Summary

1. Brief Summary of EIT Urban Mobility
2. Early Birds Projects
3. Call 2020. Selected Projects
4. Preparation for Call 2021

Additional Information
1. Brief Summary of EIT Urban Mobility
Creation: March 2008 by the European Parliament and Commission (Horizon 2020)

Mission:
- to boost Europe’s innovation capacity
- to foster its sustainable economic growth and job creation merging the best innovative nodes in Europe
- to be the open innovation hub for a radical change in European innovative capacity
  - from idea to product
  - from laboratory to market
  - from student to entrepreneur
- to be a start-up accelerator

Tool:
The Knowledge Innovation Communities (KICs) bring together the knowledge triangle of business, education and research to form dynamic cross border partnerships
- each KIC is an independent legal entity
- each KIC consists of 5-6 “colocation centers” or Innovation Hubs with max. 50 partners in total
- There is a managing Head Quarter for every KIC
- duration: min. 7 years with annual business plans
Existing KICs

In September 2017, the EIT Community brought together more than 1000 partners, including:

- **578** companies, including SMEs
- **199** higher education institutions
- **152** research centres
- **83** cities, regions and NGOs

Our results. More than:

- **2242** business ideas
- **305** innovative start-ups
- **1232** knowledge transfers and adoptions
- **430** new products and services
- **1224** graduates completing EIT degree programmes

NEW KICS 2019
- KIC on Urban Mobility
- KIC on Added-Value Manufacturing
EIT Urban Mobility Partners

Figure C-3: EIT Urban Mobility partnership 2019
• **ICH South Partners CORE Partners T1**
  • UPC, CARNET, Ajuntament BCN, SEAT, CTAG, Amadeus, EPFL
• **New Partners CORE Partners T1?**
  • AMB, UPF, RACC, ETRA
• **Affiliate partners?**
  • I2CAT, BSC, IDIADA

Figure C-6: EIT Urban Mobility Innovation Hubs
2. Early Bird Projects
Early Bird Projects (2019)

- **Education Projects (UPC Involvement)**
  - Innovacity
  - MOOC 5G
  - Master School Activities

- **Innovation Projects**
  - Only 3 projects for the whole consortium. UPC was not involved in these projects
3. Call 2020 Selected Projects
Call 2020

• Education Projects (UPC Involvement)
  • Boost I&E Project
  • Research Leadership Project
  • CITYTHON
• Innovation Projects
  • PRO-MaaS: Policies and Regulations required for enabling the MaaS concept
  • ANTI-TRASH: Smart trash detection and damage prevention for shared mobility
  • MOBY: Living lab e-micromobility
  • CAROLINA: Real-time pollution City mAp thRough cOLlaborative sensIng aNd Analysis
  • OSCAR: an Off-Street parking floating CARsharing service
  • CityFlows: Decision-support system for pro-active crowd management of crowded urban spaces
  • SMUD: Shared micro depots for urban pickup and delivery
  • Traffic Light Priority System (TLPS) for Public Transport
  • Virtual Mobility Lab
  • Dynamic Parking Innovation
  • MaaS HUBS: Smart Mobility for seamless urban mobility
• Business Creation
  • UPC leads an Accelerate Program for EITUM South Region (UPC, CiT-UPC, UPF, CTAG and barcelona City)
# of Activities and Budget  2020
top 30 partners

+ Accelerate Program for EITUM South Region:

UPC Budget= 321k€/715k€ (2020: 123k€ - 2021: 153k€ - 2022: 45k€)
A. Project Cicle (Calendar)
B. Funding Concept
C. KIC Complementary Activities (KCA): How?
D. Types of Partners
E. Elements of the Call 2020 (probably also in Call 2021)
F. First Ideation Projects at UPC (presented in Prague. September 2019)
G. Challenges addressed - City Projects
H. Matchmaking Event in December
I. Lessons learnt. Strategic Partners
A. Project Cicle (Calendar)
# EIT Urban Mobility Annual Project Cycle:
## Ideation – Planning – Execution

