



WWW.SMARTDOCKLANDS.IE  
@SMARTDOCKLANDS

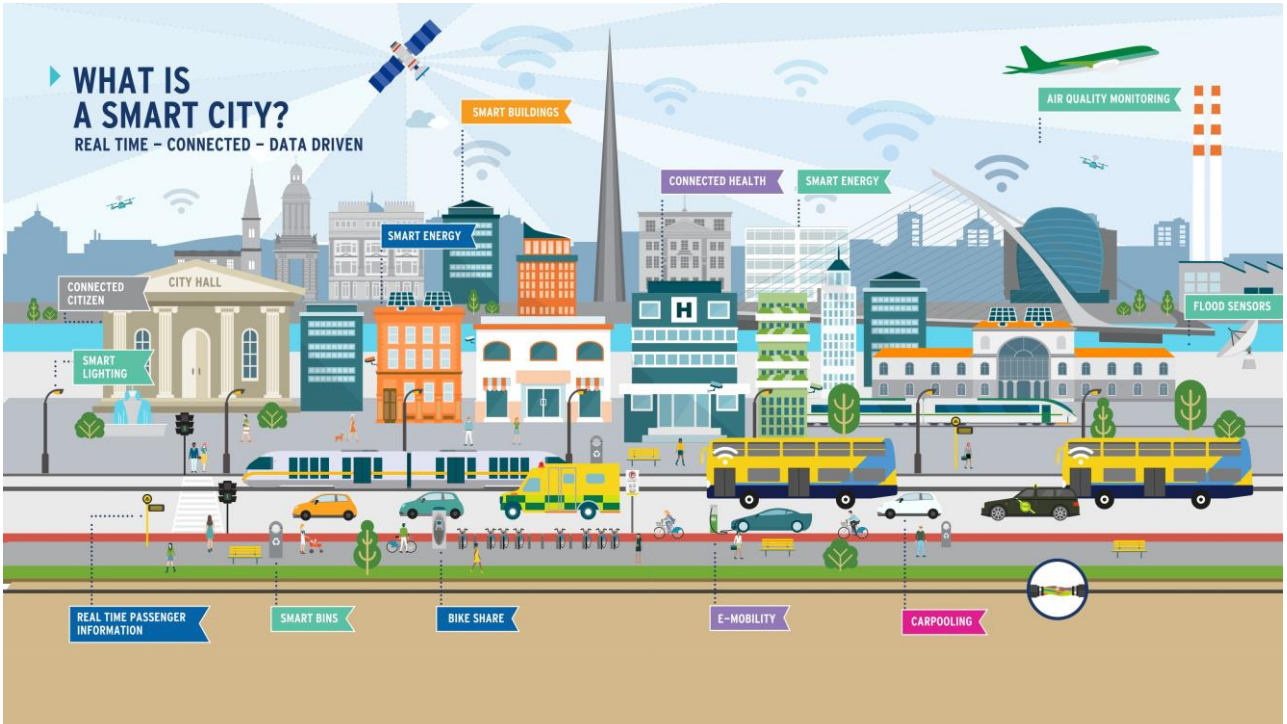
# LOCAL ACTION PLAN: DELIVERING A SMART DISTRICT THROUGH CITY TO CITY COLLABORATION



