



CREATE-IoT

Hyper-connected Society



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# *IoT European Large-Scale Pilots Programme*

## Experience Readiness Level - ERL



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# Experience Readiness Level - Concept

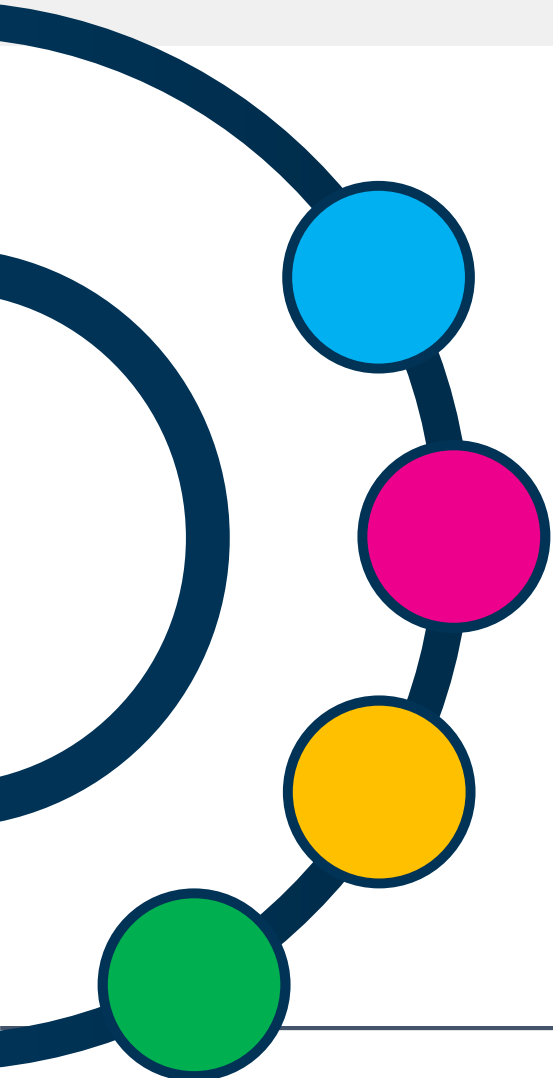


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Experience Readiness Level (ERL) framework as a complementary practice to other, pre-existing, Readiness Levels frameworks. ERL is informed by the following six pre-complementary readiness level approaches:

- ❖ Technology readiness level (TRL),
- ❖ Manufacturing (or production) readiness level (MRL),
- ❖ Market readiness level (MARL),
- ❖ Integration readiness level (IRL),
- ❖ System readiness level (SRL),
- ❖ Cyber security readiness level (CSRL),

Each of which can in one way, or another be connected to IoT technology development.



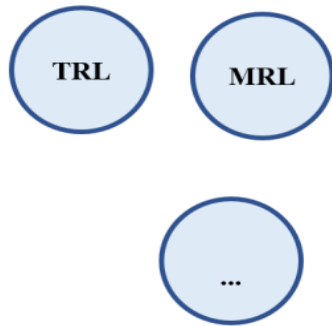
# Evolution of Readiness Levels



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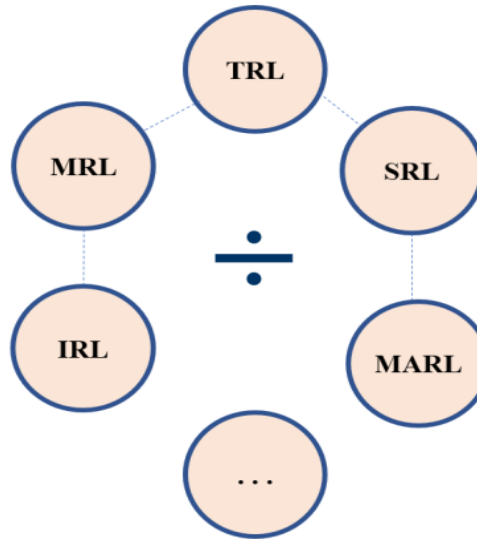
## Levels, measures, assessments and indices

