SMART DUBLIN

Creating new collaborations

Michael Guerin

Programme Manager

Smart Docklands – Dublin's Smart City Testbed

@MichaelBGuerin

What is a Smart City?

…flying cars over Poolbeg?

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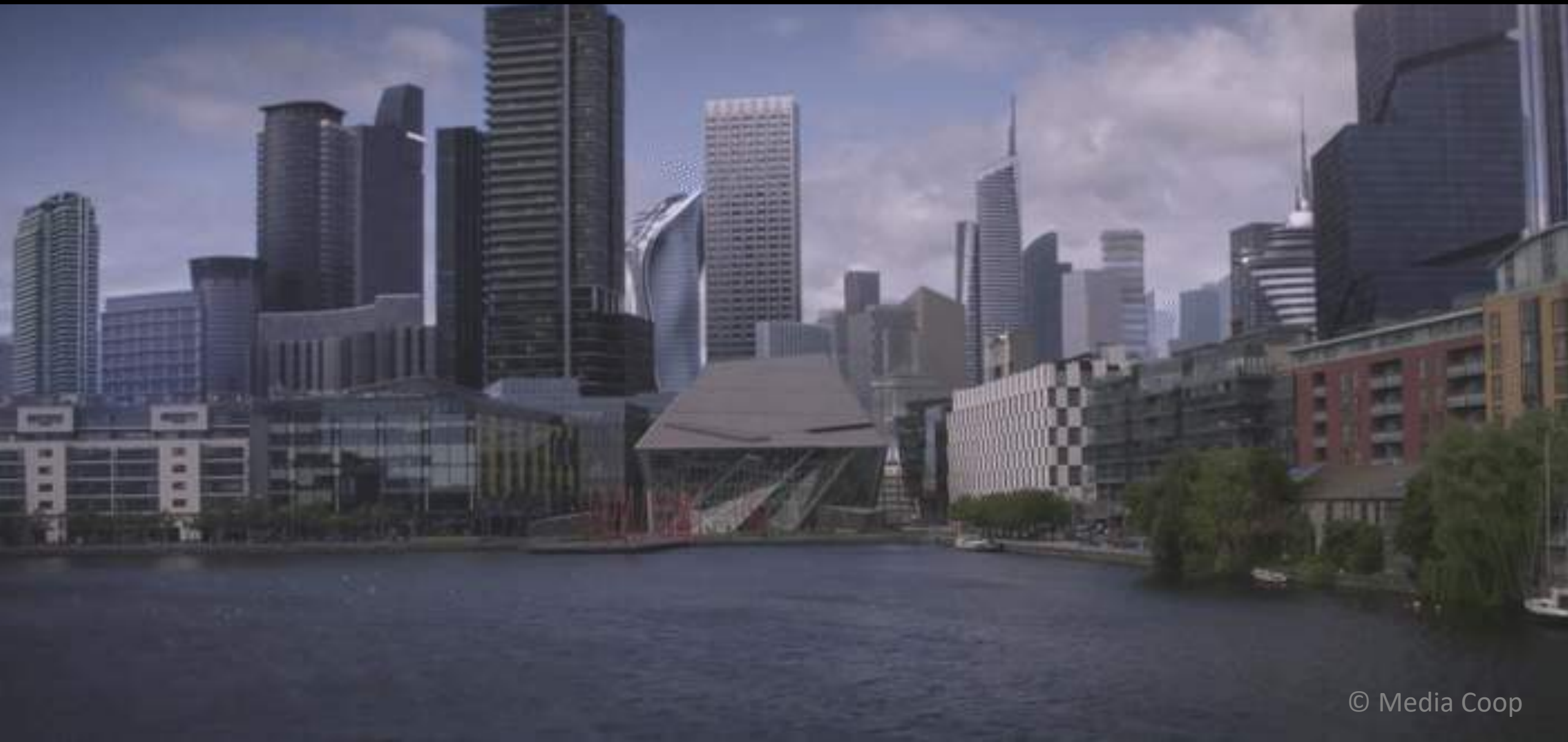
…skyscrapers in Grand Canal Dock?



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Futuristic City ≠ Smart City

A **smart city** uses information and communication technologies (ICT) to **enhance the quality and performance** of urban services and **improve how cities function**.

The overarching aim of a smart city is to **enhance the quality of living for its citizens** through smart technology.

A Smart City is about

creating efficiency

to

improve how a city functions

WHAT IS SMART DUBLIN?

IT IS AN INITIATIVE OF THE **FOUR DUBLIN LOCAL AUTHORITIES** TO ENGAGE WITH SMART TECHNOLOGY PROVIDERS, RESEARCHERS AND CITIZENS TO SOLVE CHALLENGES AND IMPROVE CITY LIFE.

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

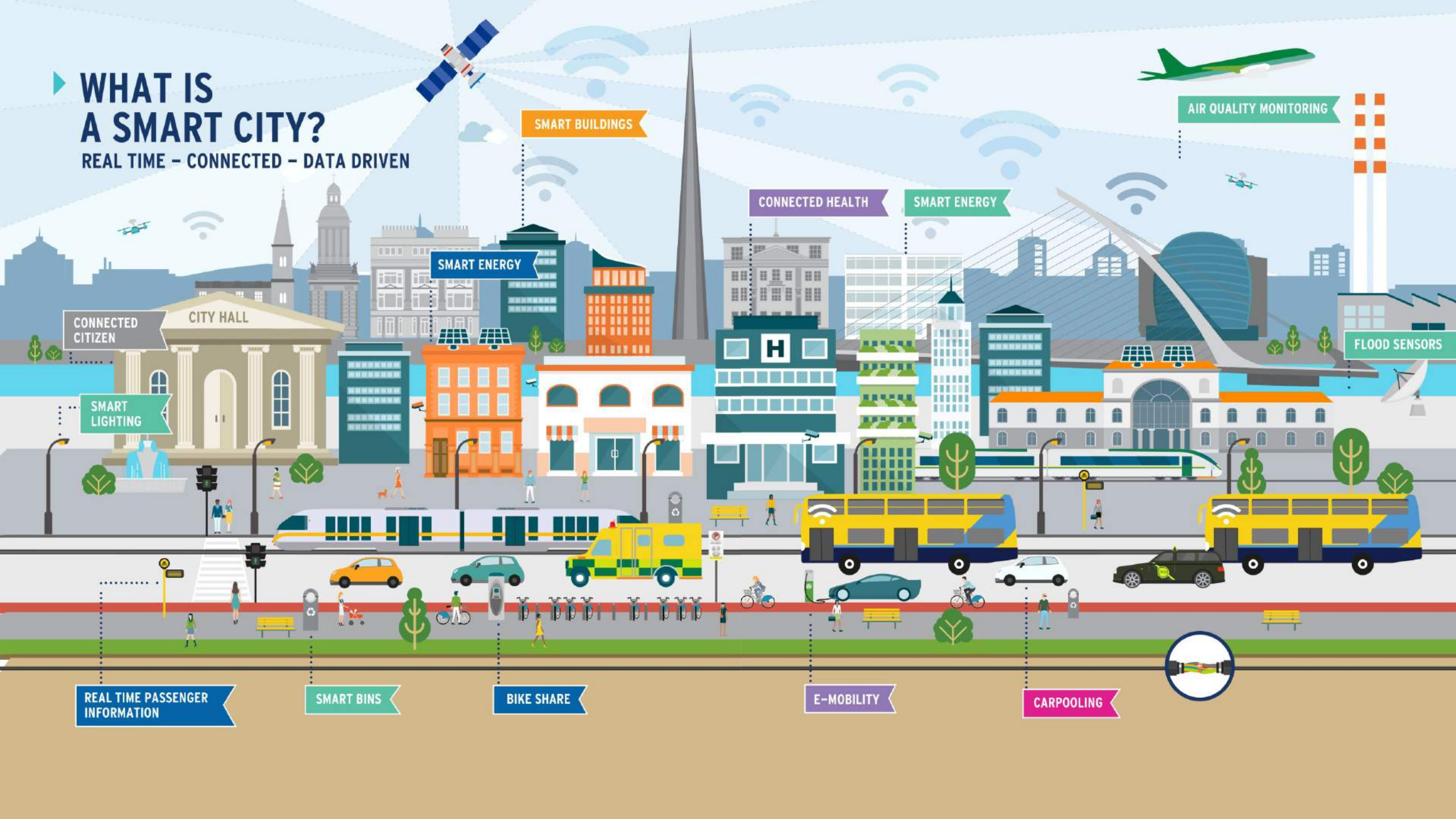
Comhairle Contae Átha Cliath Theas
South Dublin County Council

dlr
Comhairle Contae County Council

Comhairle Contae Fhine Gall
Fingal County Council

WHAT IS A SMART CITY?

