



# Luxembourg key sectors



# A dynamic ecosystem for digital health

Health technologies

# Young, innovative, entrepreneurial

## Sector development priorities

- ✦ Medical devices
- ✦ In vitro diagnostics
- ✦ Digital health

**Objective: enabling personalised medicine**

**+ 130 companies**



## Excellent academic biomedical research community

- ✦ Luxembourg Centre for Systems Biomedicine (LCSB)
- ✦ Luxembourg Institute of Health (LIH)
- ✦ International BioBank of Luxembourg (IBBL)

## Data-driven initiatives

- ✦ PEARL project in digital medicine (LCSB, LIH and Centre Hospitalier de Luxembourg)
- ✦ GAIA-X Health Data Space
- ✦ CLINNOVA

# Facilities for soft-landing healthtech businesses



## House of Biohealth

- ~ 15,000 sqm of Lab space and offices to host SMEs with R&D activities

## Health technologies business incubator

- ~ 300 sqm of lab space with benches and equipment to host start-ups and spin-offs



## Forthcoming (2024): Health And Life Science Innovation Campus (HE:AL)

- ~ 55,000 sqm of lab and office space
- Focus on Digital health and personalised medicine
- Focus on scale-ups

# R&D funding and start-up acceleration

## Funding programmes

- ✦ National R&D and innovation support measures
- ✦ Joint call for public-private partnerships:
  - clinical research and development of new, innovative, digital products
- ✦ European programmes:
  - Horizon Europe
  - Innovative Health Initiative (IHI)

## Fit 4 Start healthtech track

- ✦ Up to €150,000 in equity-free funding
- ✦ Personalised coaching
- ✦ Free access to co-working space in Luxembourg
- ✦ Access to Luxembourg's petascale high performance computer MeluXina
- ✦ Valuable networking opportunities in Luxembourg



# Launch pad for mobility innovation in Europe

Smart mobility

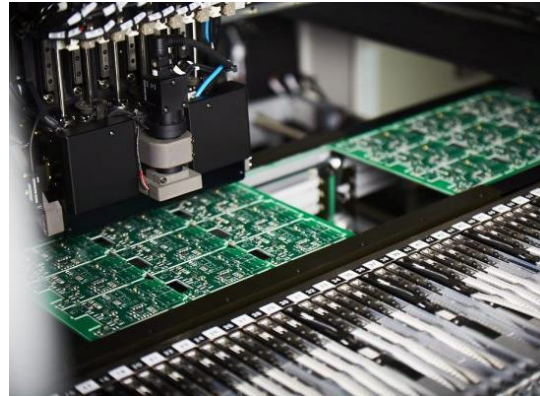
# Smart mobility ecosystem

## 700 companies in the automobility sector

Including 100 change catalysts supporting the emergence of intelligent and sustainable mobility



Highly automated, high value-added manufacturing industry



Composite materials, sensors, electronics, printed circuits and more



Cargolux, second largest air-cargo carrier in Europe (Findel airport)



CFL Multimodal rail/road conversion hub in Bettembourg

200,000 cross-border commuters plus many international forwarders

# Creating a New Mobility Balance

## Car ownership meets Mobility as a Service

- ✦ From the first mile to the last mile
- ✦ Connecting road with rail infrastructure
- ✦ Offering high quality Park & Ride facilities
- ✦ Seamless travel experience
- ✦ Digital market place (app): [mobiliteit.lu](https://mobiliteit.lu)

New Mobility Balance: a platform for mobility innovation – an opportunity for expanding to Europe!



More than 400 parking spaces will be available at P&R Ettelbrück by 2023 (source CFL)



# Potential use-case partnerships (selection)



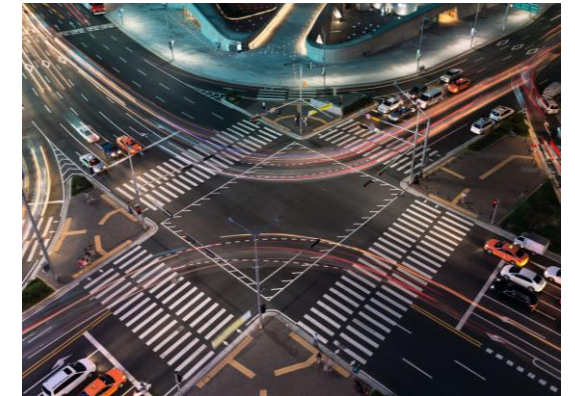
National railway company CFL with train, bus and cargo activities, eager to test and validate next generation mobility solutions



Mobility service providers, e.g. SalesLentz and Emile Weber, integrating new mobility concepts in their daily operations



Amazon Europe, headquartered in Luxembourg, moving on the edge of innovation in middle and last-mile deliveries