### Sensor Networks



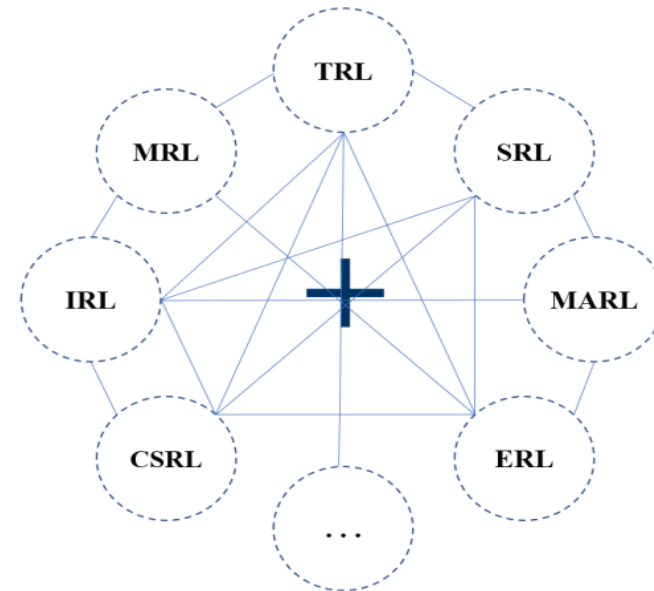
Individual types of  
Readiness Level

### Centralised IoT Systems



Connected types of  
Readiness Levels

### Next Generation IoT Systems Increasing Maturity, decreasing risks



Distributed Interconnected  
types of Readiness Levels

# Experience Readiness Level - Overview



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ERL measures the capability of IoT systems and applications to trigger a well-suited user experience, a measure that steps away from thinking about IoT as simply object-based, to embrace instead the potential of dynamic exchange between technology and humans with a particular emphasis on the empowerment of the user and a deepening of their experience .

The preferred roadmap utilises an integration of Art and ICT as a catalyst and framework for the process.