<table>
<thead>
<tr>
<th>Semester</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n - 1</strong></td>
<td>Finalization of ideation</td>
<td>Selection of topics</td>
<td>Budget indication n+1</td>
<td>Call for Projects</td>
</tr>
<tr>
<td><strong>current year (n)</strong></td>
<td>Proposal evaluation &amp; selection</td>
<td>BP n+1 creation</td>
<td>BP n+1 submission</td>
<td>Preparation of project kick off</td>
</tr>
<tr>
<td><strong>n + 1</strong></td>
<td>Kick off</td>
<td>Project duration up to 2 years</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Ideation
- Match-making
- Match-making
- Info workshop
- Match-making
- Match-making
- Match-making
- Match-making

### Reporting & Monitoring
- **BP2020**
  - Reporting to KIC
  - EIT UM internal reporting
- Reporting to KIC
  - EIT UM internal reporting

### Assessment & Follow-up
- Impact Assessment, Follow-up
- Impact Assessment, Follow-up
B. Funding Concept
Unique Funding Concept
Funding Structure of KIC Activities

EIT: “Add value to what already exists”

EIT Partner bring their own resources in terms of existing activities/contributions (KCA)

EIT will build on the resource and develop activities/project to leverage partner’s contribution (KAVA)

The EIT will only fund these (added value) activities (KAVA)

EIT’s on-top funding amount to max. 25% of total costs (however, KAVA can be funded up to 100%)
C. KIC Complementary Activities (KCA): How?
Repte social 4: **Smart, green and integrated transport**

Opció 1.

- Data limit primera fase: 9/01/2020
- Topics:
  - Cities as climate-resilient, connected multimodal nodes for smart and clean mobility: new approaches towards demonstrating and testing innovative solutions
  - Decarbonising long distance shipping
  - Understanding and mitigating the effects on public health of emerging non-regulated nanoparticle emissions issues and noise
  - Enhancing coordination between Member States' actions in the area of infrastructure research with a particular focus on biodiversity and ameliorating environmental impacts and full automated infrastructure upgrade and maintenance
  - Network and traffic management for future mobility
  - Improving road safety by effectively monitoring working patterns and overall fitness of drivers
- Data limit segona fase: 8/09/2020
Repte social 4: **Smart, green and integrated transport**

Opció 2.

- Data limit: 21/04/2020
- Topics:
  - Cities as climate-resilient, connected multimodal nodes for smart and clean mobility: new approaches towards demonstrating and testing innovative solutions
  - Enhancing coordination between Member States' actions in the area of infrastructure research with a particular focus on biodiversity and ameliorating environmental impacts and full automated infrastructure upgrade and maintenance
  - Coordination and support for an integrated freight transport and logistics system
  - The effects of automation on the transport labour force, future working conditions and skills requirements
  - Innovative electric network architectures and systems, optimising global energy, electrical power, data and communication for aviation
Repte social 4: **Smart, green and integrated transport**

Opció 2.

- Data limit: 21/04/2020
- Topics:
  - Towards sustainable urban air mobility
  - 'First of a Kind' solutions for sustainable transport and mobility: EU initiative for accelerating EU-wide market access, scale up and derisking
  - Improving impact and broadening stakeholder engagement in support of transport research and innovation
  - Digitalisation of the transport system: data sharing
  - Advanced research methods and tools in support of transport/mobility researchers, planners and policy makers
  - The European mobility culture of tomorrow: Reinventing the wheel?
  - Under water noise mitigation and environmental impact
Repte social 4: **Smart, green and integrated transport**

Opció 2.

- Data limit: 21/04/2020
- Topics:
  - Efficient and safe connected and automated heavy-duty vehicles in real logistics operations
  - Large-scale, cross-border demonstration of connected and highly automated driving functions for passenger cars
  - Advanced light materials and their production processes for automotive applications
  - Reducing the environmental impact of hybrid light duty vehicles
  - Next generation electrified vehicles for urban and suburban use
  - Setting up a common European research and innovation strategy for the future of road transport

Repte social 3: **Secure, clean and efficient energy**

- Electro-mobility: [LC-SC3-SCC-1-2018-2019-2020 Smart Cities and Communities](#)
D. Types of Partners
## Types of Partners