REAL TIME – CONNECTED – DATA DRIVEN



Smart City tech has arrived **in Dublin City…**

DUBLIN AS A TESTBED

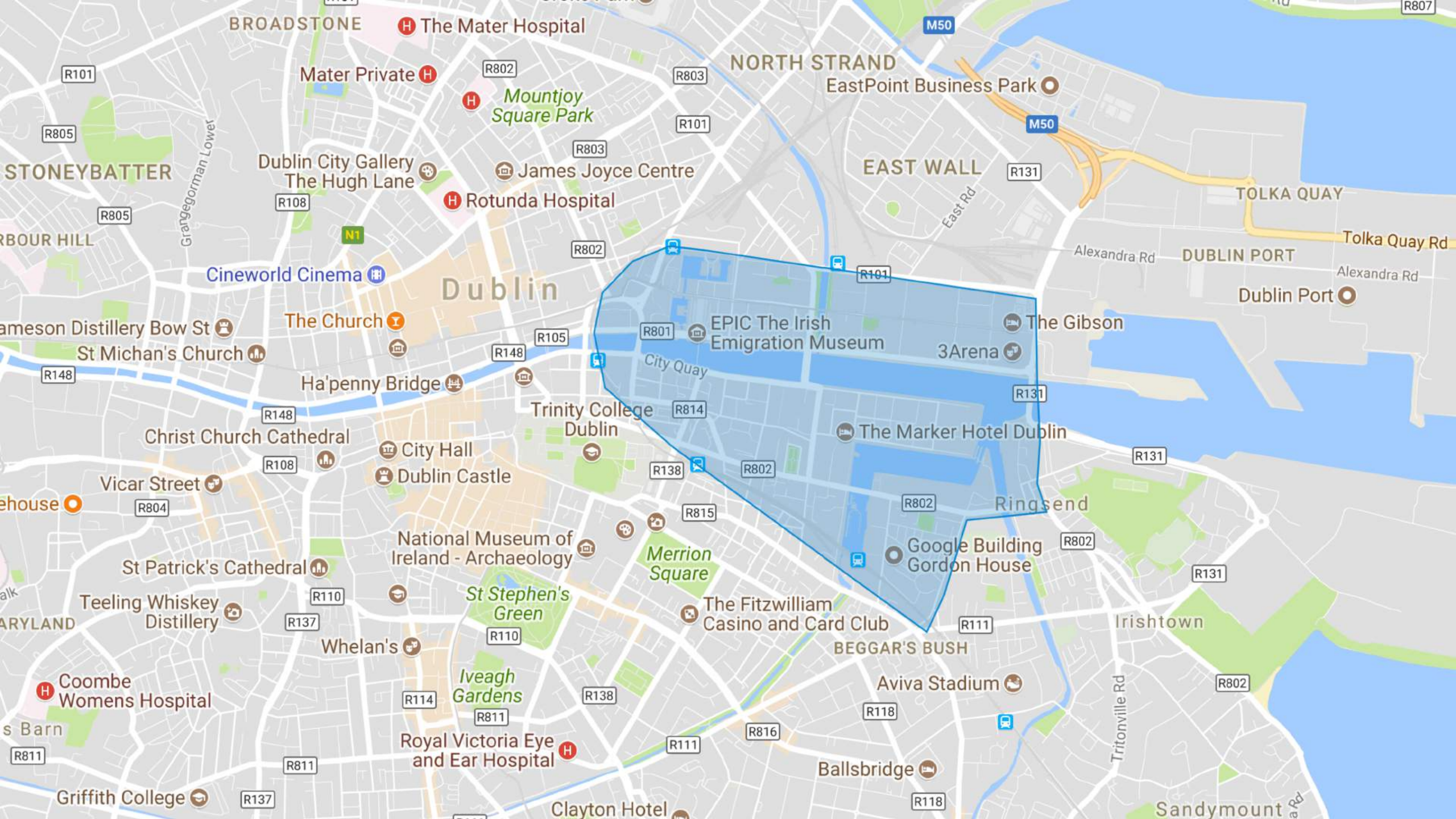
> “ WE ARE BIG ENOUGH YET SMALL ENOUGH TO BE THE IDEAL LOCATION TO PILOT NEW CITY SERVICES & SOLUTIONS

SMART DOCKLANDS
A Smart Dublin District

Part of SMART DUBLIN

Supported by URBACT
Driving change for better cities

THE WORLD'S MOST CONNECTED BUSINESS & LIVING DISTRICT


BROADSTONE
The Mater Hospital
Mater Private
Mountjoy Square Park
NORTH STRAND
EastPoint Business Park
STONEYBATTER
Dublin City Gallery The Hugh Lane
James Joyce Centre
Rotunda Hospital
EAST WALL
TOLKA QUAY
Tolka Quay Rd
Alexandra Rd
DUBLIN PORT
Dublin Port
Cineworld Cinema
Dublin
The Church
EPIC The Irish Emigration Museum
The Gibson
3Arena
City Quay
Ha'penny Bridge
Trinity College Dublin
The Marker Hotel Dublin
Christ Church Cathedral
City Hall
Dublin Castle
Vicar Street
Ringsend
Google Building Gordon House
National Museum of Ireland - Archaeology
Merrion Square
St Patrick's Cathedral
St Stephen's Green
Teeling Whiskey Distillery
The Fitzwilliam Casino and Card Club
Irishtown
Whelan's
BEGGAR'S BUSH
Coombe Womens Hospital
Iveagh Gardens
Aviva Stadium
Royal Victoria Eye and Ear Hospital
Ballsbridge
Griffith College
Clayton Hotel
Sandymount
Tritonville Rd
East Rd
M50
R101
R802
R803
R805
R108
N1
R105
R148
R801
R814
R131
R138
R804
R815
R110
R137
R114
R811
R816
R111
R118

JURYS INN

44,000
Employed

26,000
Residents

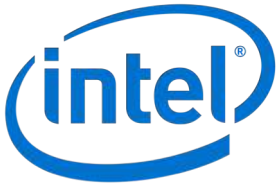
9%

€3bn

Home to
over 500
businesses

A hub for global tech companies

Smart Docklands Network



JAN 2018: SMART CITY ACCELERATOR

- Hosted 23 global CTO's / CIO's
- Convened by Harvard TECH
- Co-Hosted by Dublin City Council
- Supported by Google, Facebook, Accenture, Dense Air, Microsoft
- Dublin Principles for Smart District Development

What's been done so far?

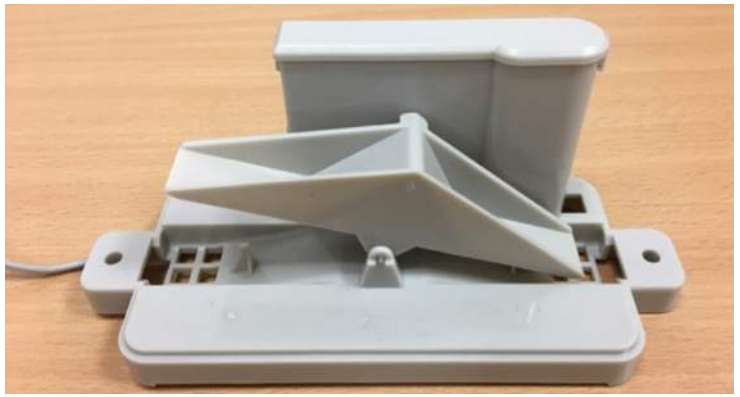
accenture
THE DOCK

“The most connected building in the world”

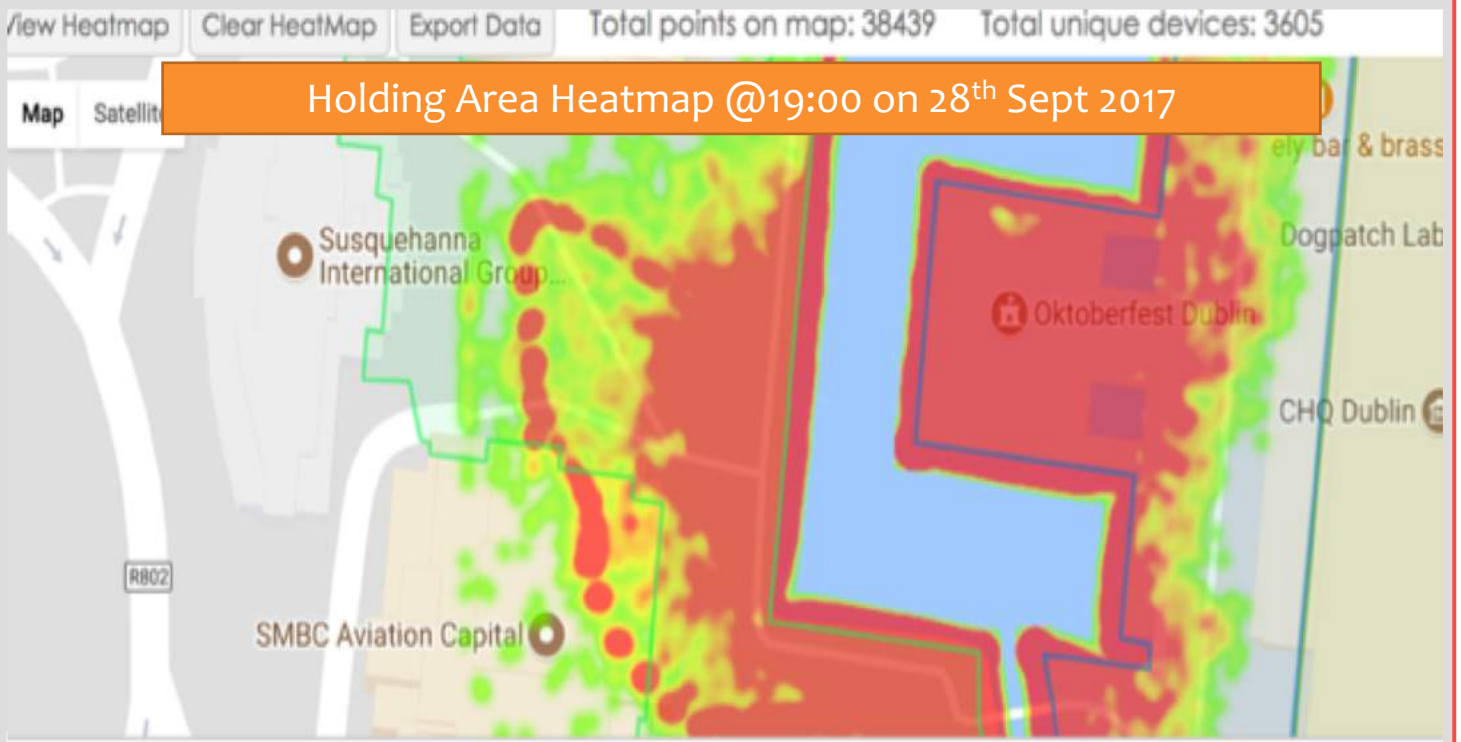
Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