## 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.



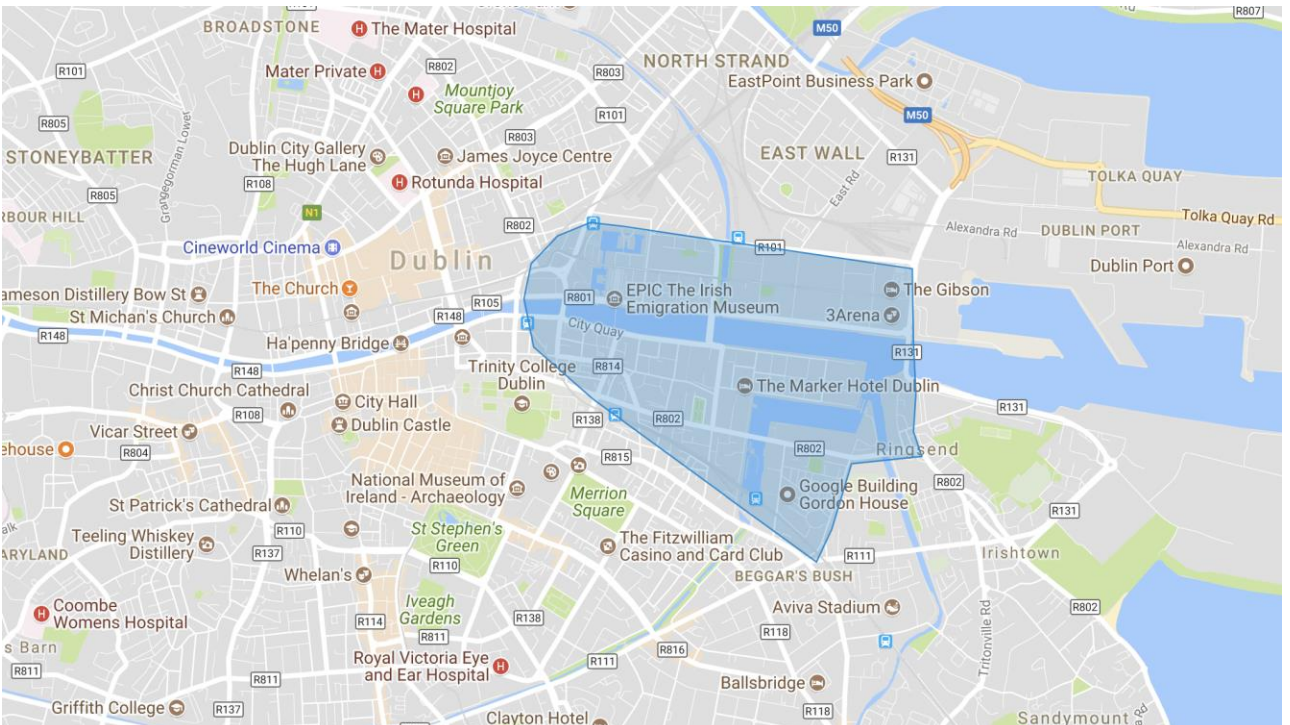


# Smart City tech has arrived in Dublin City...



# ► DUBLIN AS A TESTBED

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



44,000  
Employed



26,000  
Residents

9%

€3bn



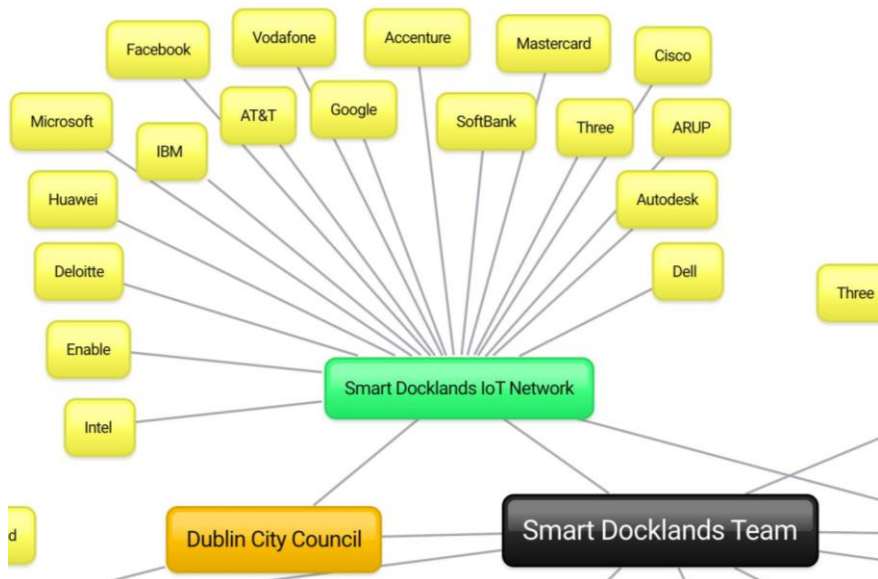
Investment

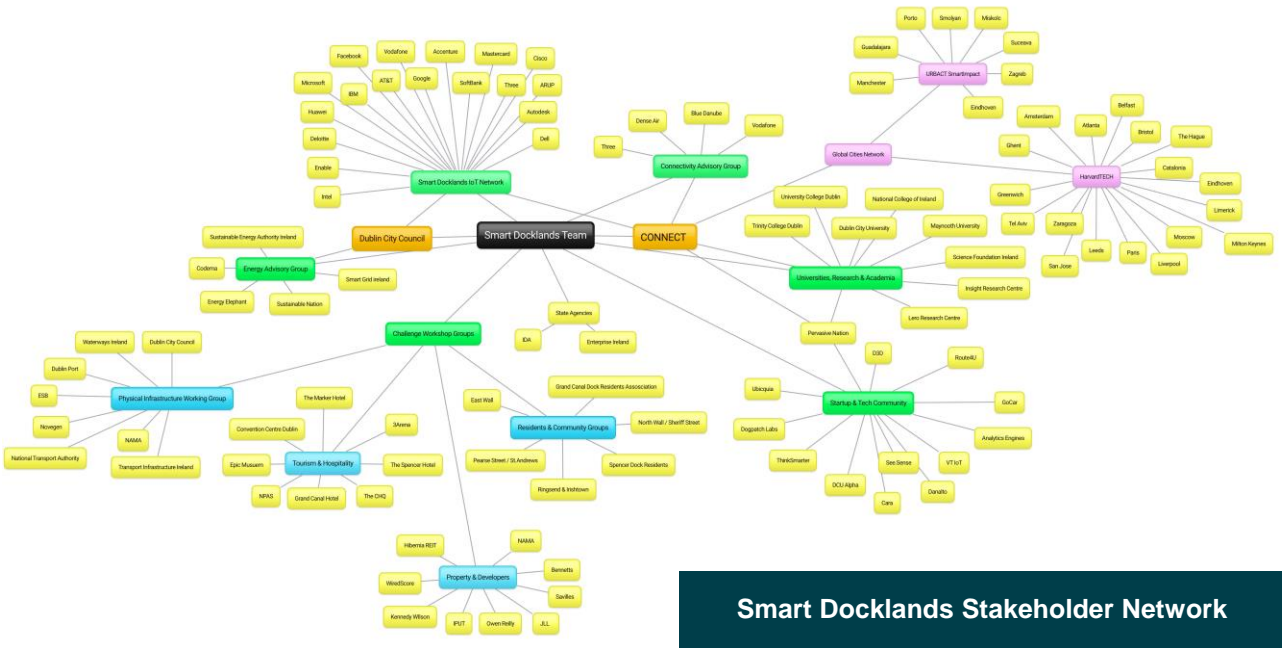


Home to  
over 500  
businesses

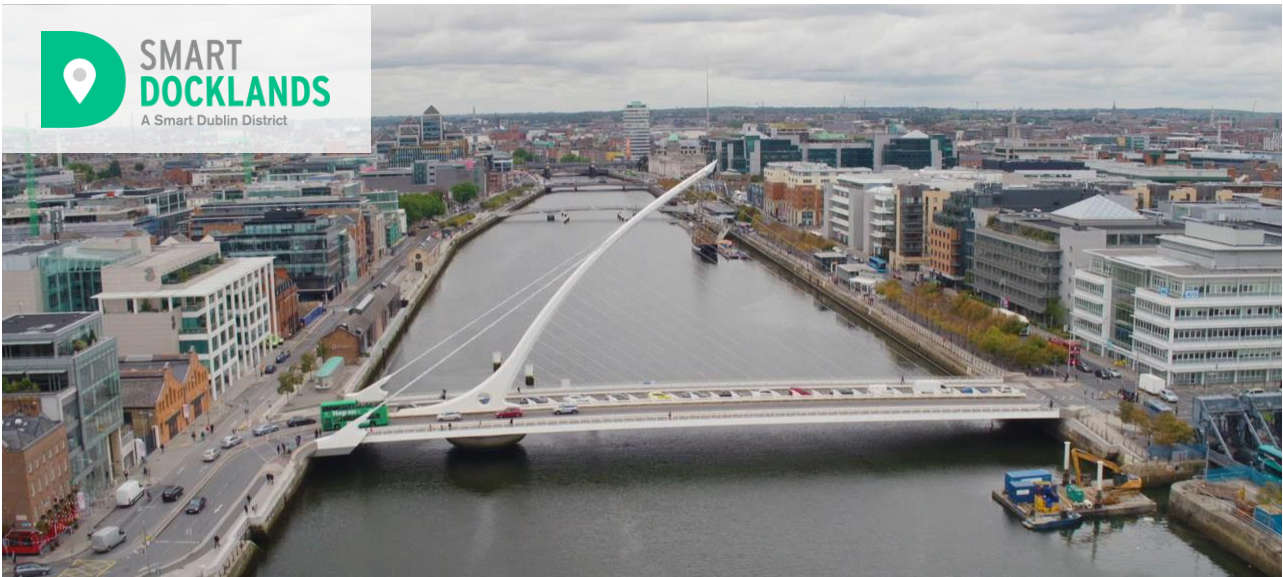


# Smart Docklands IoT Network



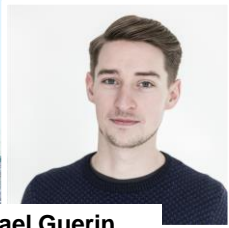


Smart Docklands Stakeholder Network



## The Smart Docklands Team

### Dublin City Council – CONNECT – Enable



Michael Guerin



Taja Naidoo



Jamie Cudden



Comhairle Cathrach  
Bhaile Átha Cliath  
Dublin City Council



Siobhán Clarke



Linda Doyle



# Smart Docklands Structure

1. Connectivity Infrastructure
2. Use Cases / Projects
3. Engagement

# Connectivity as a Baseline

## Connectivity Infrastructure

### LPWAN



### Cellular





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

# Pervasive Nation

Ireland's Internet of Things Testbed.