<table>
<thead>
<tr>
<th></th>
<th>Core partner Tier 1</th>
<th>Core partner Tier 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding</td>
<td>uncapped</td>
<td>max. €300K/y</td>
</tr>
<tr>
<td>Fee</td>
<td>€50K/y</td>
<td>€30K/y</td>
</tr>
<tr>
<td>Acceptance progress</td>
<td>min. 85% of members (iMT &gt; GA)</td>
<td>max. of 15% of members (iMT &gt; GA)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Project Partner</th>
<th>Network Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPA accession and signing</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Funding</td>
<td>max. €150K/y (can differ)</td>
<td>none</td>
</tr>
<tr>
<td>Fee</td>
<td>20% of requested EIT project funding</td>
<td>possible fees for event participation</td>
</tr>
<tr>
<td>Acceptance progress</td>
<td>via iMT</td>
<td>via iMT</td>
</tr>
<tr>
<td>Limitations of duration</td>
<td>status based on SGA (project participation)</td>
<td>on invitation only</td>
</tr>
</tbody>
</table>
E. Elements of the Call 2020
Elements of the Call 2020 (probably in Call 2021)

Innovation Projects delivering Products / services / solutions at a Technical Readiness Level (TRL) of 5 and above.

Innovation projects may fall into one of the following categories:
- Research (policies and regulatory)
- Living Lab (TRL 5-6)
- Market (TRL 7-9)

Academy projects may fall into one of the following categories:
- Master School
- Doctoral Training Network
- Competence Hub
All proposals need to support the EIT Urban Mobility’s overall vision and mission and substantially contribute to tackling:

- Strategic objectives
- City challenges

Also Key Performance Indicators (KPI) from EIT and from the EIT Urban Mobility itself Examples:

EITNO4: # of Start-ups created as a result of Innovation Projects

SO1: Enhance value of urban spaces for the quality of life by re-shaping mobility

KPI EIT UM: Fraction of EIT Urban Mobility cities that provide evidence on:

- Freeing up road spaces of at least 1% / year (or more depending by their SUMP target) in favour of active mobility, public transport multi-functionality, space for people to meet, green and blue infrastructures (based on EIT Urban Mobility projects).
Elements of the Call 2020 (probably in Call 2021)

Innovation projectes (>TRL5) must be impact-oriented to:
- Scale up by the Factory
- Transfer to cities of the City Club and beyond.
- Commercial exploitation in Business Creation
- Provide input on hot topics for the curricula of Academy.

<table>
<thead>
<tr>
<th>Size</th>
<th>EIT funding</th>
<th>Minimum partner participation requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Max. budget pa</td>
<td>Partners</td>
</tr>
<tr>
<td>Small</td>
<td>100.000 €</td>
<td>3</td>
</tr>
<tr>
<td>Medium</td>
<td>500.000 €</td>
<td>4</td>
</tr>
<tr>
<td>Large</td>
<td>1.000.000 €</td>
<td>6</td>
</tr>
</tbody>
</table>

Evaluation criteria:
1. Project excellence, novelty and strategic fit (30%)
2. Solution readiness, consortium and project plan (20%)
3. Strategy for Implementation (20%)
4. Impact (30%)
F. First Ideation Projects at UPC
# First Ideation Projects for 2021 at UPC
(presented in Prague. September 2019)