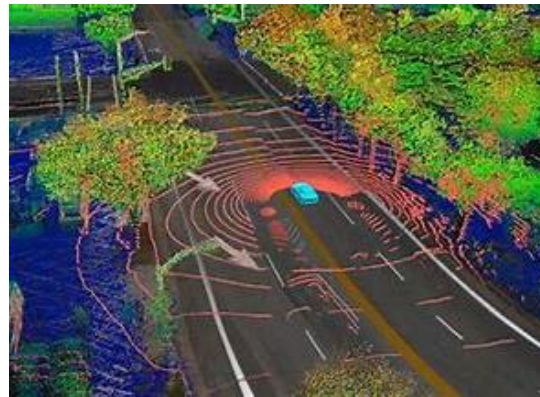


Smart infrastructure and intelligent transportation systems (ITS), open innovation opportunities provided by public stakeholders

# Potential R&D partnerships (selection)



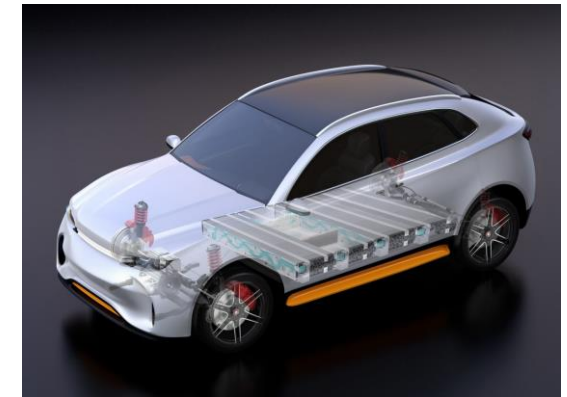
Digital twins and traffic simulations powered by the Luxembourg Institute for Science and Technology (LIST)



Autonomous mobility, robotics and drone technology supported by the Luxembourg University and SnT



Socio-economic research in urban development and mobility performed by LISER



Private R&D partners, diversified cross-border network in AV and EV supply industry (autoregion.eu)



# A European hub for commercial space

Space

# A space pioneer with innovation focus

+60 companies



## R&D and innovation funding

- European Space Agency (ESA) programmes
- National space programme (supported by ESA)

## Specialised research centres



## SpaceResources.lu initiative



## Business-oriented Luxembourg Space Agency (LSA)



## Forthcoming Space Campus (2026)

- Company-oriented site
- Public research-oriented site

# Research and talent development

## Research resources

- ✦ Research units at the **University of Luxembourg** and the **Luxembourg Institute of Science and Technology (LIST)**
- ✦ **European Space Resources Innovation Centre (ESRIC)** supported by LSA, LIST and ESA
- ✦ **LSA Data Centre**, providing access to space data

## Talent development

- ✦ **European Space Education Resources Office** with ESA
- ✦ **Master in Space, Communication and Media Law** with the University of Luxembourg
- ✦ **Interdisciplinary Space Master** with the University of Luxembourg
- ✦ **Young Graduate Trainee programme** with ESA
- ✦ Various supports to
  - Summer schools and extra-scholar initiatives
  - National & international hackathons (ActInSpace, SpaceHack)

# Business and start-up support

## Luxembourg Space Agency

- ✦ Supporting economic growth
- ✦ Enhancing the Luxembourg space ecosystem
- ✦ Developing local talent
- ✦ Boosting international engagement



## ESRIC Start-up Support Programme

- ✦ First worldwide incubation programme entirely dedicated to space resources utilisation
- ✦ Three stages:
  - Pre-incubation: Concept proofing stage
  - Incubation: Launch pad
  - Post-incubation: Residency stage

## Fit 4 Start space track

- ✦ Up to €150,000 in equity-free funding
- ✦ Personalised coaching
- ✦ Access to high performance computer

# Case study: Spire

Creation date: 2012 (San Francisco, US),  
2018 (Luxembourg)

- ✦ **Leading global provider** of space-based data, analytics and space services
- ✦ Uses one of the world's largest multi-purpose satellite constellations to source and enrich **hard-to-acquire data** for the maritime, aviation and weather industries
- ✦ **Luxembourg footprint:** key operations in aviation, weather, Earth intelligence, space science and maritime





# Digital, smart, connected

Industry 4.0



# Home to international industrial groups

## +450 manufacturing industry companies

- ✦ High value added, R&D-intensive companies
- ✦ International groups with R&D, innovation and decision centres in Luxembourg

**GOODYEAR**

cebi

**HUSKY**<sup>®</sup>

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MAKING A DIFFERENCE AROUND THE WORLD

**CERATIZIT**  
GROUP

**AVERY DENNISON**

ArcelorMittal

## 300 industry 4.0 enablers specialising in:

- ✦ Cloud computing
- ✦ Digital transformation
- ✦ Enterprise resource planning
- ✦ Data mining/business intelligence
- ✦ Data analysis & data management
- ✦ Cybersecurity
- ✦ Artificial intelligence
- ✦ Internet of things

Artec 3D

WIZATA

**PAUL WURTH**  
SMS group

VIRTUAL RANGERS

# Digitalisation and data excellence

## A strategic government priority

- ✦ Data-driven innovation strategy
- ✦ Digital skills
- ✦ Agile decision making to capture data-related opportunities
- ✦ Strategic projects:
  - High performance computing
  - National data exchange platform
  - Open, secure national cloud
  - GAIA-X regional hub