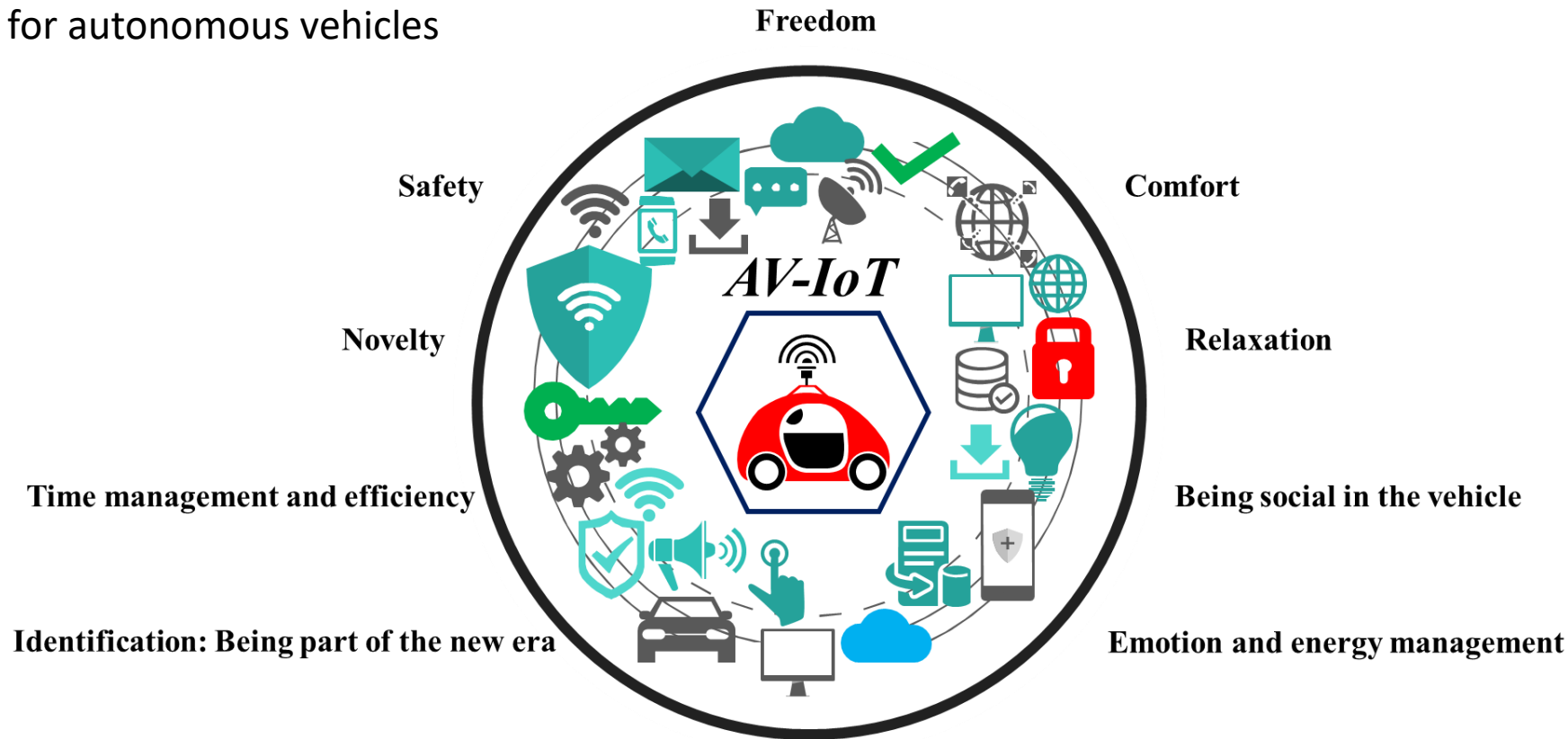
ERL is most effectively facilitated through the use of a co-creation framework. This is described as activities where customers, end users, application owners, artists and developers are involved as active participants in the design and development of, for example, personalized IoT applications, use cases, products, services, and experiences in IoT platforms ecosystems

# Values of autonomous vehicle expressed by users



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ERL case study for autonomous vehicles



Source: CREATE-IoT Delivery D03.06 ERL Policy memo and associated communication activities

Source: I. Pettersson, The temporality of in-vehicle user experience - Exploring user experiences from past to future, Thesis for the degree of licentiate engineering, Chalmers University of Technology, Gothenburg, Sweden 2016.

# Experience themes for in-vehicle systems



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- The vehicle as a caretaker – The participants enjoyed the feeling that the vehicle was taking care of their safety and needs, while also providing convenience.
- The vehicle as a space for relatedness – The in-vehicle systems of the vehicle provided an opportunity for relatedness to other people, outside the vehicle, easily accessible through smartphone integration.