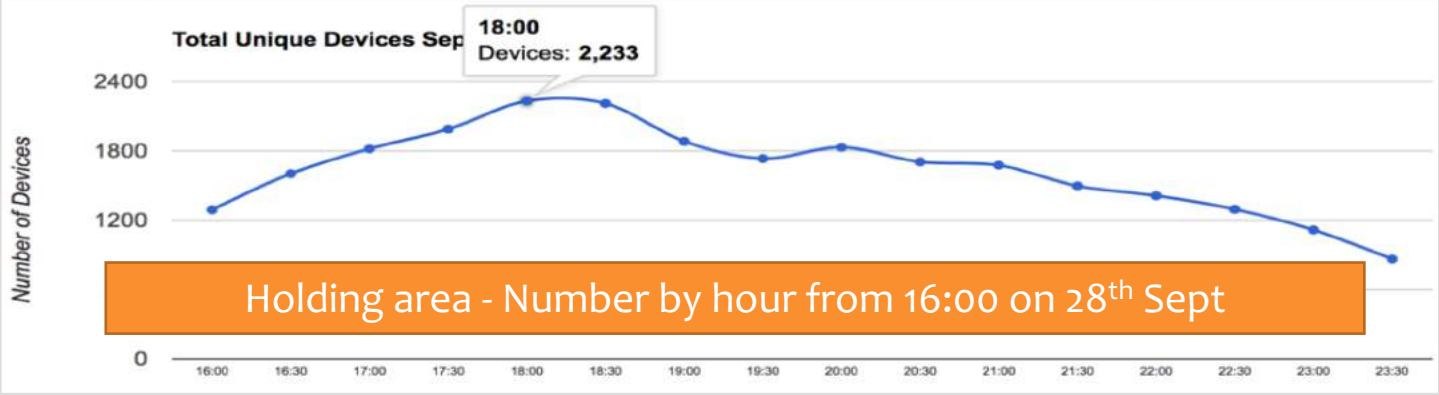
intel

CONNECT
Networks of the Future

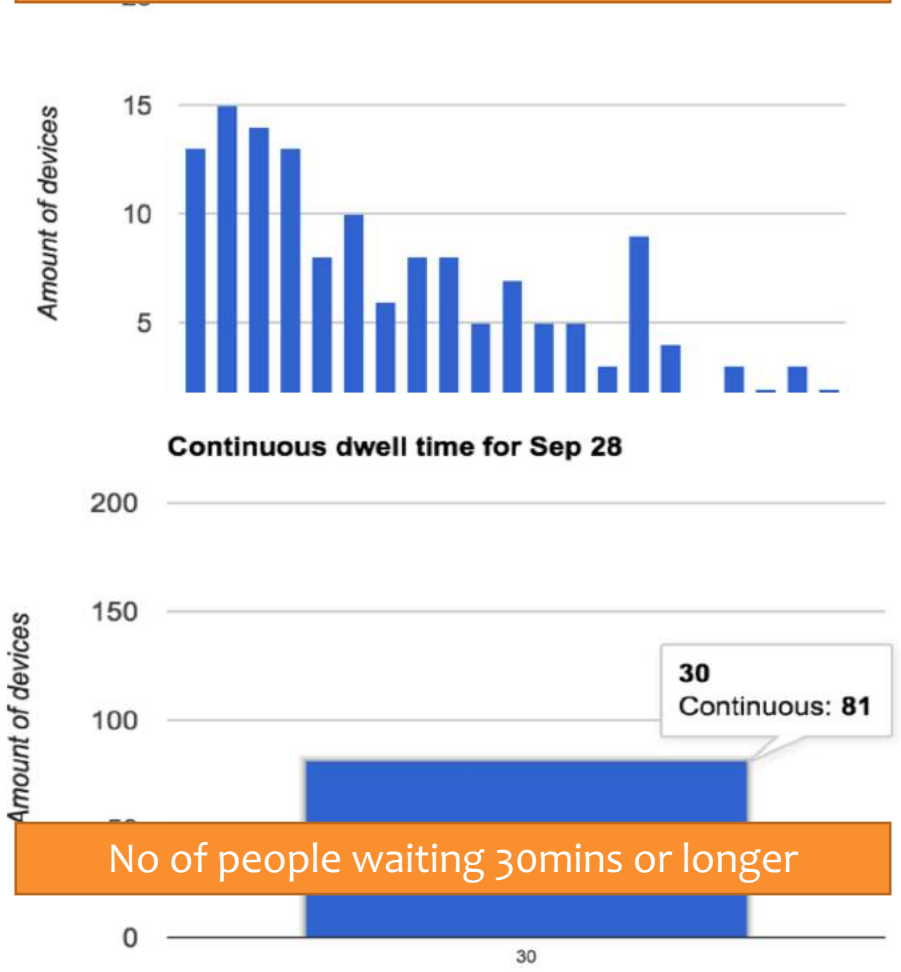


Analysis of queue times 28th September 2017

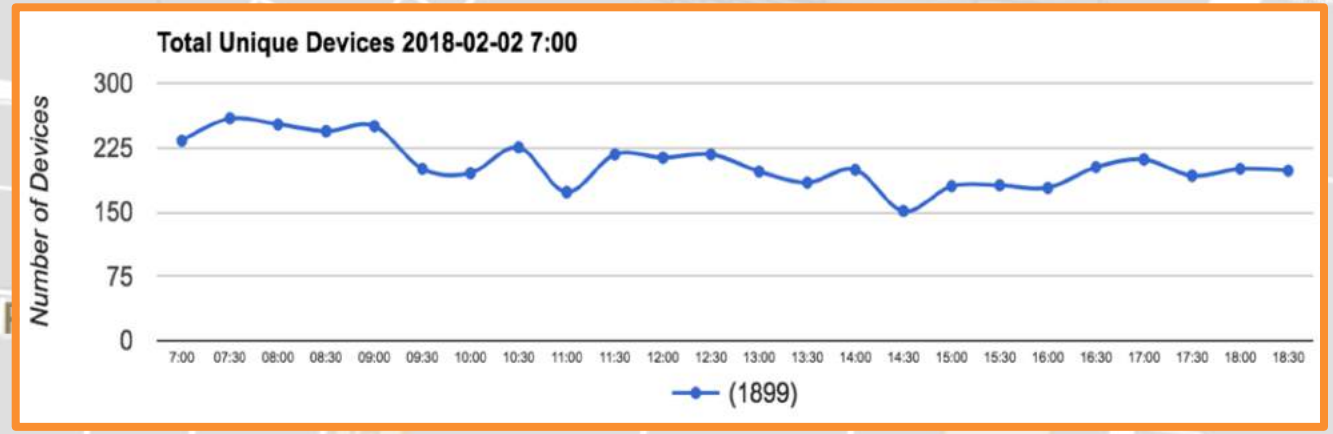


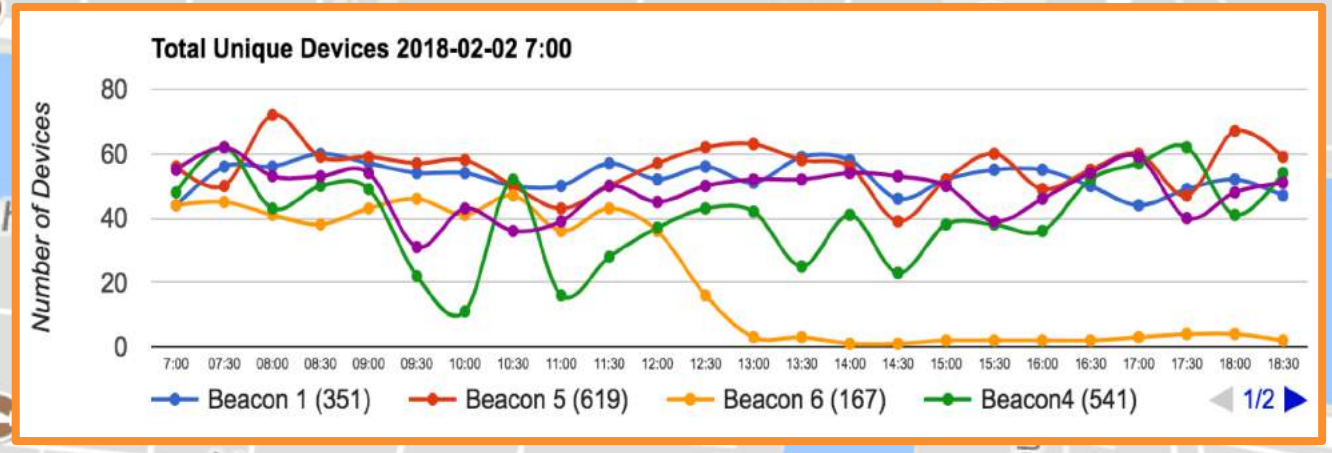


No queuing between 10 & 30 mins



Pedestrian Measurement in Docklands





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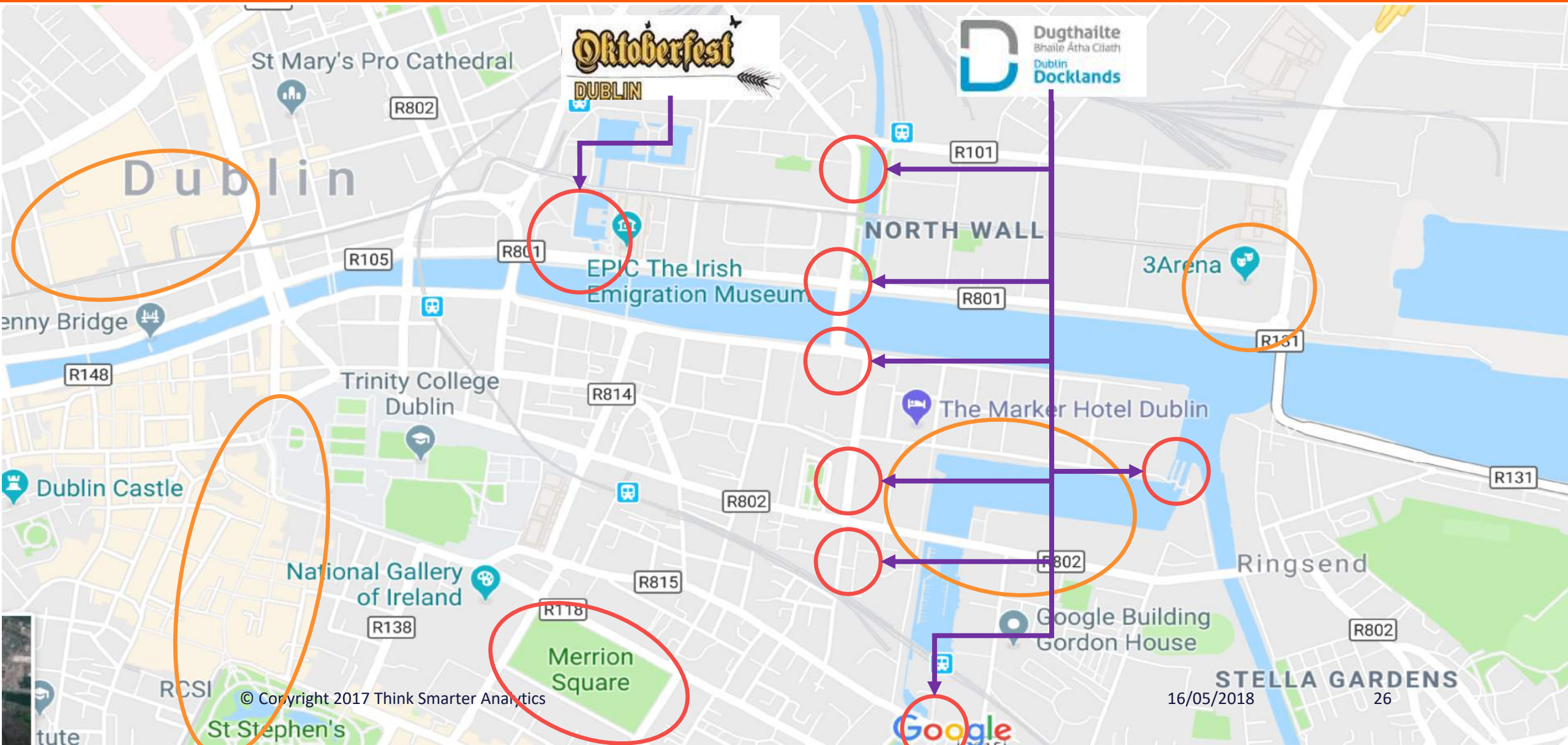
