URBAN CO-CREATION DATA LAB

Nº	**#1**						

Name: Evaluation and prediction of patterns and behaviours of micro mobility in the city of Lisbon

Problem: Micro mobility poses great challenges in the city environment, as nowadays micro mobility is changing how citizens commute in cities. In this sense there is the need to understand and anticipate which are the spatial and temporal patterns of micro mobility commute in the city, along with parking, storage and operations of micro mobility vehicles

Expected outcome: Hourly predictive model of micro mobility commute by spatial unit according with the weather predicted in the day before. The model will provide a probability of starting and ending a trip in each spatial unit. Besides the predicted commute pattern, the model results will be also useful for micro mobility vehicles operation (e.g. reinforce the number of available vehicles in spatial units, that in a certain hour have an higher probability of being registered the start of a trip)

Datasets/ metadata:

Nº	*Dataset*	*Source*	*Access*	*Format*	*Initial date*	*End date*	*Spatial representation*	*Temporal frequency*	*Comments*
	Micro mobility parking	DMM	API	Json (GBFS standard)	1 July 2019	present	point	15 minutes	This dataset provides information about the location and status of micromobility vehicles
	Micro mobility trips	DMM	API	Json (MDS v2.1 standard)	1 January 2018	present	point	Depends on the operator	This data set provides information about the micro mobility vehicles trips
	Gira trips	Open data emel/PGIL							
	Gira stations	Open data emel/PGIL							
	Waze jams	Open data emel/PGIL	via web	Json	1 january 2019	present	line	5 min	This dataset provides information about traffic congestion
	Education facilities	PGIL	via web	Json	-	-	point	-	This dataset provides information about the location of primary schools, high schools and universities
	Transport facilities	PGIL	via web	Json	-	-	point	-	This dataset provides information about the location of train stations, metro stations and boat stations
	Health facilities	PGIL	via Web	Json	-	-	point	-	This dataset provides information about the location of private and public hospitals and health care centers

Climate data	IPMA/PGIL	via web	csv	1 January 2013	present	point	hour	This data set provides information about the climate data in each one of the the three climate stations in the city of Lisbon regarding temperature, precipitation, humidity, wind speed, wind direction and solar radiation
Mobile phone data	Altice/PGIL	via web	Json	13 June 2019	present	point	10 min	This data set provides information about the count of phones connected to the Altice antennas in time intervals of 10 minutes

Nº **#2**

Name: Waste management – analytics to predict patterns in the production of solid urban waste

Problem: Solid waste production and collection, is nowadays a huge challenge for the municipalities. Indeed, waste collection costs range between 40 to 60% of waste management costs and is responsible for the production of 4,2 to 12 kg of CO_2 per tonne of waste. Predicting and understanding the relations between the socio-demographic characteristics and the waste production, will lead to an improvement in the operations efficiency of waste collection and transportation by the municipalities.

Expected outcome: Identify patterns to support the prediction of the production of solid waste in regular and big events days. Hourly predictive model of waste production by spatial unit, according with the socio-demographic profile of the spatial units and the presence of population. The predictive model will be deployed in PGIL, allowing the creation of a service to predict solid waste production a day before, to optimize waste collection in Lisbon.

Datasets/ metadata:

Nº	Dataset	Source	Access	Format	Initial date	End date	Spatial representation	Temporal frequency	Comments
	Filling containers	PGIL	via web	Json	1 january 2019	present	point		This data set provides information about the filling of waste containers, along with information about temperature, time of last collection, type of waste
	Events	PGIL	via web	Json	1 May 2019	present	line	Depends on the events date	This data set provides information about the events that occurred in Lisbon, namely starting and ending date of the event, type, location
	Climate data	IPMA/PGIL	via web	csv	1 January 2013	present	point	hour	This data set provides information about the climate data in each one of the the three climate stations in the city of Lisbon regarding temperature, precipitation, humidity, wind spred, wind direction and solar radiation

Hotel establishments	Lisboa Aberta	via web	Geojson		13 March 2018	point	-	This dataset provides information about the location and category of hotel establishments in Lisbon
Local accomodation	Lisboa Aberta	via web	Json	2 June 2019	20 May 2020	Street name	-	This dataset provides information about the local accommodation licenses assigned in Lisbon
Mobile phone data	Altice/PGIL	via web	Json	13 June 2019	present	point	10 min	This data set provides information about the count of phones connected to the Altice antennas in time intervals of 10 minutes
Waste collection routes (including collection points)	DHURS/PGIL	via web		2018	2019	Lines/points		
Waste freight weighing	DHURS/PGIL	via web		2018	2019			

