address General Data Protection Regulation (GDPR) for LPWAN solutions. This creative innovation work would support the activities of the SMEs to understand how SMEs might choose to create revenue from their data by selling it to a data consumer who can use it to inform creating new services based on real information. It would explore how a micro-payment layer consisting of an API Gateway, monetization middleware, a web portal for data providers to configure their endpoints and view API usage/analytics, could be implemented for LPWAN services to allow SMEs to create additional revenue. This would help inform other LPWAN network developers and show how services could develop around future LPWAN adoption to monetise the data. We are proposing that the outcome will be an online marketplace where potential Data Consumers can find interesting sources of IoT data which they can consume on a 'pay per request' basis via a Micro-Payments Gateway. There will be no financial gain from this work for either the consortium or SLA Ltd. SLA Ltd have agreed to contribute £30,000 in-kind of development time for the SMEs. UU and SLA will work together to promote the benefits (financial and other value) to the SMEs of making their data available to data consumers.

8). Our very conservative estimates would be for us to activity engage a minimum of 10-15 SMEs for each of the 5+ challenge areas (a minimum of 50 SMEs completing challenges in total), however we have ambitions for these numbers to be substantially higher. For example, Invest NI alone has over 550 digital and creative clients which it can approach to participate in the proposed programs and as such we fully expect participation across the programs and challenges to swell significantly.

In the short time the councils had to gauge interest they identified SMEs who are expecting to respond to the challenge calls, a small selection of SMEs not currently engaged in LPWAN programmes but keen to do so if Digital Catapult all the consortium to create a network include;



ER Media, Face Communications, Red Rhino, Taught Media, GCD Technologies, Arrow Head Design, Online Solutions, Smashing Eggs Limited, BNL Productions, Performa Sports, Torc Product Design, Seagoe technologies, Walter Watson, Eco-Depo, Rockwell Collins, Nitronica, Burrendale Hotel, Datum Design, Norbrook Laboratories Limited (Pharmaceuticals), ABP Newry (Meat Processing), FM Environmental (Manufacturing), Viltra Waste Water, MacNabbs Waste Management, Whitewater Brewery, and Herron Engineering, Plotbox, Madebymint Limited, Brilliant Trails Ltd.

In September alone we have been promoting the potential to SMEs including a gathering of businesses interested in LPWAN on 20<sup>th</sup> September, discussion about the Digital Catapult project during the initial engagement launch our Smart Belfast framework on 26 September (300 SMEs attending), etc. As we submit this bid we continue to engage with a multitude of facilitators and leaders in many areas including the Department for Infrastructure, Catalyst Inc. etc. Catalyst Inc. are pleased to support the Ulster University bid to operate this important initiative which is so well suited to the needs of NI for agritech and health uses in our diffuse rural populations. The Catalyst Inc. site in the region at ECOS would be an ideal electrically quiet centre for trials with full fibre access in the heart of 140-acre wetland site. The consortium will also actively encourage a mixed-methodology for the challenges, including co-investment opportunities, joint R&D projects, support from local Fab-lab communities, etc.

9). We have a number of early adopter companies who are already exploring the potential or having shown interest through existing networks and projects including Intelesens, Kraydel, See.sense, ISARC ltd, Aepona, CMASS, Kainos, RF Proximity, Total Mobile, Lava Group, Core Tech NI, Smart Ventilation Ltd, SLA Ltd, Analytics Engines, Ashdale Engineering, Atlas Communications, Bloc Blinds, Brainwavebank, British Telecom (BT), Camlin Group, Dell, Deloitte Digital, ECIT/CSIT, Entrepreneurial Spark, Fab Labs, Intel, Kingspan, NI Water, NICVA, NIE Networks, Vodafone, etc.

There are also a large volume of potential adopters who will be engaged with via the wider sharing and educating of companies who may have an interest in the capability and potential.