**DENSE AIR**  
Mobile Networks Enhanced and Extended

Proven, Cost Effective  
**INDOOR**  
Network Penetration

Extending Network reach to  
**RURAL**  
Areas

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

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

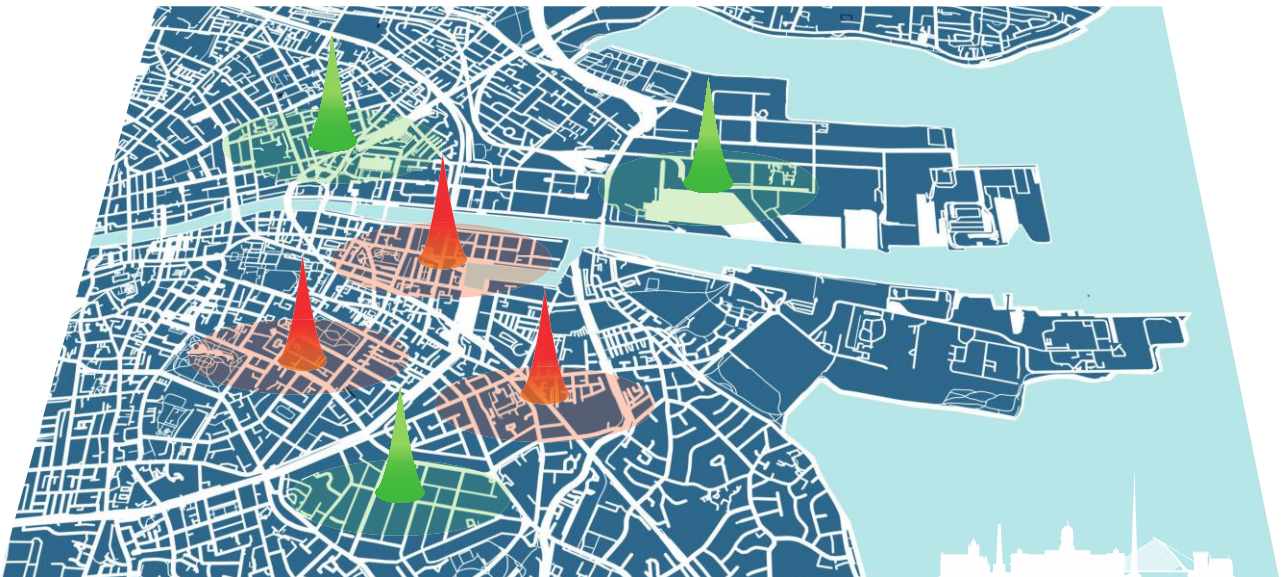
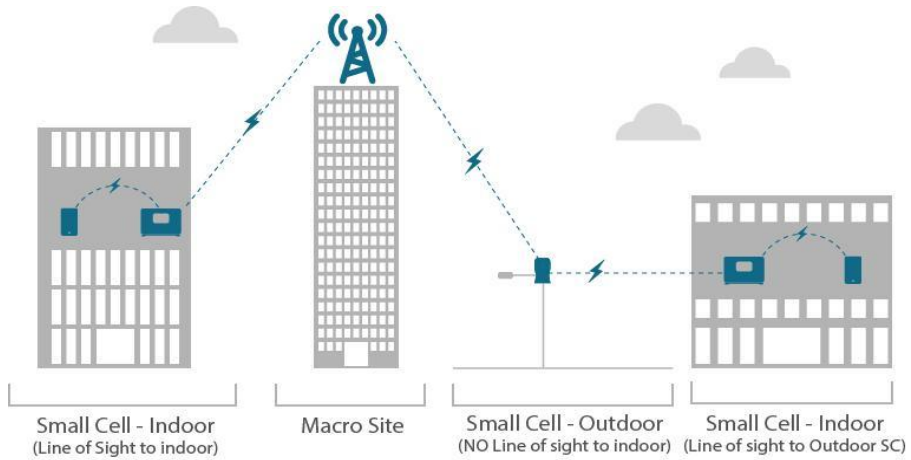


**COVERAGE & CAPACITY SHORTFALL**

**With data driving consumption...**  
Mobile Network Operators are struggling to keep up with end user demand and expectation

**DENSE AIR**

# Smart Docklands - Small Cells



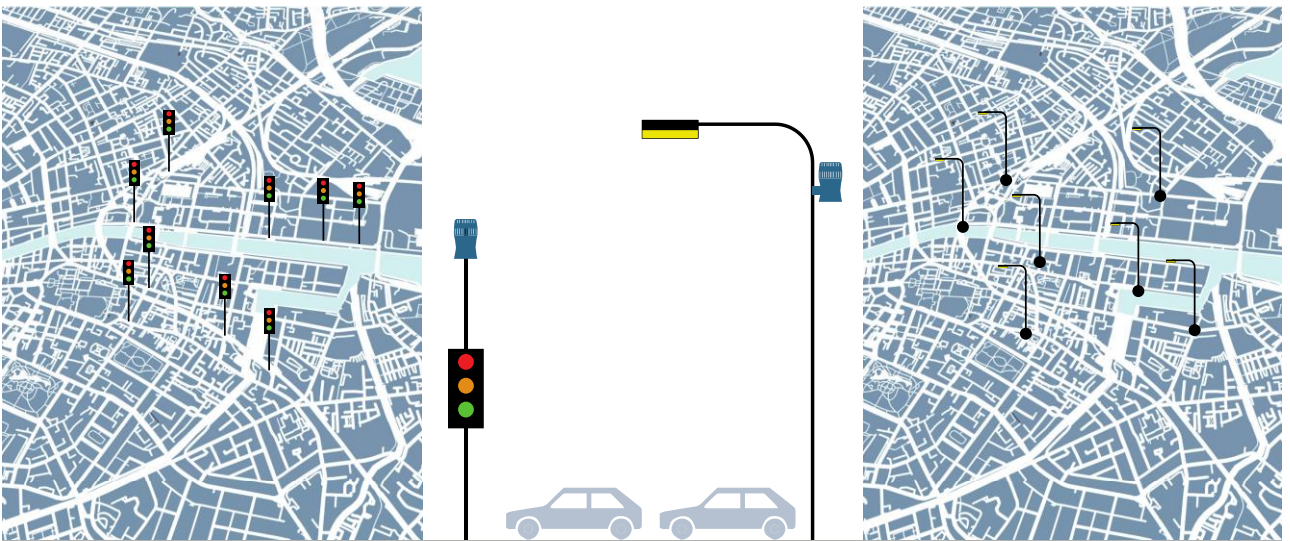
**Move away from...**  
Current coverage and capacity limitations - particularly in dense urban areas..