Advanced Footfall Analytics using IoT & WiFi in Dublin Today



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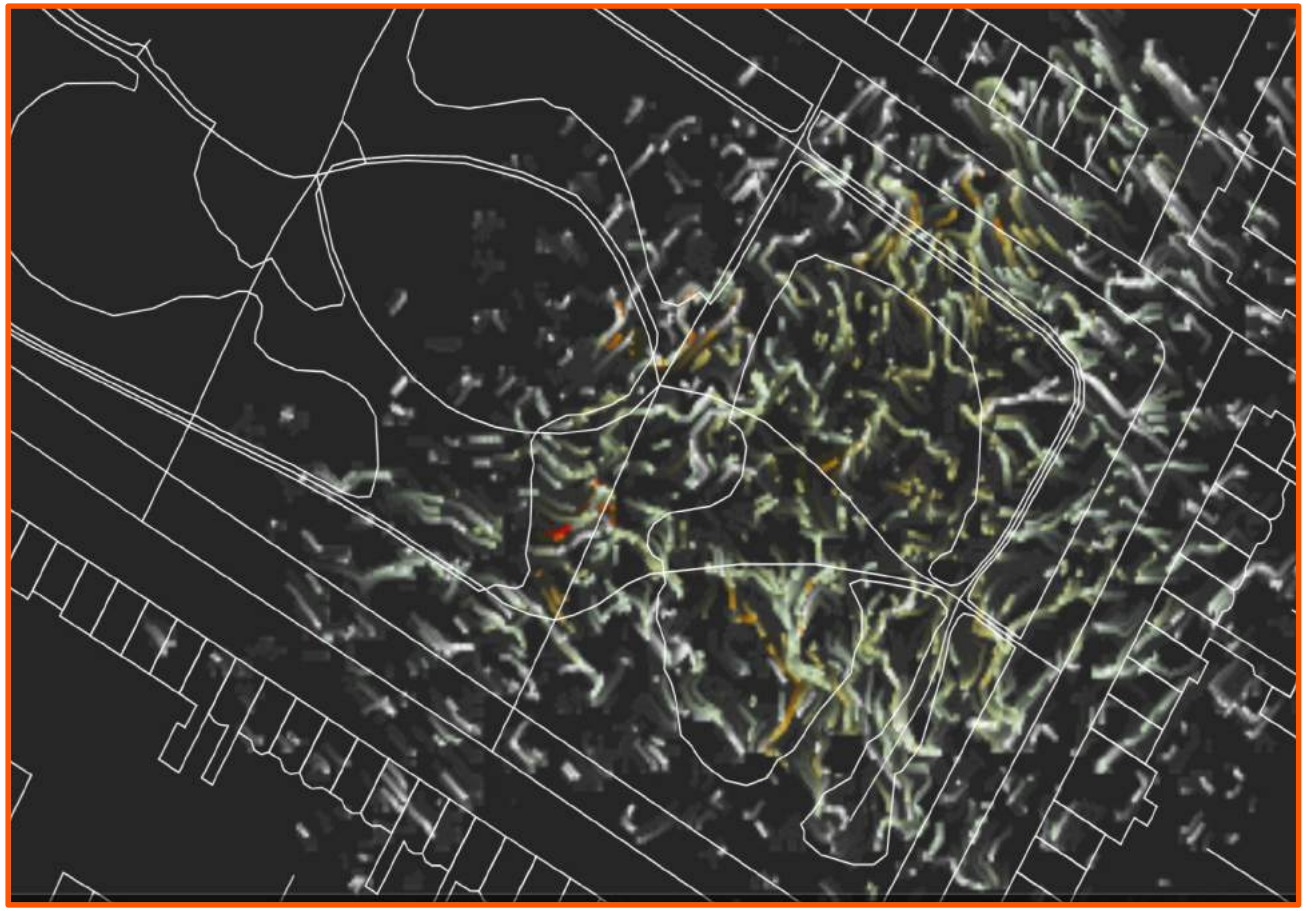
Heatmap & Flowmap

Heatmap Merrion Sq -12th April @13:00-13:30

Flowmap Merrion Sq -12th April @13:00-13:30



Open Challenges

SBIR

HEATMAP OF CENTRAL DUBLIN

Heatmap showing the most popular cycling routes in the city centre.