10). The 5+ challenges will be managed by each of the councils (and 1 from Tourism NI) and challenges will run for a minimum of 6 months with options to extend to ensure SMEs have time to properly investigate the benefits as well as to assist late-adopters to effectively engage in a beneficial way.

11).We have made provisions for technical and business support for SMEs throughout the innovation programme include the following;

- A range of complementary technical support services for users
- Training opportunities for SMEs to understand the technology potential and implementation processes
- A training and information website for SMEs (including the video recordings of all training sessions)
- A project user forum to allow users to share experiences and ideas, support each other, create opportunity for collaboration, and to share tutorials
- Regular scheduled meet-ups with time for technical support
- Innovation Boot camps
- Business support through InvestNI who can advise on how to further exploit the business opportunities as they arise.

12). We have make provision for advisory and mentoring of SMEs throughout the length of the project (and beyond) through the following resources:

InvestNI business support to help SMEs commercialise new ideas and services effectively



- Further support through Ulster University's Innovation centres, the Councils, the Ulster University business Hatchery, and International links with the CONNECT project in the Republic of Ireland.
- The Councils will be the focal point of enquiries and support to SME's and can provide advisory and mentoring capabilities to local SMEs as appropriate through the Economic Development Programmes.
- An online SME support forum developed and hosted by Ulster University for the project
- Regular scheduled meetings (some hosted by Ulster University and InvestNI) organised by IoT Alliance, TechTalk Coleraine, and IoT-Belfast.

Every council already has SME development programmes aimed at increasing levels of innovation, encouraging new technology firms to the area, and releasing the potential of existing SMEs through mentorship; Such schemes include the Amplify Business Escalator Programme in Mid & East Antrim which is designed to provide up to 35 hours one to one mentoring to SMEs on a range of business support needs including innovation. However the potential of many is curtailed due to limited digital technology provision; this is the key reason the council response has been overwhelmingly positive. Councils are keen to work collectively to prevent duplication of projects in different geographic areas within each challenge. This cooperative activity will be managed by the councils themselves (and overseen by UU and InvestNI to ensure projects are strategically related to call aims and objectives.

Please separate this document and submit the below as a separate attachment to the above and include appendices that are clearly referenced.

Version 1.0.0

## **APPENDIX 6 - LETTER FROM WORKPACE RE DRAPERSTOWN TOWNSCAPE HERITAGE**



Mr Adrian McCreesh Mid Ulster District Council 76-78 Burn Road Cookstown BT80 8DT

11<sup>th</sup> September 2017

**Dear Adrian** 

#### **Draperstown Townscape Heritage**

Draperstown is one of only five Conservation Areas within the Mid Ulster District Council area and is likely the Conservation Area with the greatest number of derelict and empty buildings within its town centre.

The Townscape Heritage programme, funded by the Heritage Lottery Fund (HLF), is for schemes which help communities improve the built historic environment of conservation areas in need of investment. HLF supports partnerships of local, regional and national interests that aim to regenerate economically disadvantaged historic areas for the benefit of local residents, workers and visitors. The grants range from £100,000 to £2million and the application process is in two rounds.

As this is the last call for applications (the scheme will close at the end of this round), Workspace feels that an application for support under the Townscape Heritage scheme should be made for the Draperstown Conservation Area and in making the application the company is prepared to take the lead on the scheme.

To make an application Workspace will need to have Mid Ulster District Council as a partner. This would involve the Council providing both financial and partnership support over the five years of the scheme should the application be successful. The financial support is unlikely to exceed £100,000 per annum for the five year period of a total scheme cost of upwards of £1.5 million, though the total costs of the scheme will not be known until the first round application has been completed. The cost to complete the first round application is estimated at between £10,000 and £15,000 for which a contribution toward this cost is sought.

Workspace would hope that Council will look favourably on this request for support both to make the round one application (the deadline for submission is December 2017) and in principle towards the implementation of the scheme if the application is successful. The implementation of the scheme would not commence until the 2019/2020 financial year.

**Yours sincerely** 

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Laurence O'Kane Chairman