<table>
<thead>
<tr>
<th>Idea Group (*)</th>
<th>Project Name</th>
<th>Project description</th>
<th>Idea Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>IG1</td>
<td>Idea_Connected Cooperative and Automated Self-Driving Car</td>
<td>To determine the optimal constrained routes dynamically for driverless vehicles in a urban areas</td>
<td>Prof. Sebastia Sallent</td>
</tr>
<tr>
<td>IG3 and IG5</td>
<td>ICT Urban Goods Distribution</td>
<td>Develop ICT systems for good distribution and analyse how urban infrastructure, planning and regulations have to be modified to allow these services.</td>
<td>Prof. Alberto Sanfeliu</td>
</tr>
<tr>
<td>IG3</td>
<td>Optimal urban space allocation based on Smart Traffic+transit measurement and management</td>
<td>This project is aimed at developing a new tool to determine the joint traffic, transit and pedestrian performance in a city, based on macroscopic fundamental relationships of traffic variables</td>
<td>Miquel Estrada</td>
</tr>
<tr>
<td>IG4</td>
<td>The data in the world of logistics</td>
<td>Creating a public access system unified to logistics applications in order to work with standardized and unified transit data for cities and countries.</td>
<td>Josep Lluis Larriba</td>
</tr>
<tr>
<td>IG10</td>
<td>Technological Infrastructure for developing and testing ICT Urban Mobility Services</td>
<td>Using scientific and technological infrastructures to improve innovation and development in urban ICT Mobility.</td>
<td>Prof. Alberto Sanfeliu</td>
</tr>
<tr>
<td>IG12</td>
<td>Personal ICT Urban Mobility</td>
<td>Develop ICT mobility solutions with features of autonomous platforms and ADAS (advance driver-assistance systems)</td>
<td>Prof. Alberto Sanfeliu</td>
</tr>
</tbody>
</table>

* Idea Group (IG):  
1. Scaling tools  
2. Accelerate Urban Transformation  
3. Forster Integrated Mobility  
4. Fulfill Mobility Needs  
5. Decarbonise and Automate Mobility  
6. Strategic Innovation  
7. Master School  
8. Doctoral School  
9. Competence Hub  
10. RIS  
11. Business Creation  
12. Open Topics
# First Ideation Projects for 2021 at UPC
**(presented in Prague. September 2019)**

<table>
<thead>
<tr>
<th>Idea Group (*)</th>
<th>Project Name</th>
<th>Project description</th>
<th>Idea Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>IG12</td>
<td>Healthy Urban Mobility</td>
<td>Build a new database management system based on individual mobility focused on measuring how much healthy our mobility habits are according to our urban environment at local level.</td>
<td>Estanislau Roca &amp; Joan Moreno</td>
</tr>
<tr>
<td>IG3 and IG5</td>
<td>Transit Integration by speed segregation</td>
<td>Demultiplex current transit (pedestrians, cars, bikes, scooters, public transport, cycles) by segregating different speed traffic flows.</td>
<td>Cecilio Angulo</td>
</tr>
<tr>
<td>IG4 and IG5</td>
<td>AIR MOBILITY</td>
<td>Transporting goods and passengers through the air to reduce congestion.</td>
<td>Jordi Pons (**)</td>
</tr>
<tr>
<td>IG5</td>
<td>Platooned Autonomous Buses</td>
<td>Identifying the operational planning, potentialities and the technological requirements of platooned modular buses.</td>
<td>Miquel Estrada</td>
</tr>
<tr>
<td>IG3 and IG4</td>
<td>Food distribution with the Public Transport Network of Passengers</td>
<td>Distributing dry food through public transport to attract people to travel with PT.</td>
<td>Josep Lluis Larriba</td>
</tr>
<tr>
<td>IG3 and IG4</td>
<td>Integration of food bank logistics in the city and in peri-urban areas</td>
<td>Improving the way of logistics for food banks.</td>
<td>Josep Lluis Larriba</td>
</tr>
<tr>
<td>IG4</td>
<td>In-Cabin Monitoring</td>
<td>Development of new functions inside the vehicle based on bio-informations.</td>
<td>Lluis Jofre</td>
</tr>
</tbody>
</table>

* Idea Group (IG):
1. Scaling tools
2. Accelerate Urban Transformation
3. Forster Integrated Mobility
4. Fulfill Mobility Needs
5. Decarbonise and Automate Mobility
6. Strategic Innovation
7. Master School
8. Doctoral School
9. Competence Hub
10. RIS
11. Business Creation
12. Open Topics
G. Challenges addressed
City of Barcelona Challenges for EIT UM BP 2021 (the first 10 with priority)