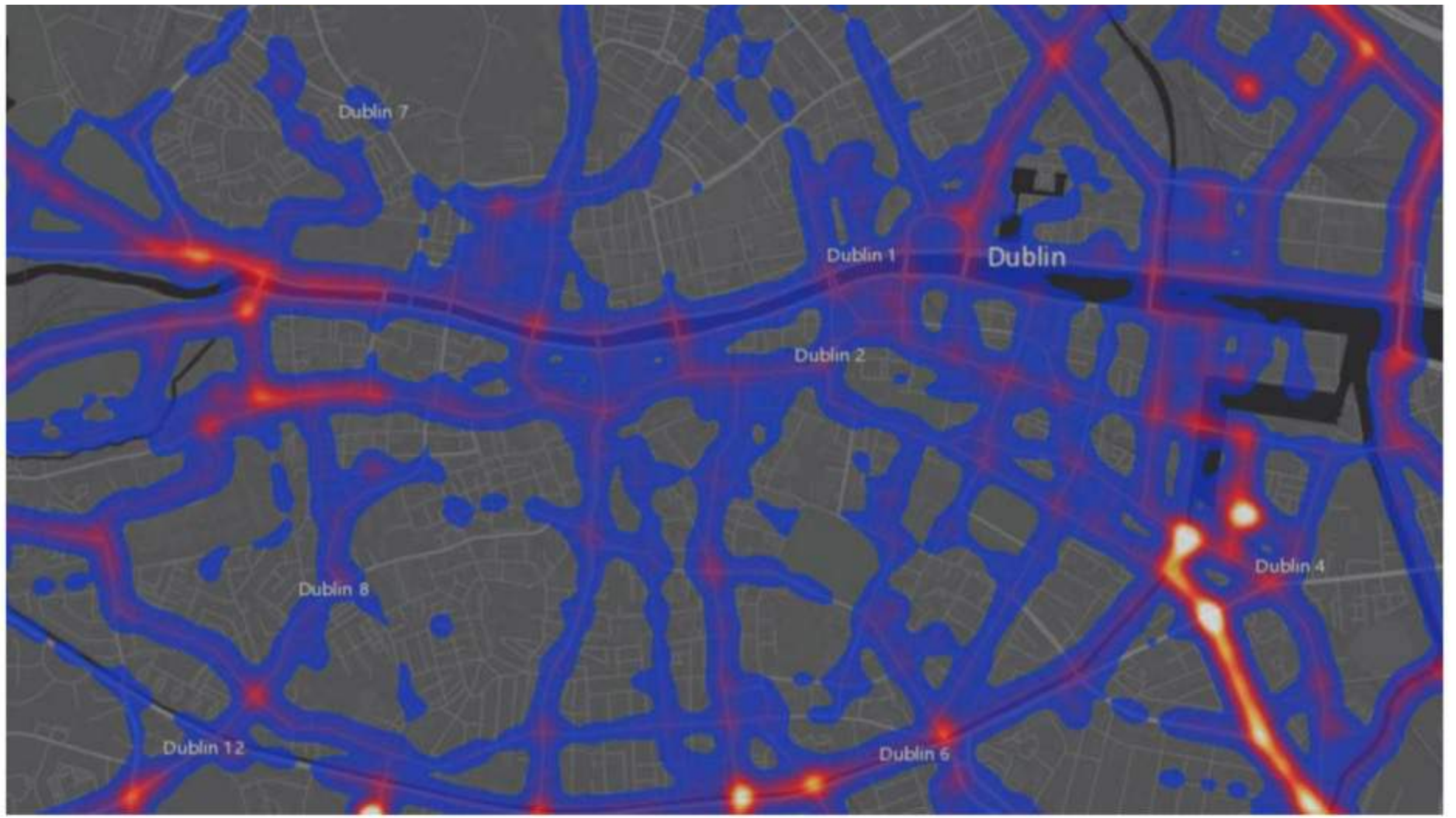
1500
cyclists apply

500
cyclists accepted

3
Months of data collection from Oct - Dec

470
cyclists collected data

573
annoyances recorded



DIRECTIONALITY

SEE.SENSE ROAD SURFACE SCORE

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What's in the pipeline?

Types of Connectivity

LPWAN

LoRa™

sigfox

vodafone NB-IoT

Cellular

3G

4G LTE

5G

Wi Fi™

Sheriff Street Lower
Harbourmaster Place
George's Dock
Mayor Street Lower
Mayor Street Upper
The Point
N Wall Quay
Talbot Memorial Bridge
Sean O'Casey Bridge
City Quay
Sir John Rogerson's Quay
Ropewalk Way
Lower Lane
Hanover Street East
Pearse Street
Hanover Quay
Green Street East
Macken Street
Hogan Place
Cambridge Road
Thomas Street
Legend
6 Storey Commercial/7 Storey Residential
5 Storey Commercial/6 Storey Residential

DENSE AIR

Mobile Networks Enhanced and Extended

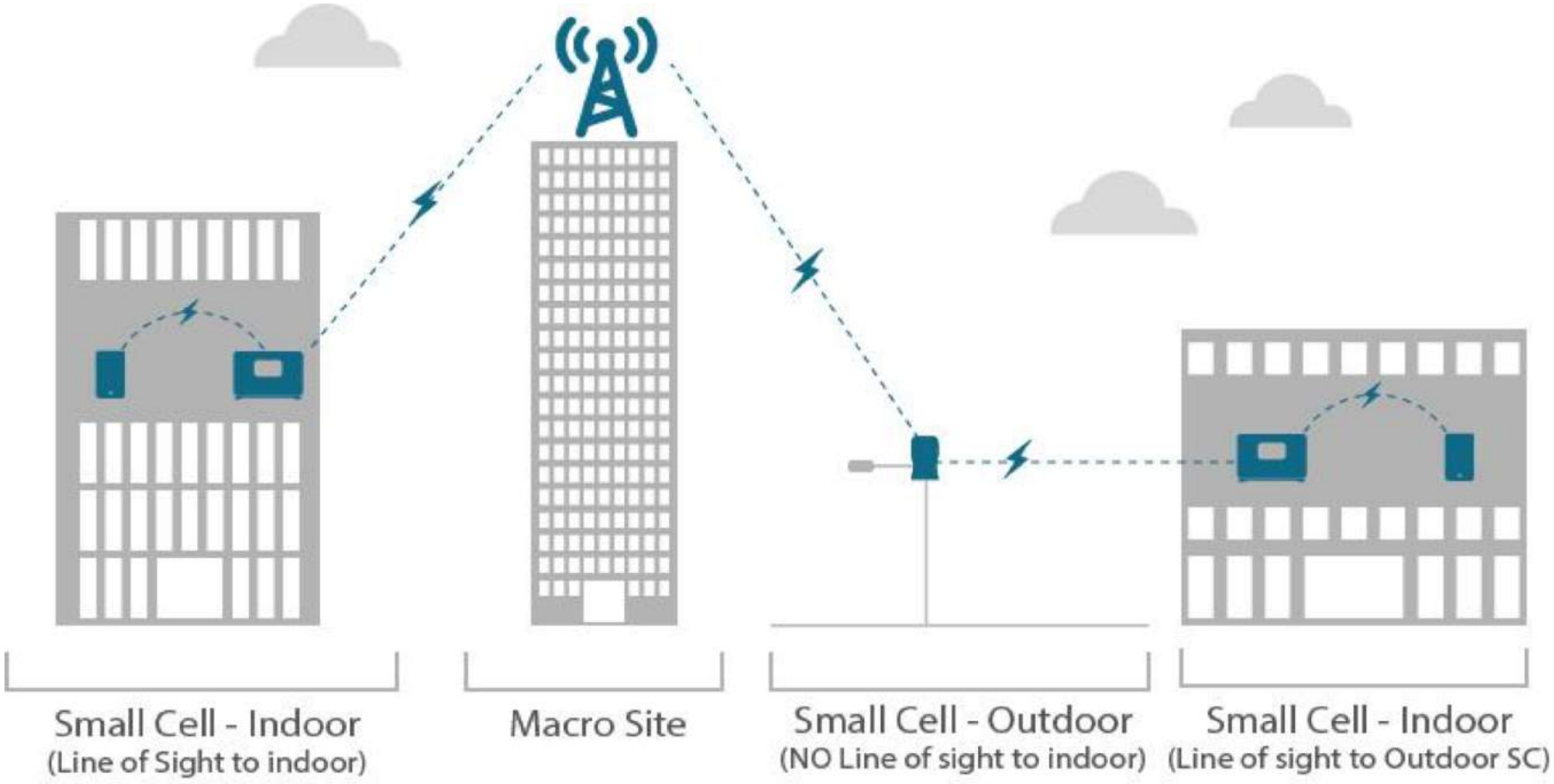
Enabling High Performance 5G Connectivity in **URBAN** Environments