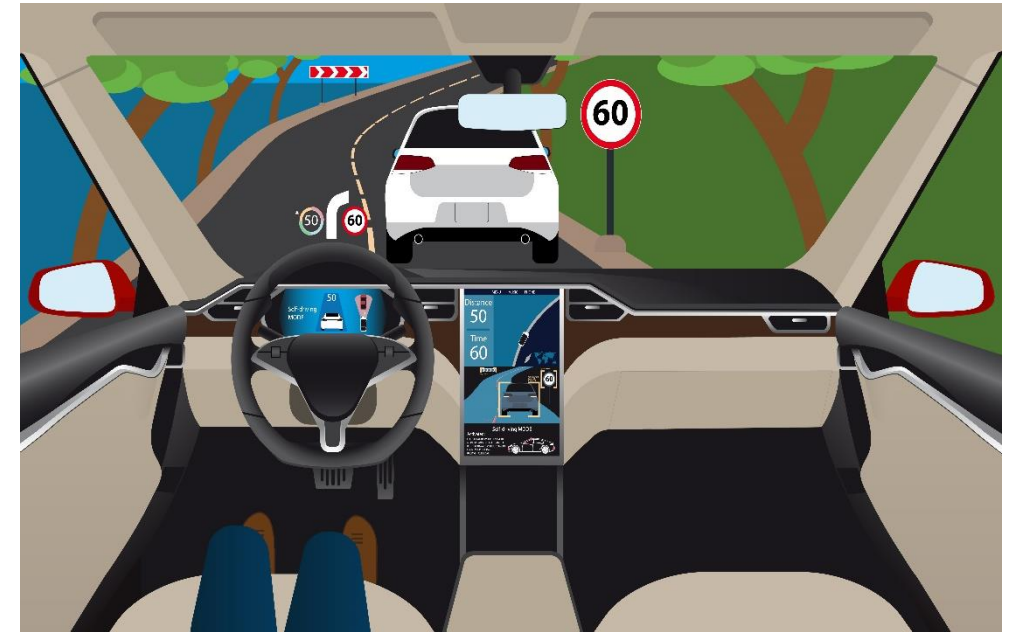


# Experience themes for in-vehicle systems



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- The vehicle as a space for stimulation – The discovery of new functions and the utilisation of the interactive systems available in the vehicle were a source of stimulation for the participants.
- The vehicle as a space for transition – Time spent in the vehicle was used as an opportunity to prepare for the next stage in the participants' lives.



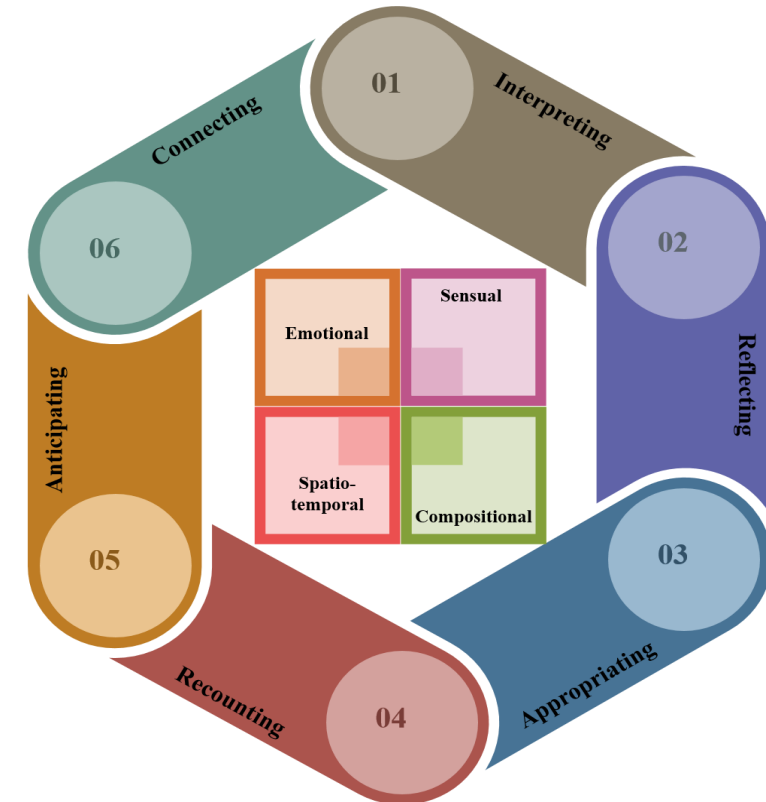
# Six steps of experience – What next?



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Design individual mobility from the needs and experiences

- Anticipating (e.g. expectations the user has from previous experiences),
- Connecting (immediate responses with little cognitive effort),
- Interpreting (making sense of an experience in a more conscious way),
- Reflecting (reflections on experiences by retrospect evaluation and examination),
- Appropriating (relating the experience to past and future),
- Recounting (telling the experience to one self and others by storytelling).