**DENSE AIR**



**Move toward...**  
Targeted small cells deployment - providing greater capacity & spectral efficiency

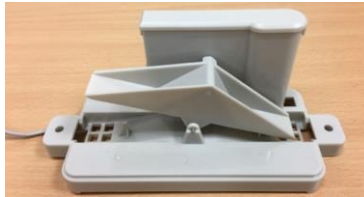
## DENSE AIR



**Outdoor Densification...**  
Utilising DCC Street assets, providing a pervasive layer, enabling smart city services

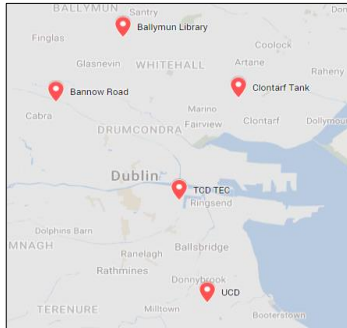
## DENSE AIR

# Use Cases / Projects





## Start of Year 1



## End of Year 1



## OPERANDUM

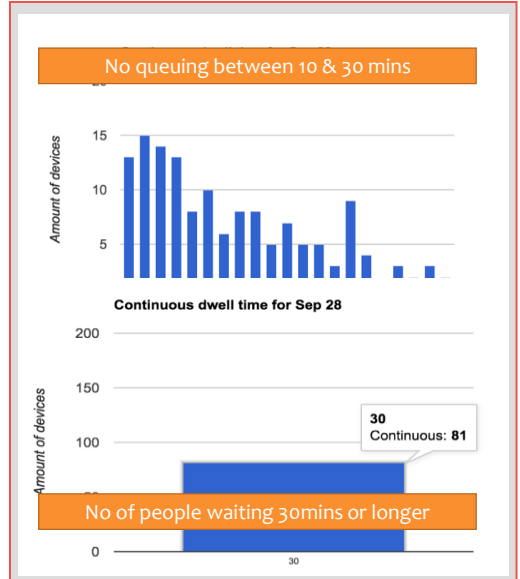
Open-Air Laboratories For Nature Based Solutions To Manage Environmental Risks

- Dr. Francesco Pilla was able to utilise to existing structure of the Flooding Project to access EU H2020 Funding
- Total Funding received: €800,000