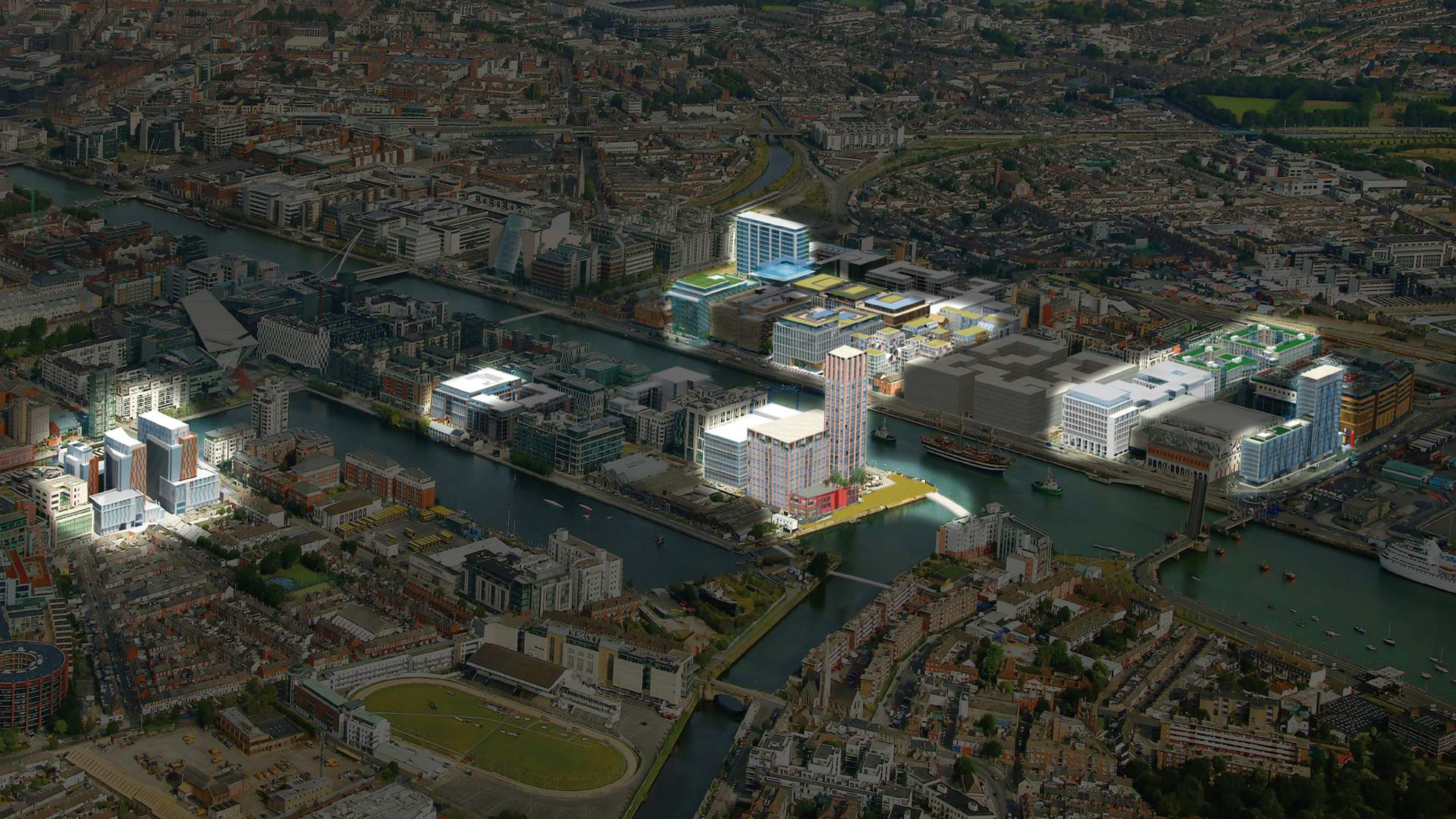
Proven, Cost Effective **INDOOR** Network Penetration

A Neutral Host - Enhancing Multiple Carrier Connectivity and Penetration through our **'MAGIC BOX'** Solution

Extending Network reach to **RURAL** Areas

Smart Docklands - Small Cells





THE IRISH TIMES

Wed, May 2, 2018

Dublin's tallest office building will house 2,000 workers

The Exo is set to be built in Point Square over two years

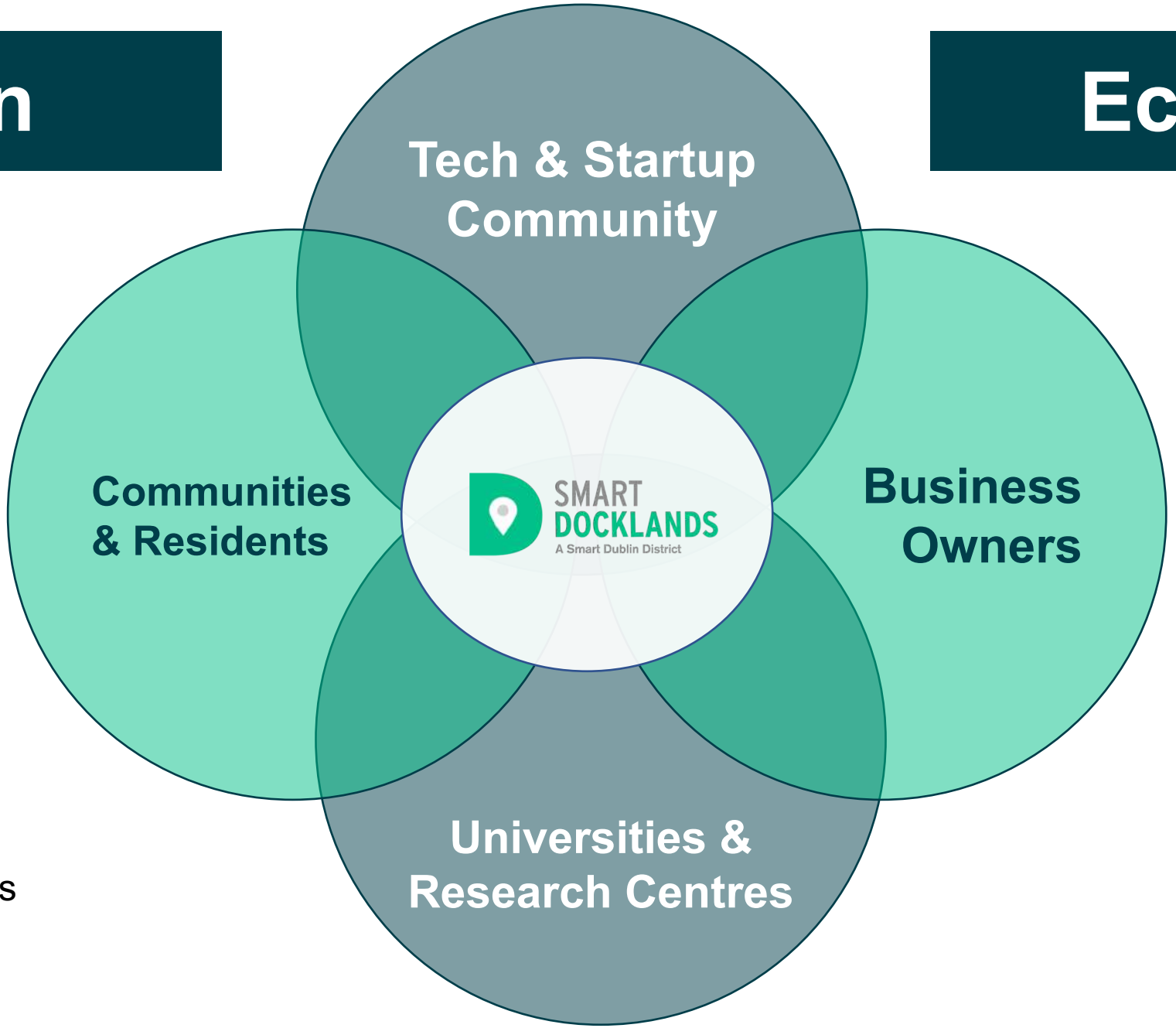
Going forward

Category	Name	Who's Involved	Network (if Appropriate)	Status
Citizens & Living	Oktoberfest	DCC, Think Smarter & Cisco	WiFi	
Citizens & Living	3D Model - AR/VR	DCC, Nama, 3D3, NUIM		
Citizens & Living	Bridge Location Project	DCC, Think Smarter & Cisco	WiFi	
Energy, Water & Waste	Rainfall Sensors	DCC, Connect & Intel	LoRa	
Energy, Water & Waste	Docklands 21	Sustainable Nation & DCC		
Energy, Water & Waste	Big Belly Bins	Big Belly & DCC		
Energy, Water & Waste	AT&T Smart Lighting	AT&T & DCC		
Energy, Water & Waste	District Heating	DCC & Codema		
Energy, Water & Waste	Covanta Dublin - Incinerator	Covanta & DCC		
Smart Buildings	Accenture - The Dock	Accenture		
Smart Buildings	Facebook EMEA HQ	Facebook		
Smart Buildings	CHQ Building	CHQ		
Smart Government	Public Realm Integration - Poolbeg	DCC		
Smart Government	Gully Blockages	Voguetek, DCC & Vodafone	NBIoT	
Smart Mobility	See.Sense	See.Sense & DCC	Bluetooth & Cellular	
Smart Mobility	Smart Traffic Lights	DCC		
Smart Mobility	Dublin Bikes	DCC & JCDecaux		
Smart Mobility	Real Time Passenger Information	NTA & TFI		
Smart Mobility	GoCar - Car Sharing	GoCar & DCC		
Smart Mobility	Toyota Yuko - Car Sharing	Toyota		

CATEGORY	SUB-CATEGORY	NETWORK DEPLOYMENT STATUS	USABILITY STATUS	COMMENTS
CELLULAR				
	3G /4G/4.5 traditional			Expect full coverage and use
	4G Small Cell			Trial beginning with Dense Air
	5G			Initial trial with Vodafone & Ericsson
LPWAN				
	NB-IOT			Recently launched by Vodafone
	SIGFOX			Full coverage, easy use for third parties, could focus more projects in the area
	LoRa			Full coverage, easy use for third parties, could focus more projects in the area
WIFI				
	Public WiFi			Ongoing projects to deploy / temp situations like Oktoberfest / but very open to all once there
FIBRE				
	Dark Fibre			Access not that straight forward
BEACONS				
				WiFi & Bluetooth - ThinkSmarter
SATELLITE				
	Which flavours required?			Need to establish which flavour