Nº | **#3**

Name: Identification of patterns and explanatory factors for complaints from municipalities, registered in the application "Na minha rua LX"

Problem:

Expected outcome:

Datasets/ metadata:

Nº	Dataset	Source	Access	Format	Initial date	End date	Spatial representation	Temporal frequency	Comments
	GOPI occurrences	PGIL							
	Agenda Cultural	Lisboa Aberta							
	Mobile phone data	Altice/PGIL	via web	Json	13 June 2019	present	point	10 min	This data set provides
	Climate data	IPMA/PGIL	via web	csv	1 January 2013	present	point	hour	This data set provides
	Waze jams	Open data emel/PGIL	via web	Json	22 April 2019	present	line	5 min	This dataset provides
	Transport facilities	PGIL	via web	Json	-	-	point	-	This dataset provides
	Education facilities	PGIL	via web	Json	-	-	point	-	This dataset provides
	Health facilities	PGIL	via Web	Json	-	-	point	-	This dataset provides

Nº **#4**

Name: Pollution – Predictive analytics for propagation of pollution in cities

Problem: As there is an increase in people living in cities, is growing an increase concern regarding atmospheric pollution. Indeed, there is lack of information regarding liquid and atmospheric pollutants and how they affect citizens health. There is the need to estimate pollutants propagation in the city to assess possible impacts of pollution in the city environment.

Expected outcome: Pollution simulator in an area of one square km, with a temporal resolution of 15 minutes

Datasets/ metadata:

Nº	Dataset	Source	Access	Format	Initial date	End date	Spatial representation	Temporal frequency	Comments
	Air quality - Pollutrack	ChronoPost							
	Climate data	IPMA/PGIL	via web	csv	1 January 2013	present	point	hour	This data set provides information about the climate data in each one of the the three climate stations in the city of Lisbon regarding temperature, precipitation, humidity, wind speed, wind direction and solar radiation
	3D City model	CML		shapefile	-	-	3D polygon	-	
	Digital elevation model			raster	-	-	-	-	
	Waze jams	Open data emel/PGIL	via web	Json	22 April 2019	present	line	5 min	This dataset provides information about traffic congestion
	Trees	Lisboa Aberta	via web	shapefile	-	-	point	-	This dataset provides information about urban trees location, perimeter at breast height, height, age and local of implementation
	Parks and gardens	Lisboa Aberta	via web	shapefile	-	-	polygon	-	This dataset provides information about the location of Lisbon gardens and parks

Air quality database	APA/PGIL	via web	xls	1 January 1992	31 December 2018	-	hour	This data set provides information about several pollutants (SO_2, PM10, O_3, NO_2, NO, CO, C_6H_6 and PM2.5) in three stations for the city of Lisbon: 1) Entrecampos: urban-traffic; 2) Avenida da Liberdade: urban-traffic; and 3) Olivais: urban-background, with their respective location
Estabelecimentos SEVESO	APA/PGIL							
Drainage network	DMMC/DS		Geojson			Lines/points		

Nº | **#5**

Name: Predictive analytics for impact of big sporting events in the city mobility

Problem:

Expected outcome:

Datasets/ metadata:

Nº	Dataset	Source	Access	Format	Initial date	End date	Spatial representation	Temporal frequency	Comments
	Events	PGIL	via web	Json	1 May 2019	present	line	Depends on the events date	This data set provides information about the events that occurred in Lisbon, namely starting and ending date of the event, type, location
	Mobile phone data	Altice/PGIL	via web	Json	13 June 2019	present	point	10 min	This data set provides information about the count of phones connected to the Altice antennas in time intervals of 10 minutes
	Climate data	IPMA/PGIL	via web	csv	1 January 2013	present	point	hour	This data set provides information about the climate data in each one of the three climate stations in the city of Lisbon regarding temperature, precipitation, humidity, wind speed, wind direction and solar radiation
	Waze jams	Open data emel/PGIL	via web	Json	22 April 2019	present	line	5 min	This dataset provides information about traffic congestion
	Transport facilities	PGIL	via web	Json	-	-	point	-	This dataset provides information about the location of train stations, metro stations and boat stations
	Education facilities	PGIL	via web	Json	-	-	point	-	This dataset provides information about the location of primary schools, high schools and universities

Health facilities	PGIL	via Web	Json	-	-	point	-	This dataset provides information about the location of private and public hospitals and health care centers
Public transportation network	Transporlis							
Public transportation schedules	Transporlis							