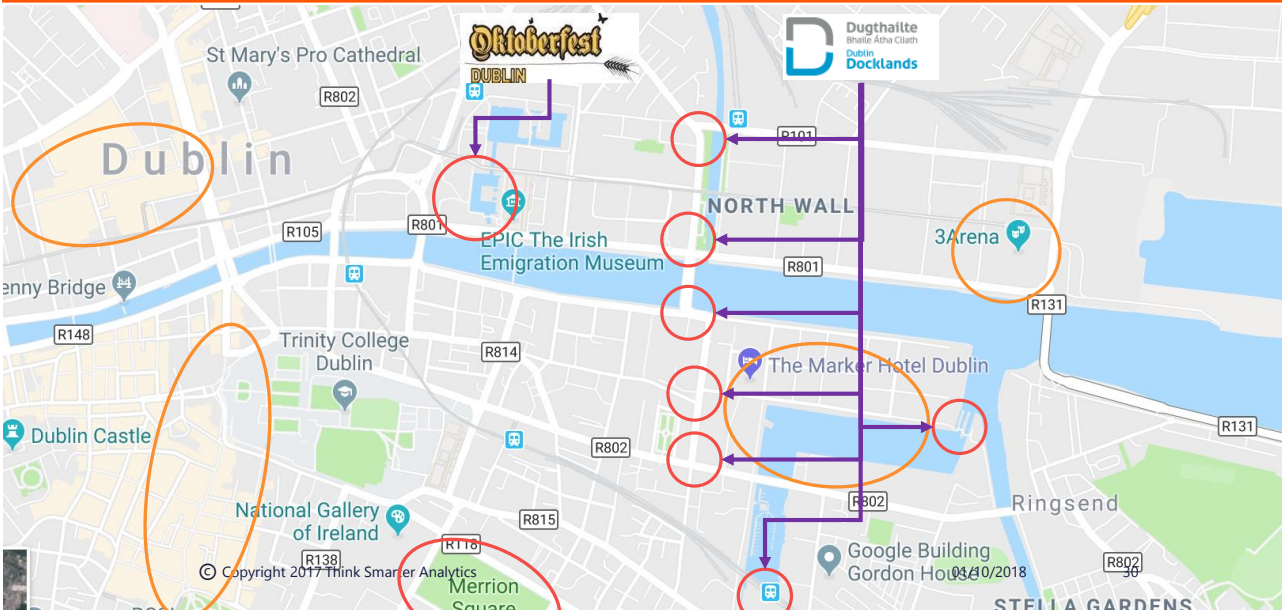


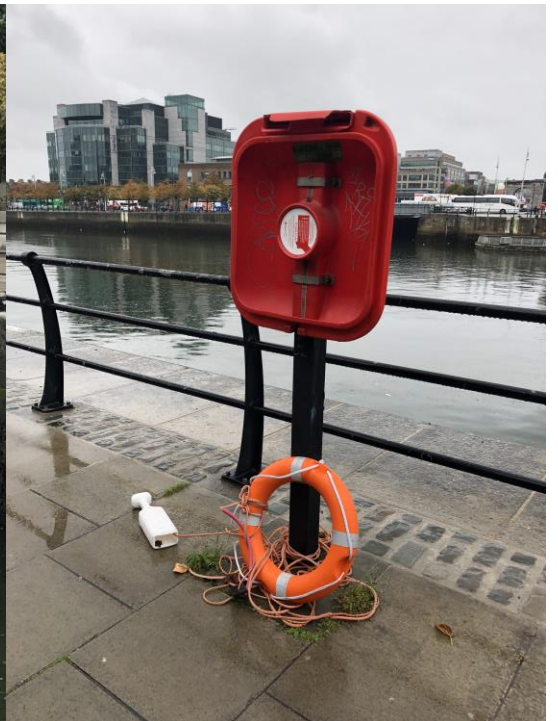
Horizon 2020  
European Union funding  
for Research & Innovation

**THiK** SMARTER ANALYTICS  
 Analysis of queue times 28<sup>th</sup> September 2017



**THiK** SMARTER ANALYTICS  
 Advanced Footfall Analytics using IoT & WiFi in Dublin Today







21<sup>ST</sup> - 22<sup>ND</sup> SEPTEMBER 2018

# The Future of Mobility

## Ireland's First Driverless Shuttle

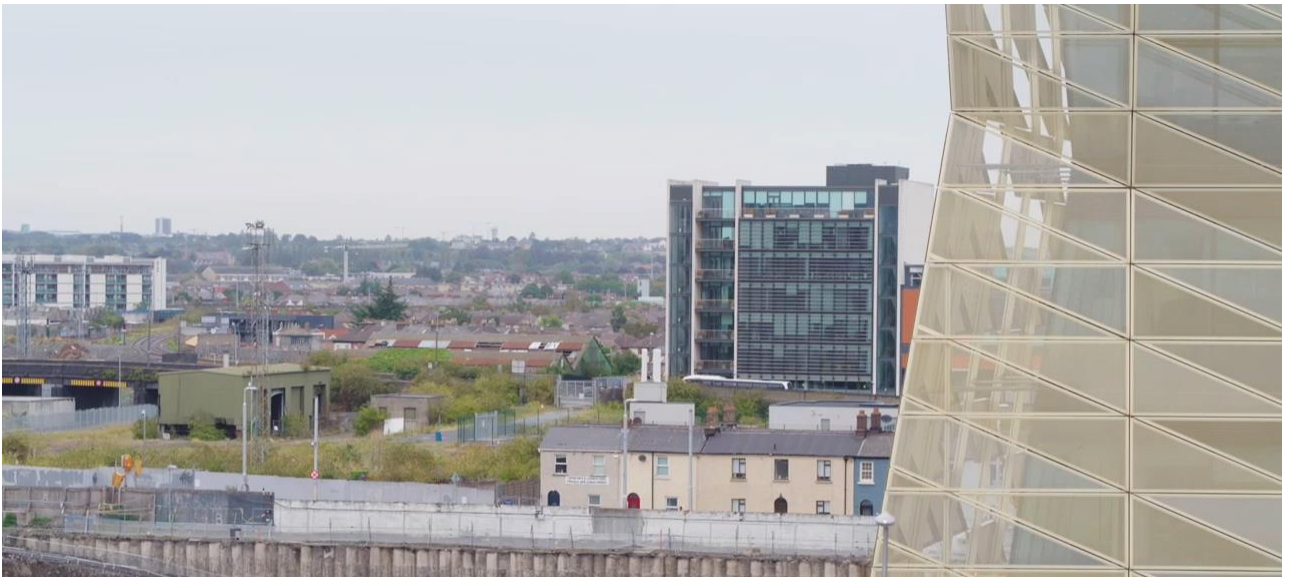
Join us on a journey to explore the future of smart and sustainable transport.