Innovation

Ecosystem



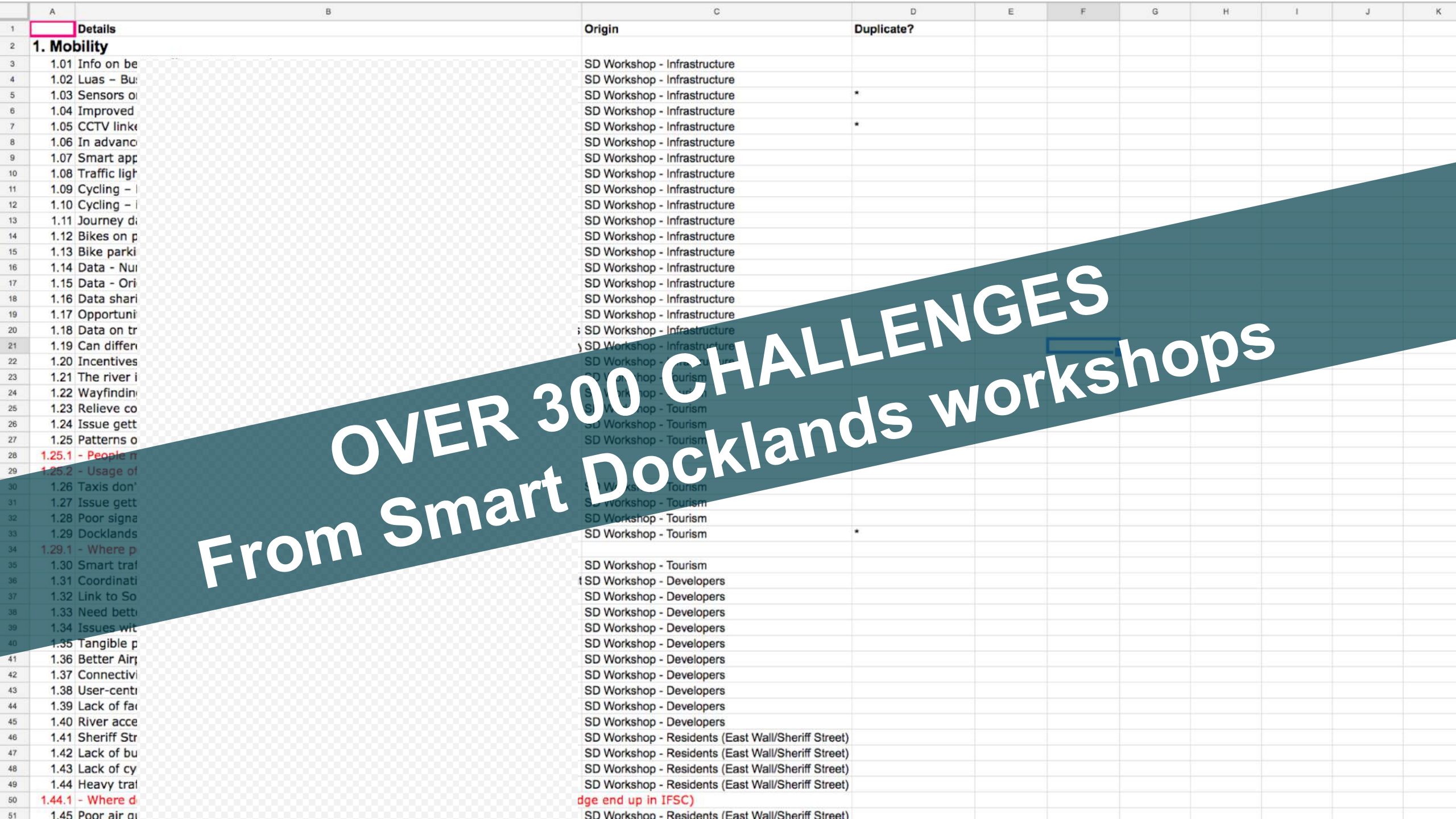
Ideas/Challenges

Innovation

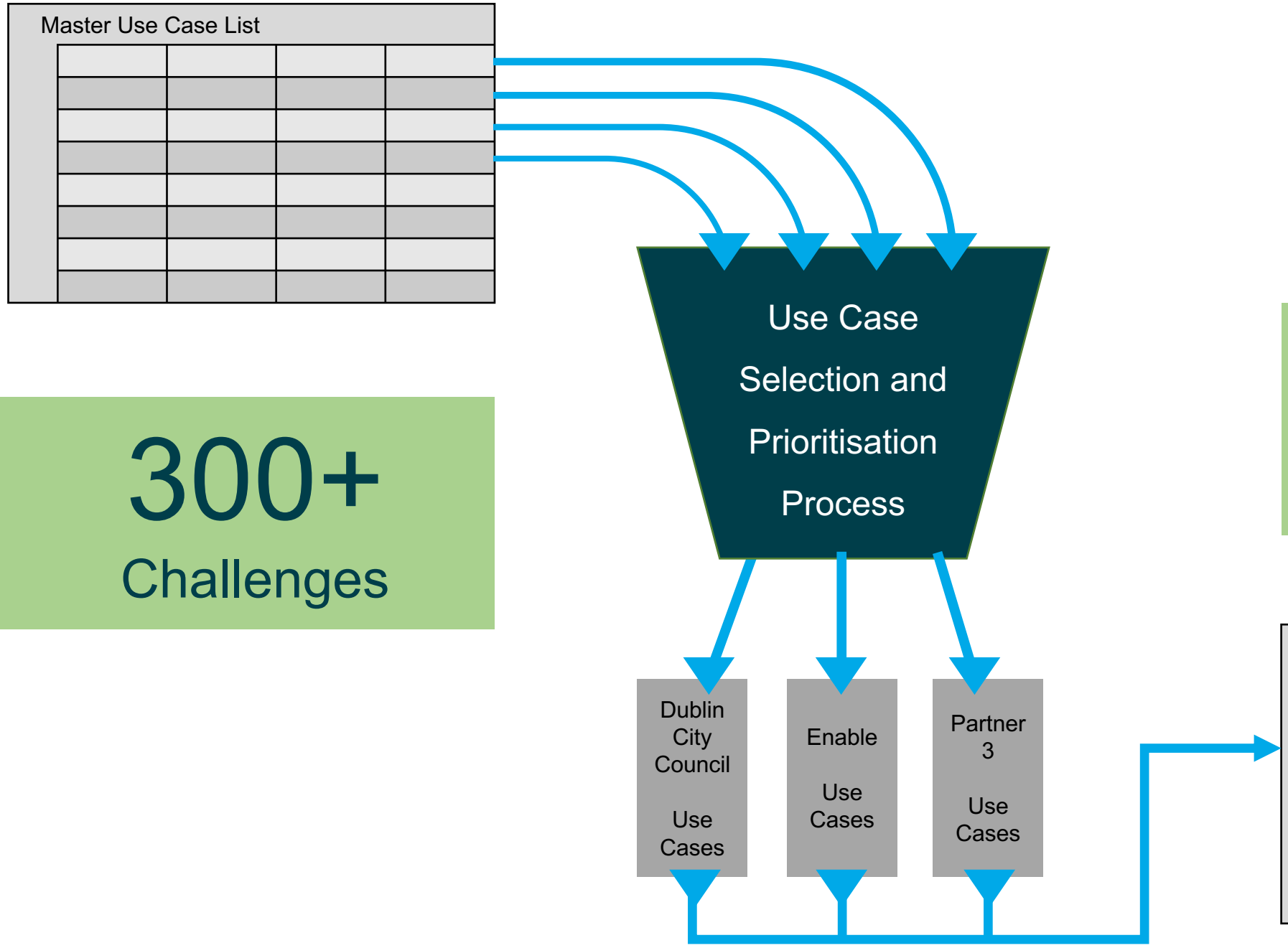
Smart Docklands Workshop Groups

Infrastructure	DCC Internal Engineers, Novegen, Waterways Ireland, Nama
Hospitality & Tourism	3Arena/Live Nation, CHQ, The Marker, NPAS, Grand Canal Hotel, The Gibson Hotel
Residents	St. Andrews, Irishtown & Ringsend, Sheriff Street Residents Committees
Developers & Property	IPUT, Hibernia REIT, Kennedy Wilson, CBRE, WiredScore