1. To prioritize traffic lights for public transport to increase public transport average speed and enhance frequency reliability.
2. To improve public transport electrification to fight against climate change.
3. To make limited public space use more flexible, adapting uses to specific needs depending on day/night, working days/weekends, seasons...
4. To optimize logistic travels to reduce the number of vehicles and travels.
5. To increase cars occupancy to reduce the numbers of vehicles and travels.
6. To reduce number of private cars circulating to reduce pollution and fight against climate change.
7. To reduce number of private cars parked on-street to enhance public space quality.
8. To improve most vulnerable modes of transport safety.
9. To develop the multimodality of micro mobility
10. From data to knowledge: technology platform, from sensors to user layer, providing concrete and scalable solutions to enhance interoperable urban mobility.
Barcelona Challenges (Presented at IH South Meeting last week)

City of Barcelona Challenges for EIT UM BP 2021

11. To develop measures to minimize health impact of private car mobility.
12. To reduce and limit vehicles speed inside cities to increase citizens safety and reduce pollution.
13. To investigate on innovative technical solutions for urban pavements to reduce air and noise pollution.
14. To investigate on innovative technical solutions for urban pavements to make public space use more flexible.
15. To investigate on innovative technical solutions for urban pavements to mitigate impact of urban heat islands and reflectance index.
16. To minimize visitors impact on public space (group mobility and queues management, early booking systems, signposting, transport stops).
17. To decrease impact of bicycles, motorcycles and PMVs touristic use and promote walking as it is leading coexistence and safety problems.
18. To communicate with visitors in real time to influence their trips, planned visits and mobility patterns (balancing people distribution).
Barcelona Challenges (Presented at IH South Meeting last week)

City of Barcelona Challenges for EIT UM BP 2021

19. To assess mobility and air quality health impact (mortality, morbidity, traffic injuries...) focusing on most vulnerable population.
20. To monitor walking and cycling health impact and traffic injuries risk, considering social inequalities perspective.
21. To assess impact of road safety actions on road traffic injuries, considering social inequalities perspective.
22. To assess Low Emission Zones impact on health and well-being, considering social inequalities perspective.
23. To monitor climate change impact on mortality and morbidity, considering social inequalities perspective.
24. To monitor noise pollution impact on mortality, morbidity and quality of life, considering social inequalities perspective.
25. To measure people exposure of mobility on foot and by bicycle.
26. To assess road safety interventions impact on vulnerable users.
27. To establish a surveillance information system on micro-mobility injuries, considering social inequalities perspective.
G. Matchmaking Event
2-day Ideation Event December 10-11

• Start: December 10th at 10:00
• End: December 11th at around 16:00

Venue either Ludwigsburg close to Stuttgart or Munich

New!! Innovation Hub South Meeting at UPF!! (26 or 28 of November)
H. Lessons learnt
Lessons learnt in 2020 – Strategic partners

• Everything goes very fast so contact possible partners with your idea, even if it’s not so mature. Call starts in January but by then everybody will be quite oriented.

• Get close to Barcelona City Challenges, it will be closer to market, and cities are more “attractive” than Universities.

• Area Metropolitana de Barcelona (AMB) is also joining next year. Think of them too, they look somehow "agile" in taking decisions.

• We do our best in Matchmaking events but everytime they have a different format and it’s quite complicate to show all possible projects from UPC. Nevertheless they should be there if opportunity comes and afterwards the projects are available to all partners.

• Think on going to H2020 Calls with your partners. This can improve changes to get these projects and viceversa EIT UM project will have the necessary Co-funding or KCAs.
Management Team UPC

Àrea de Recerca i Transferència (Suport KIC)
• Montserrat Garcia Hernàndez montserrat.garcia.hernandez@upc.edu
• Jaume Julibert jaume.julibert@upc.edu

Projectes H2020
• Mònica Altimira monica.altimira@upc.edu

Carnet Contact
• Laia Pagès laia.pages@carnetbarcelona.com
Additional Information
Barcelona Challenges (Presented at IH South Meeting last week)

Prioritize traffic lights for public transport to increase public transport average speed and enhance frequency reliability.

Key problems
- High waiting time
- High commuting time

Objective
- Increase average speed
- Enhance frequency
- Improve Reliability
Barcelona Challenges (Presented at IH South Meeting last week)

Improve public transport electrification to fight against climate change.