Source: P. McCarthy, and J. Wright. Technology as Experience. The MIT Press, 2004

# The next generation IoT ecosystems



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- The Experience Readiness Level (ERL) is a new notation that measures the capability of IoT systems to trigger a well-suited user experience. IoT user experience will play an important role in the future developments which include a wide variety of technologies and design interactions. The IoT user experience evolves and will depend on elements such as intelligent sensors/actuators, algorithms, experience architectures and context, and socially aware experiences.
- The next generation IoT ecosystems will incorporate new technologies such as autonomous systems, AI, VA, VR, AR, wearables, distributed ledger technologies, edge computing platforms, and the user experience will play a crucial role in assessing the maturity of IoT technologies and applications to create compelling, efficient, and fulfilling experiences in new IoT mediums, contexts and environments across industrial sectors.



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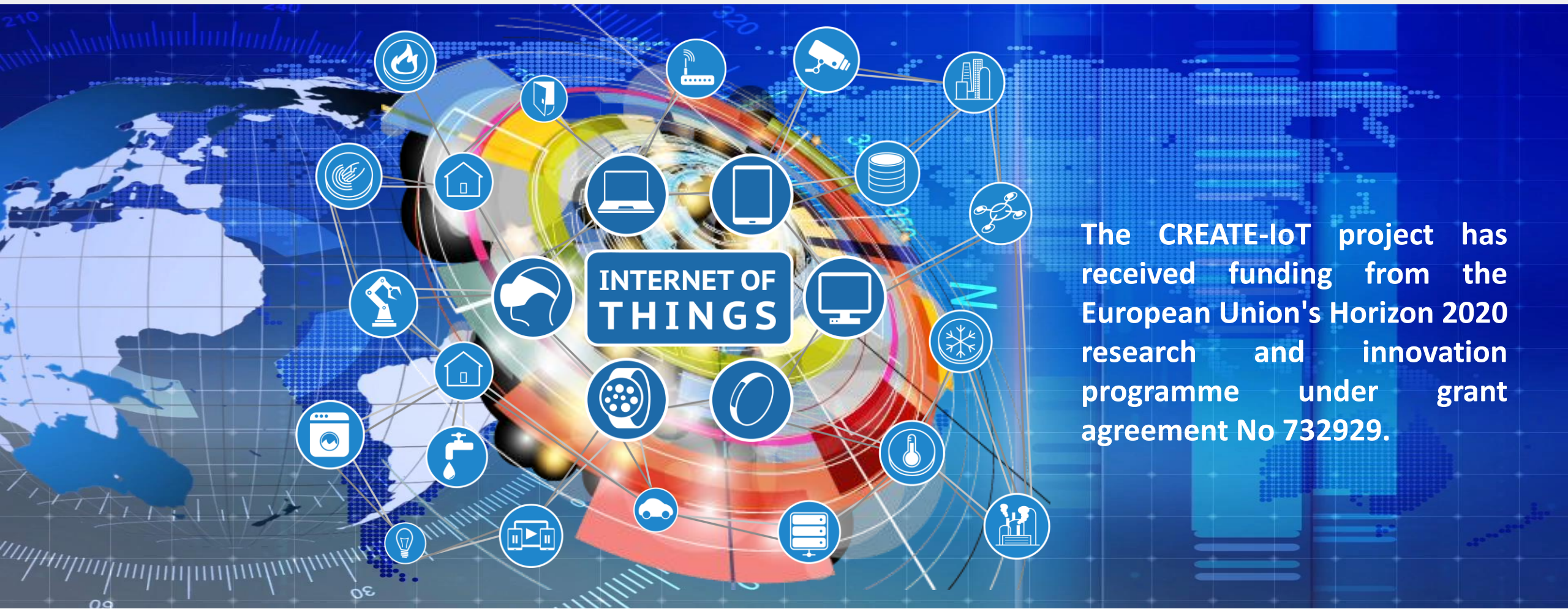
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