6 Workshops
150+ Attendees
Facilitated by
Deloitte.
accenture
FJORD™
Design and Innovation from
Accenture Interactive

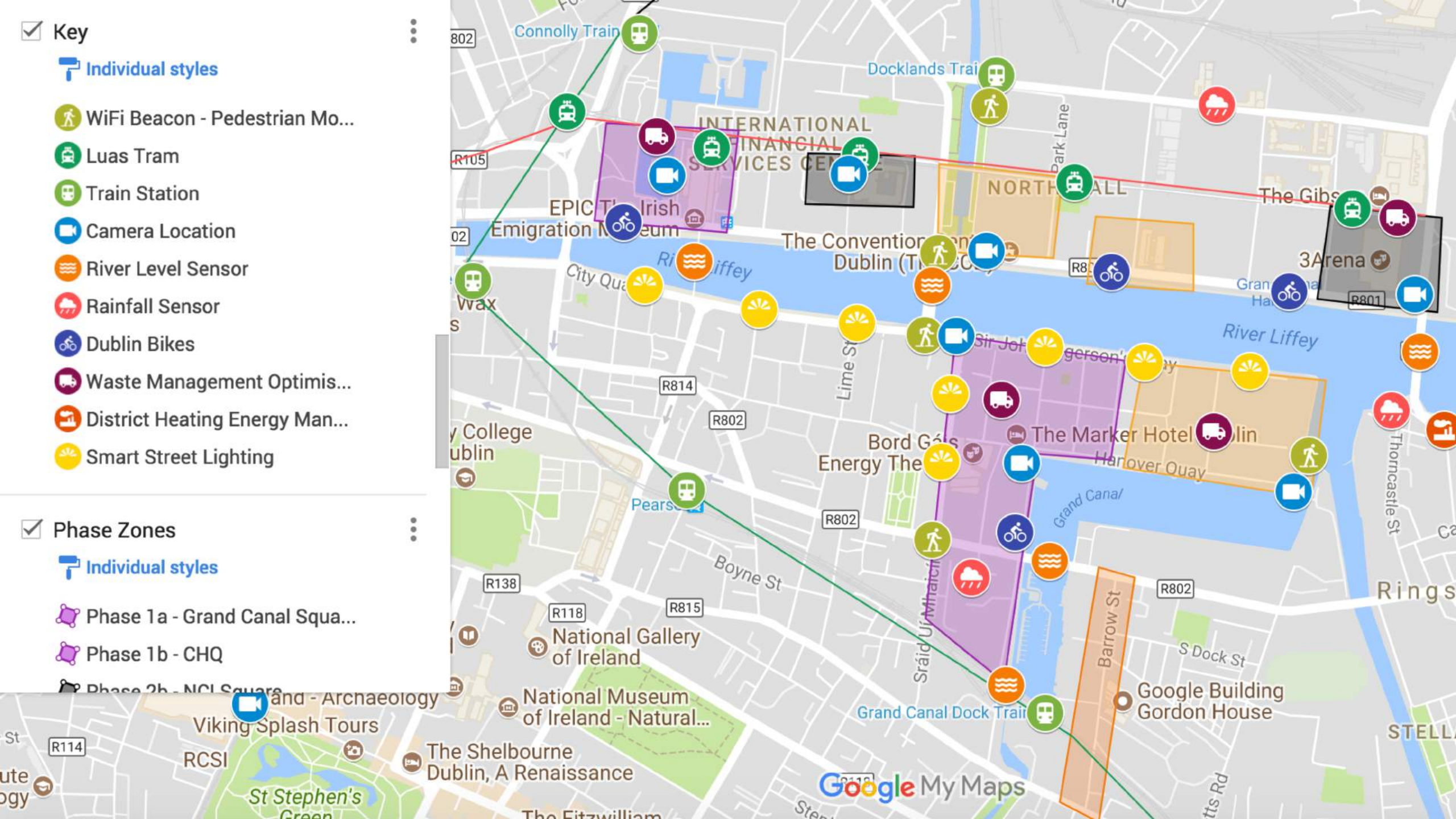


	A	B	C	D	E	F	G	H	I	J	K
1		Details	Origin	Duplicate?							
2	1. Mobility										
3	1.01	Info on be	SD Workshop - Infrastructure								
4	1.02	Luas – Bu	SD Workshop - Infrastructure								
5	1.03	Sensors o	SD Workshop - Infrastructure	*							
6	1.04	Improved	SD Workshop - Infrastructure								
7	1.05	CCTV linke	SD Workshop - Infrastructure	*							
8	1.06	In advanc	SD Workshop - Infrastructure								
9	1.07	Smart app	SD Workshop - Infrastructure								
10	1.08	Traffic ligh	SD Workshop - Infrastructure								
11	1.09	Cycling –	SD Workshop - Infrastructure								
12	1.10	Cycling –	SD Workshop - Infrastructure								
13	1.11	Journey da	SD Workshop - Infrastructure								
14	1.12	Bikes on p	SD Workshop - Infrastructure								
15	1.13	Bike parki	SD Workshop - Infrastructure								
16	1.14	Data - Nur	SD Workshop - Infrastructure								
17	1.15	Data - Ori	SD Workshop - Infrastructure								
18	1.16	Data shari	SD Workshop - Infrastructure								
19	1.17	Opportuni	SD Workshop - Infrastructure								
20	1.18	Data on tr	SD Workshop - Infrastructure								
21	1.19	Can differ	SD Workshop - Infrastructure								
22	1.20	Incentives	SD Workshop - [illegible]								
23	1.21	The river i	[illegible]ourism								
24	1.22	Wayfindin	[illegible]								
25	1.23	Relieve co	[illegible]hop - Tourism								
26	1.24	Issue gett	SD Workshop - Tourism								
27	1.25	Patterns o	SD Workshop - Tourism								
28	1.25.1	- People n									
29	1.25.2	- Usage of									
30	1.26	Taxis don'	[illegible] Tourism								
31	1.27	Issue gett	[illegible] Tourism								
32	1.28	Poor signa	SD Workshop - Tourism								
33	1.29	Docklands	SD Workshop - Tourism	*							
34	1.29.1	- Where p									
35	1.30	Smart traf	SD Workshop - Tourism								
36	1.31	Coordinati	[illegible] SD Workshop - Developers								
37	1.32	Link to So	SD Workshop - Developers								
38	1.33	Need bett	SD Workshop - Developers								
39	1.34	Issues wit	SD Workshop - Developers								
40	1.35	Tangible p	SD Workshop - Developers								
41	1.36	Better Airp	SD Workshop - Developers								
42	1.37	Connectivi	SD Workshop - Developers								
43	1.38	User-centr	SD Workshop - Developers								
44	1.39	Lack of fac	SD Workshop - Developers								
45	1.40	River acce	SD Workshop - Developers								
46	1.41	Sheriff Str	SD Workshop - Residents (East Wall/Sheriff Street)								
47	1.42	Lack of bu	SD Workshop - Residents (East Wall/Sheriff Street)								
48	1.43	Lack of cy	SD Workshop - Residents (East Wall/Sheriff Street)								
49	1.44	Heavy traf	SD Workshop - Residents (East Wall/Sheriff Street)								
50	1.44.1	- Where d	dge end up in IFSC)								
51	1.45	Poor air qu	SD Workshop - Residents (East Wall/Sheriff Street)								



300+ Challenges

2 Year Workplan


Key
Individual styles
WiFi Beacon - Pedestrian Mo...
Luas Tram
Train Station
Camera Location
River Level Sensor
Rainfall Sensor
Dublin Bikes
Waste Management Optimis...
District Heating Energy Man...
Smart Street Lighting
Phase Zones
Individual styles
Phase 1a - Grand Canal Squa...
Phase 1b - CHQ
Connolly Train
Docklands Trai
INTERNATIONAL
FINANCIAL
SERVICES CE
NORTH
The Gibs
3Arena
EPIC The Irish
Emigration Museum
The Convention
Dublin (T
River Liffey
City Qua
Wax
Lime St
Bord Gáis
Energy The
The Marker Hotel
Hanover Quay
Grand Canal
Thorncastle St
Pears
Boyne St
Sráid Uí Mhaicí
Barrow St
S Dock St
Rings
National Gallery
of Ireland
National Museum
of Ireland - Natural...
Grand Canal Dock Trai
Google Building
Gordon House
Viking Splash Tours
RCSI
The Shelbourne
Dublin, A Renaissance
St Stephen's
Green
Google My Maps
R105
R814
R802
R801
R138
R118
R815
R114

Engagement

CALLING ALL START-UPS & INNOVATORS

1. ATTEND ONE OF OUR MEET SMART DUBLIN EVENTS
2. OPEN DATA. TELL US WHAT DATA WOULD BE USEFUL FOR YOU
3. ENTER ONE OF OUR SBIR CHALLENGES
4. TEST YOUR SOLUTION IN DUBLIN'S TESTBED

@Dublinked

Innovative Procurement

SBIR

Challenges

NEW WAYS OF SOURCING INNOVATION

Working in partnership with Enterprise Ireland through the SBIR programme to find solutions for:

- CYCLING
- FLOODING
- WAYFINDING
- ILLEGAL DUMPING

SBIR Challenges

€1M+ INNOVATION FUNDING

273 EXPRESSIONS OF INTEREST

63 APPLICATIONS

21+ INNOVATION CONTRACTS

THE LAST MILE DELIVERY

SEEKING SMART SOLUTION TO OPTIMISE DELIVERIES...

SMART DUBLIN

CHALLENGE:

OPTIMISING DELIVERIES THROUGH SMART LOGISTICS

REDUCE GOODS VEHICLES IN URBAN CENTRES

SUPPORTING LOGISTIC REQUIREMENTS

REDUCE EMISSIONS, NOISE POLLUTION AND CONGESTION

APPLY HERE: WWW.SMARTDUBLIN.IE

€200,000 IN FUNDING AVAILABLE

ENTERPRISE IRELAND

Comhairle Contae Átha Cliath Theas South Dublin County Council

Comhairle Cathrach Bhaile Átha Cliath Dublin City Council

dlr Comhairle Contae County Council

Comhairle Contae Fhine Gall Fingal County Council

SMART MOBILITY HUBS

SEEKING SMART, LOW COST SOLUTION...

SMART DUBLIN

CHALLENGE:

DELIVERING SMARTER

WORKPLACE MOBILITY FOR STAFF,

REDUCING EMISSIONS

INTEGRATION OF E-CARS, E-BIKES, PUSH BIKES

NEW BUSINESS MODELS, OPEN STANDARDS

ABILITY TO REPLICATE IN OTHER LOCATIONS

APPLY HERE: WWW.SMARTDUBLIN.IE

€200,000 IN FUNDING AVAILABLE

ENTERPRISE IRELAND

Comhairle Contae Átha Cliath Theas South Dublin County Council

Comhairle Cathrach Bhaile Átha Cliath Dublin City Council

dlr Comhairle Contae County Council

Comhairle Contae Fhine Gall Fingal County Council

Who's going to fund all of this?

€2m
Dashboard

€3bn
Private Investment

€14m
Enable

SBIR

H2020

Thank you for listening.

Any Questions?

Visit our new website for more info **www.SmartDocklands.ie**

SMART DOCKLANDS
A Smart Dublin District

Part of SMART DUBLIN

Supported by URBACT
Driving change for better cities

THE WORLD'S MOST CONNECTED BUSINESS & LIVING DISTRICT