Key problems
• Environmental impact of traditional transport
• CO2 emissions & pollution

Objective
• Electrify public transport
• Reduce environmental impact within the cities

https://www.avenueparisian.com/them es/urbanmobility-electric-transport
Barcelona Challenges (Presented at IH South Meeting last week)

Make limited public space use more flexible, adapting uses to specific needs depending on day/night, working days/weekends, seasons.

**Key problems**
- Limited public space
- High occupancy

**Objective**
- Free up space
- Create time-flexible services
Optimize logistic travels to reduce the number of vehicles and travels.

Key problems
- High amount of logistic
- Congestion

Objective
- Increase efficiency
- Decrease environmental and operational costs
Increase cars occupancy to reduce the numbers of vehicles and travels.

Key problems
- Single rides
- Congestion

Objective
- Increase efficiency
- Decrease environmental and operational costs

http://www.theportal.info/transport
Barcelona Challenges (Presented at IH South Meeting last week)

Reduce number of private cars parked on-street to enhance public space quality.

Key problems
- Blocked public space
- Limited accessibility

Objective
- Free up roads
- Alternatives for parking
- Increase public space quality
Barcelona Challenges (Presented at IH South Meeting last week)

Develop the multimodality of micro mobility.

Key problems
- Low efficiency of micro mobility
- Limited availability

Objective
- Increase options
- Improve availability
Barcelona Challenges (Presented at IH South Meeting last week)

From data to knowledge: technology platform, from sensors to user layer, providing concrete and scalable solutions to enhance interoperable urban mobility.

Key problems
- Many sources of data
- Wide range of data providers
- Limited scalability

Objective
- Interoperability collecting data
- Services layer based on knowledge
City Challenges

- **Accessibility and inclusion:** provide access to sustainable modes of transport for all population groups
- **Data exploitation:** access, combine, share data via open platforms
- **Combating pollution:** maintain and increase the quality of natural resources – air, soil, vegetation, water
- **Allocation of space:** return urban space to citizens and increase liveability
- **Managing the transition:** improve the processes and define the roles of municipalities in the transition of urban mobility and the use of public space
- **Accommodating urban growth:** moderate the battle for the limited amount of available public space
Strategic Objectives (According to the New Strategic Agenda)

SO1 — Create liveable urban spaces
SO2 — Close the knowledge gap
SO3 – Deploy user-centric, integrated mobility solutions
SO4 – Accelerate market opportunities
SO5 – Promote effective policies and behavioural change
Mobilus Education Programs
MOBILUS Master School (EIT Labelling)

120 ECTS
- 30 ECTS for master thesis
- 30 ECTS Innovation & entrepreneurship (common)
- 30 ECTS urban mobility relevant topics (common)
- 30 ECTS ECTS Specific Tracks

Sep 2020 (?)
- Aalto University
- BME Budapest
- CTU Prague
- Eindhoven University of Technology
- KTH Royal Institute of Technology
- Universitat Politècnica de Catalunya
- Technical University of Denmark

Sep 2021
- Technion – Israel Institute of Technology
- University College London

"Quality for learning"
EIT Quality Assurance and Learning Enhancement Model 2018

MOBILUS Master School (EIT Labelling)

30 ECTS Urban Mobility Relevant Topics
- Urban Modelling/Travel Demand Analysis (or alike)
- Traffic Network Simulation (or alike)
- Logistics/Good Transport Planning/Analysis (or alike)
- Spatial Analysis (or alike)
- Transport Data Analysis (or alike)
- Advance data analytic/behavioural modelling (or alike)

30 ECTS Specific Tracks
- Track 1: Data science and smart mobility
- Track 2: Innovative mobility technology
- Track 3: Future mobility markets and services
- Track 4: Sustainable mobility transitions

The content of the courses as well as the execution will involve both cities and business partners for providing project challenges, coaching and feedback to student projects addressing real challenges.
MOBILUS PhD Program

Requirements for MOBILUS PhD Certificate:

• Successfully completed PhD / doctoral thesis  ECTS 120
• Report on International (6 months) Research Phase ECTS 30
• Two participations at annual MOBILUS PhD Forum ECTS (?)
• Participation in at least one workshop from the “Entrepreneurial Toolbox”(?)
MOBILUS Professional School

- Focus on lifelong learning in a blended gamified format for both cities and company staff
- Freemium funnel model based on online material (videos etc.) with value added services such as consultancy services
- Leveraging Cross-KIC initiatives
- KPIs such as completed courses/elements and revenues
- Requires initial startup funding

Free video material for marketing of UM and premium services

Premium small MOOCs/SPOCs

F2F workshops

Consultancy

Volume ARPU
UPC Capabilities
Urban mobility Areas

- Roads
- Security
- Planning
- Civil Engineering

- Sustainability
- Development
- Efficiency energy
- Renewable energies

- Smart city
- Vehicle networks
- Automotive
- Public transport
- Security

- Big data
- Computer vision
- Computer networks
- Sensors

- Urban planning
- Net Zero Energy Buildings
- Environment
- Solar architecture

Urban Mobility Figures

- 40 research groups
- 17 European Projects
- 20 National Projects
- 14 Patents
- 6 SPIN-OFFs
UPC Research Groups

spin-offs

- sparsity-technologies
- BEAMAGINE
- Smartengineeringbcn
- Pi2P
- MITIC SOLUTIONS
- NRGLAB

UPC Research Groups

- AElab
- BIT
- CD6 / GREO
- EOLI
- GAECE
- GIIP
- GNOM
- LEAM
- MPI
- RS Lab

- ACES
- CITCEA-UPC
- CTTC
- CD6
- GIIP
- MCIA
- NEMEN

Spin-Offs

- AiEM
- CPSV
- DAT1
- DUTP

- CNDS
- CRAAX
- DAMA
- KEMLG
- GPI
- GREC
- IMP
- inLab
- ISG/SETEL
- ISI
- IRI
- SANS
- SPCOM
- VIRVIG
- WNG
**Research Topics**

### Sustainable vehicle concepts
- Advanced materials: GIIP, NEMEN, AEiM
- Alternative propulsion systems: ACES, IRI, MCIA
- Electric, electronic & wireless: GIIP, ISI, MCIA, CITCEA
- Energy & life-cycle efficiency: GIIP, ACES
- Autonomous & connected mobility solutions: IMP&InLAB, WNG
- Safety & comfort: GPI, ISI
- Robotics, artificial intelligence, interaction/recognition sensor/optical: IRI, GPI, ISI, CD6, WNG, KEMLG, LEAM

### Sustainable Smart City & infrastructure
- Sustainable urban design and accessibility (inter-modality-aware design): IMP&InLAB, IRI, CPSV
- City planning & architecture (acoustics, heat, comfort, light optimization): CD6, DUTP, DAT, ISI, CPSV, AEiM; CTTC
- Urban data simulation (land use, housing, urban mobility plans) & virtual reality: VIRVIG, CPSV, CTTC
- Charging and smart grids: CITCEA
- Sustainable/smart materials/recycling: SANS, GREC, CE, DUTP, DAT, CPSV, MATCAR, AEiM
- Adaptive and dependable interconnectivity
- Big Data and Intelligent Systems: CRAAX, SANS, VIRVIG, DAMA
- Structural Technologies: CE

### Business design for Urban mobility
- Mobility as a Service (MaaS): IMP&InLab, DAMA
- Learning systems & qualitative decision making: IMP&InLab, STL, KEMLG
- Technological & social trends
- Predictive user studies: GREC
- Mobility data collection: DAMA
- Investment scenarios / Public Investment: CE

### Urban mobility concepts
- Sustainable urban mobility
- Multimodal mobility strategies
- Dynamic traffic models & management: IMP&InLab, SANS, CD6, DAMA, IRI, CENIT, BIT
- Flexible road networks: IMP&InLab
- Logistic and routing concepts / multipath routing (AI): IMP&InLab, ISG, EOLI, CENIT, BIT
- Communications/Cooperative Urban Mobility: WNG, CRAAX, ISG, ISI, GNOM, KEMLG