## Outstanding connectivity

- ✦ Very fast, ultra-low-latency connections
- ✦ Nation-wide coverage of ultra-high-speed broadband
- ✦ Excellent infrastructure for data storage and handling (Tier IV data centres)
- ✦ 5G mobile networks
- ✦ Most reliable electricity grid in Europe

## Agile national cybersecurity ecosystem

- ✦ Hands-on services available to companies
- ✦ Active cooperation between public and private stakeholders

# Integrated and connected

## R&D partnerships

- ✦ University of Luxembourg's **Interdisciplinary Centre for Security, Reliability and Trust (SnT)**
- ✦ **Luxembourg Institute for Science and Technology (LIST)**
- ✦ LuxProvide: national **business-oriented high performance computer MeluXina**



## International network

- ✦ Luxembourg – in the heart of one of Europe's **most dense industrial areas**
  - Wallonia, Belgium – Luxembourg – northern France – western Germany
- ✦ Close relationships with **potential business and research partners** in neighbouring countries
- ✦ **Luxembourg Digital Innovation Hub (L-DIH)**: connects industrial companies with industry 4.0 service providers in Luxembourg and Europe

# Case study: Goodyear

To be completed or changed ✖





# Combining digital and sustainable

Cleantech



# Green transition: competitively sustainable



## Our vision

Luxembourg is firmly committed to supporting an economy that is both competitive and long-term sustainable. The country is investing in the means and infrastructure to become a leading circular economy hub.

## Priorities

- ✦ Building resilient and sustainable value chains
- ✦ Ensuring a energy-efficient, sustainable digital transition
- ✦ Driving the digitally enabled circular economy transition
- ✦ Most ambitious “Fit for 55” goals: -55% of CO<sub>2</sub> in 2030

# Data support for clean and circular solutions

## Nation-wide digital twin by Luxembourg Institute of Science and Technology (LIST)

- ✦ Testbed for smart city applications: energy, urban planning, resource management, mobility

## Product Circularity Data Sheet (PCDS) initiative

- ✦ Information on end of use cycle: reuse, repair, recycle, use as material bank
- ✦ In the process of becoming an ISO / NP 59040 standard
- ✦ Developed and tested in the EU. A dedicated governance entity to be set up (end 2022)

## Business-oriented high performance computer MeluXina

- ✦ Access for companies working on big data solutions for climate predictions, disaster management, mobility, smart buildings, air quality, water and wastewater management, smart grids for electricity, etc.

## Sustainable finance

- ✦ A leading international platform for sustainable finance
- ✦ Luxembourg Sustainable Finance Initiative
- ✦ International Climate Finance Accelerator

# Potential test/use-case partnerships (selection)



Smart city initiatives and eco-districts are under way in several cities including Differdange, Dudelange and Wiltz



Sustainable building initiatives e.g. Neobuild Innovation Centre and deconstruction pilot projects



Incubators for sustainable solutions: Paul Wurth Incub, Innovation Hub Dudelange, etc.



National railway company CFL with train, bus and cargo activities, eager to test and validate next generation mobility solutions



# Potential R&D cooperation topics (selection)



Earth observation



Sustainable biotech  
innovation



Green hydrogen  
production



Intelligent, clean  
energy systems and  
energy communities



# Shaping the future of finance

Fintech

# Innovation in a leading financial centre

## Over 250 fintech companies

- ✦ Payments
- ✦ Big data and artificial intelligence
- ✦ Insurtech
- ✦ Cybersecurity and authentication
- ✦ Fundtech and investments
- ✦ Regtech
- ✦ Lending
- ✦ Blockchain



## Operating in a leading financial centre

- ✦ +125 banks
- ✦ #1 financial centre in the Eurozone
- ✦ Largest investment fund centre in the EU - #2 in the world
- ✦ #1 in securities listing in the EU
- ✦ #1 in microfinance in the EU
- ✦ #1 in cross-border insurance in the EU

# A favourable ecosystem



- ✦ Highly accessible financial regulator
- ✦ Corporations open to innovation and partnerships
- ✦ Licence applications in English, French and German
- ✦ Easy access to qualified, multicultural staff
- ✦ Very fast, ultra-low-latency connections
- ✦ Excellent infrastructure for data storage and handling (Tier IV data centres)
- ✦ Cross-border business expertise

# Luxembourg House of Financial Technology

## Activities

- ✦ Engage with, grow and gel the Luxembourg fintech **ecosystem**
- ✦ Support **fintech innovation** and drive digital transformation
- ✦ Identify **knowledge gaps** in the fintech ecosystem and deliver tailored education
- ✦ **Incubator and accelerator** facility
- ✦ Early-stage fintech support: **CATAPULT KICKSTARTER** fintech development programmes



# Thank you!

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[www.youtube.com/c/LuxembourgTradeandInvest](http://www.youtube.com/c/LuxembourgTradeandInvest)

