

U4IOT



OASC

Brussels, 2017-01-12

# ETHICS IN END-USER ENGAGEMENT IN LSP

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# Digitalization of society

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- Digitalization is often viewed as the solution to societal problems
  - Human needs in focus to foster technological possibilities
  - Increase the digital divide
  - Creates unintended consequences
    - Energy saving solutions make people use more energy on other things
    - Social media as a huge influential factor on businesses and society
    - Augmented reality – e.g. Pokemon Go and family relations
    - Smart Phones creating car accidents, mobile zombies – new traffic solutions
    - Privacy enhancing tools that makes us more interesting to study



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To avoid or know how to handle  
potential unintended consequences,  
involve the end-users 😊

# End-user Engagement (What)

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## End-users contributing to smart city IoT solutions

- Giving input and ideas on how their situation can be improved with smart solutions
- Co-create smart city solutions
- Providing data by using smart city services/system
- Testing products/services – giving feedback
- Developing smart city solutions
- Engaging in policy making

# Engaging end-users (Why)

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- Get it right the first time
- Democratic right to have influence - Users are experts of their context
- Increased originality and number of ideas and solutions
- Multi-disciplinary groups think better – understand different perspectives
- Realistic expectations - Increased acceptance
- Develop users technical competence – empower and educate
- Balance power relations

# Engaging end-users (challenges)

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- End-users needs should drive innovation and growth i
  - It is somewhat hard and demanding to engage end-users
  - Create visibility
  - Value of participating in research projects must be explicit
  - Find motivated end-users
  - Find representative end-users
  - Motivations and needs are a moving target

# Large Scale Piloting

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- Standards, scalability, flexibility and size
  - Reduces end-users' possibilities to influence the design and development of technology
  - Requires solutions that are mature
  - Finding suitable pilot contexts
  - Responsibilities during and after pilots - liability
  - End-users more reluctant to use and install prototype technologies to the same extent
  - Technological lock-ins

# Consider

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What is the real space for re-design  
in the innovation that your end-  
users contributes to in a LSP?



# Lessons Learned from EAR-IT

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Challenging task to inform citizens about the ongoing research project and tests

Privacy aspects have great impact on the design of smart city solutions

# Ethics in LSPs

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- Data protection and privacy
- Equality and inclusion
- Give credit to participants
- Informed consent in LSP projects, what is the process of:
  - Inform about research goals
  - Possible negative effects
  - Possibilities to refuse participation or withdraw from the research, at any time, and without consequences
  - Their ability to understand what the project is about and potential consequences of it
- Good closure of the pilots – how?

What is the choice for end-users to use or being exposed to your solutions?

Are there affectees your need to consider?

# End-user engagement and privacy – IoT Lab

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- How to motivate end-users to contribute
  - Fun
  - Fame
  - Fortune
  - Fulfillment
- Interpret and make use of the data being collected
- Keep citizens privacy intact while engaged
- New technology leads to changes and we need to research and understand the potential change

# Assess potential unintended consequences with end-users before moving to action



# Thank You

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