Comhairle Cathrach  
Bhaile Átha Cliath  
Dublin City Council



#smartdocklands



Comhairle Cathrach  
Bhaile Átha Cliath  
Dublin City Council



# Engagement

# Engagement

01

With Communities

02

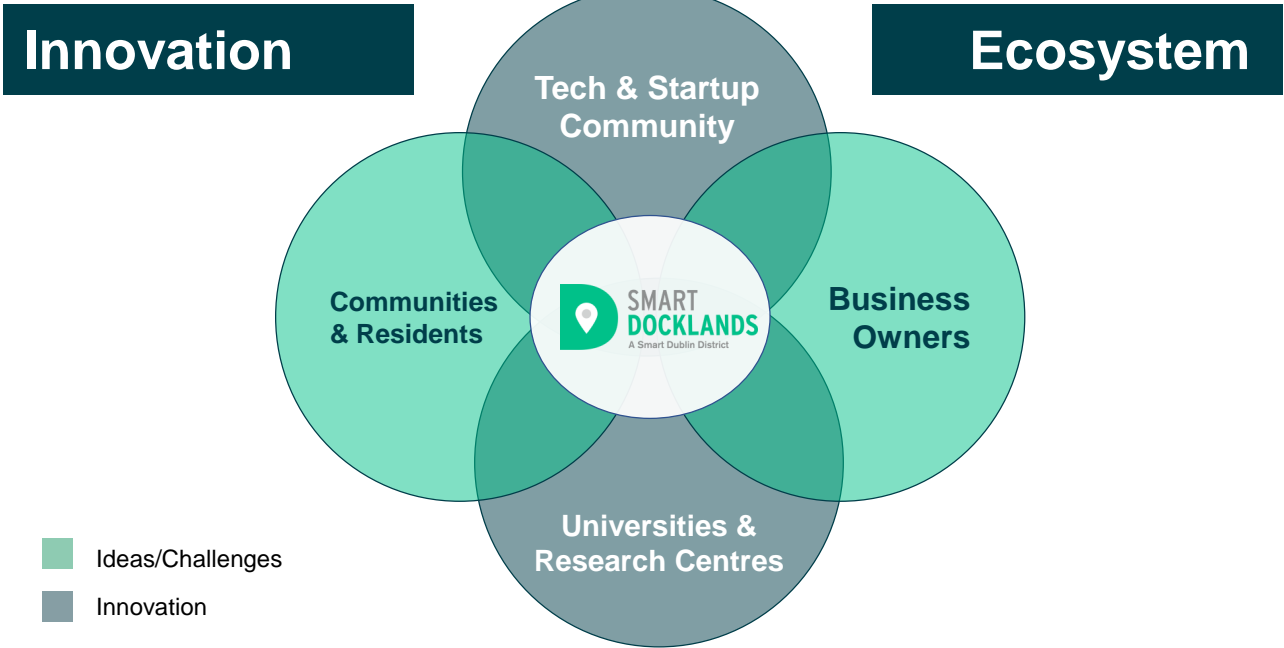
With the Market

# Engagement

01

## With Communities

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	NBLoT	
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		



## Smart Docklands Workshop Groups

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



**6 Workshops**  
**150+ Attendees**

**Facilitated by**  
**Deloitte. > accenture**

**FJORD™**  
Fjord and Innovation from  
Accenture Interactive

1	A	B	C	D	E	F	G	H	I	J	K
1	Details		Origin	Duplicate?							
2	<b>1. Mobility</b>										
3	1.01 Info on best traffic routes to work		SD Workshop - Infrastructure								
4	1.02 Luas - Bus integrated services if one not running		SD Workshop - Infrastructure								
5	1.03 Sensors on buses to report potholes		SD Workshop - Infrastructure	*							
6	1.04 Improved park & ride facilities		SD Workshop - Infrastructure								
7	1.05 CCTV linked to emergency services - mapping routes to avoid traffic		SD Workshop - Infrastructure	*							
8	1.06 In advance of junction - info on lane to get into		SD Workshop - Infrastructure								
9	1.07 Smart apps for wheel chair accessible buses.		SD Workshop - Infrastructure								
10	1.08 Traffic lights - stay green if no traffic in other direction or pedestrians		SD Workshop - Infrastructure								
11	1.09 Cycling - Map of available spaces.		SD Workshop - Infrastructure								
12	1.10 Cycling - improved segregation traffic.		SD Workshop - Infrastructure								
13	1.11 Journey data - Measuring the number of cyclists on routes		SD Workshop - Infrastructure								
14	1.12 Bikes on public transport		SD Workshop - Infrastructure								
15	1.13 Bike parking		SD Workshop - Infrastructure								
16	1.14 Data - Number of people travelling into the area each day & Method of transport		SD Workshop - Infrastructure								
17	1.15 Data - Origin and destinations		SD Workshop - Infrastructure								
18	1.16 Data sharing between port & city to coordinate trucks arrival and departure etc		SD Workshop - Infrastructure								
19	1.17 Opportunity for Citymapper		SD Workshop - Infrastructure								
20	1.18 Data on traffic coming from port, M50 tunnel, Dublin bike usage, buses at peak times		SD Workshop - Infrastructure								
21	1.19 Can different types of cycle paths be trialed in the Docklands? Are there options for c		SD Workshop - Infrastructure								
22	1.20 Incentives to switch people from cars to public transport/ cycling? Sponsors?		SD Workshop - Infrastructure								
23	1.21 The river is a wasted asset when compared to other cities.		SD Workshop - Tourism								
24	1.22 Wayfinding from Connolly Station		SD Workshop - Tourism								
25	1.23 Relieve congestion during peak times.		SD Workshop - Tourism								
26	1.24 Issue getting taxis after shows in 3 Arena		SD Workshop - Tourism								
27	1.25 Patterns of people movement		SD Workshop - Tourism								
28	1.25.1 - People movement from Airport to City to understand the		SD Workshop - Tourism								
29	1.25.2 - Usage of tourist attractions - what % visit		SD Workshop - Tourism								
30	1.26 Taxis don't come to docklands area at peak times		SD Workshop - Tourism								
31	1.27 Issue getting taxis/transport from Grand Canal Dock		SD Workshop - Tourism								
32	1.28 Poor signage means it is difficult getting from Connolly		SD Workshop - Tourism								
33	1.29 Docklands cultural trail - smart way to get to the area (or online app visit)		SD Workshop - Tourism								
34	1.29.1 - Where people go to events and end times of events in 3 Arena.		SD Workshop - Tourism								
35	1.30 Smart traffic routing		SD Workshop - Developers								
36	1.31 Coordination between developers, e.g. aligning on timing of concrete truck movement		SD Workshop - Developers								
37	1.32 Link to South City over Docks - pedestrian, bicycle, public transport		SD Workshop - Developers								
38	1.33 Need better links north & south of Liffey - pedestrian, bicycle, public transport		SD Workshop - Developers								
39	1.34 Issue with 'working & basement parking		SD Workshop - Developers								
40	1.35 Tangible port/city integration		SD Workshop - Developers								
41	1.36 Better Airport connection		SD Workshop - Developers								
42	1.37 Connectivity to Dublin Port Greenway (planned)		SD Workshop - Developers								
43	1.38 User-centred view on transport - mobility as a service		SD Workshop - Developers								
44	1.39 Lack of facilities for electric cars		SD Workshop - Developers								
45	1.40 River access - distance between bridges		SD Workshop - Developers								
46	1.41 Sheriff Street is the IFSC's carpark		SD Workshop - Residents (East Wall/Sheriff Street)								
47	1.42 Lack of bus routes to various parts of the city		SD Workshop - Residents (East Wall/Sheriff Street)								
48	1.43 Lack of cycling facilities		SD Workshop - Residents (East Wall/Sheriff Street)								
49	1.44 Heavy traffic congestion at peak times		SD Workshop - Residents (East Wall/Sheriff Street)								
50	1.44.1 - Where does the traffic coming into the city end up (eg. Z% crossing Rathmines bridge end up in IFSC)		SD Workshop - Residents (East Wall/Sheriff Street)								
51	1.45 Poor air quality owing to high traffic volumes		SD Workshop - Residents (East Wall/Sheriff Street)								

**OVER 300 CHALLENGES**  
**From Smart Docklands workshops**

# Engagement

02

## With the Market



### NEW WAYS OF SOURCING INNOVATION

Working in partnership with Enterprise Ireland through the Small Business Innovation Research (SBIR) programme to find solutions for:

- ▶ CYCLING
- ▶ WAYFINDING
- ▶ LAST MILE DELIVERY
- ▶ BATHING WATER QUALITY
- ▶ UNHEARD VOICES
- ▶ FLOODING
- ▶ ILLEGAL DUMPING
- ▶ MOBILITY HUB
- ▶ IOT

# SBIR

€1.55m

INNOVATION  
FUNDING



652

EXPRESSIONS  
OF INTEREST



133

APPLICATIONS



42

INNOVATION  
CONTRACTS



# 6 STEPS TO BUILDING THE SMART DOCKLANDS DISTRICT



# THE JOURNEY SO FAR



# 6 STEPS TO BUILDING THE SMART DOCKLANDS DISTRICT



01

LEADERSHIP  
&  
GOVERNANCE

02

CONNECTIVITY

03

IDENTIFY  
EXISTING  
ACTIVITY



# 6 STEPS TO BUILDING THE SMART DOCKLANDS DISTRICT



04

STAKEHOLDER ENGAGEMENT WORKSHOPS

05

BUILDING THE BRAND

06

DATA GOVERNANCE AND NEW BUSINESS MODELS



**+€3 BILLION**  
OF NEW INVESTMENT  
UP TO 2020

**26,000**  
RESIDENTS

HOME TO OVER  
**500**  
BUSINESSES

### Success Stories

- Smart Mobility
- Smart Environment
- Smart Infrastructure
- Smart Buildings
- Smart People
- Smart Economy

**44,000**  
EMPLOYEES

COVERING AN  
AREA OF JUST  
**3 KM<sup>2</sup>**



THE MOST CONNECTED DISTRICT IN THE WORLD  
LORA, SIGFOX, NB-IOT, 4G, 5G





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LOCAL ACTION PLAN:  
**DELIVERING A  
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