

# Assessing security technologies: a methodology for societal impacts on diverse stakeholders

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## LEARNING FROM TECHNOLOGY FAILURE

- **Body scanners:** not illegal, simply illegitimate; user distrust of 'nude' photos
- **Project Champion:** Video surveillance / ANPR in Birmingham resulted in legal threats, resident anger
- **Spain electronic ID:** need for external reader unit and software drivers; not perceived as useful by public
- **Whisper / WhatsApp:** Concerns about quality of encryption (WhatsApp), and geolocation shared with US Dept. of Defense (Whisper)





## WHAT IS SOCIETAL IMPACT, AND WHY CARE?

- Technological developments aim to have impact but often produce unwanted externalities (e.g. body scanners, ID cards, smart meters)
- Societal impact refers to a range of positive and negative externalities (which impact ways of life, communities, trust, economy, values, and more)
- Context: social attitudes unforgiving of intrusive technologies; strong EU data protection framework
- SIA is 'societal', not just social: it is about the interplay of technology and society throughout development lifecycle
- Early and ongoing assessment leads to more functional and more accepted product



## SOCIETAL IMPACT

**INTENDED + UNINTENDED**  
consequences

**SOCIAL, TECHNICAL, POLITICAL, ECONOMIC,  
ORGANISATIONAL and ENVIRONMENTAL  
FACTORS**

involved in a particular  
**POLICY, PROJECT or TECHNOLOGY**

- Responsible Research and Innovation principles
- Constructive Technology Assessment
- Environmental Impact Assessment
- Cost-Benefit Analysis
- Privacy Impact Assessment
- Data Protection Impact Assessment
- Surveillance Impact Assessment and future.

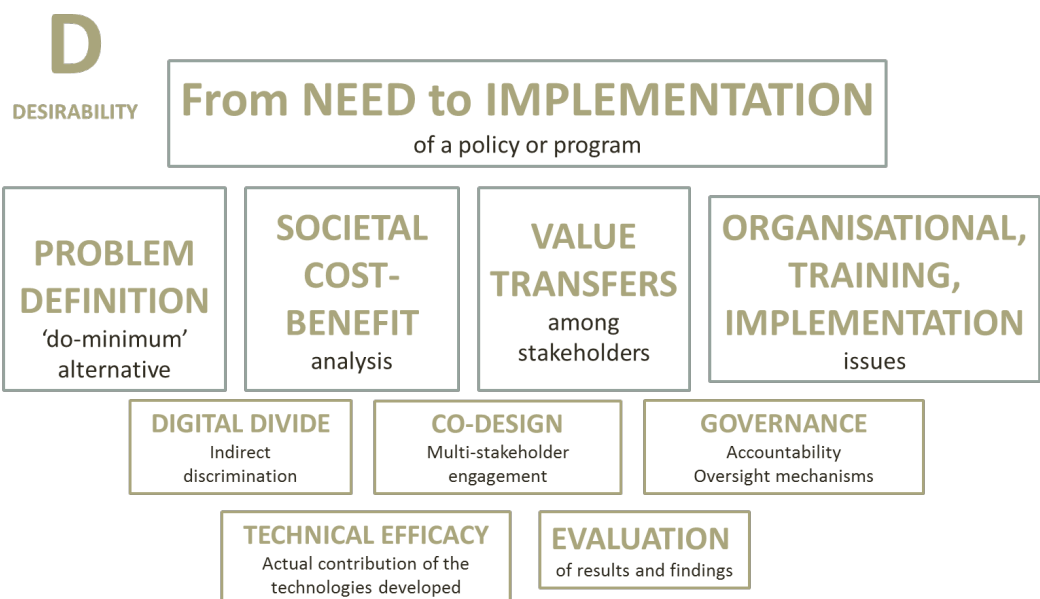




## SOCIETAL IMPACT METHODOLOGY



## DESIRABILITY







## ACCEPTABILITY

# A

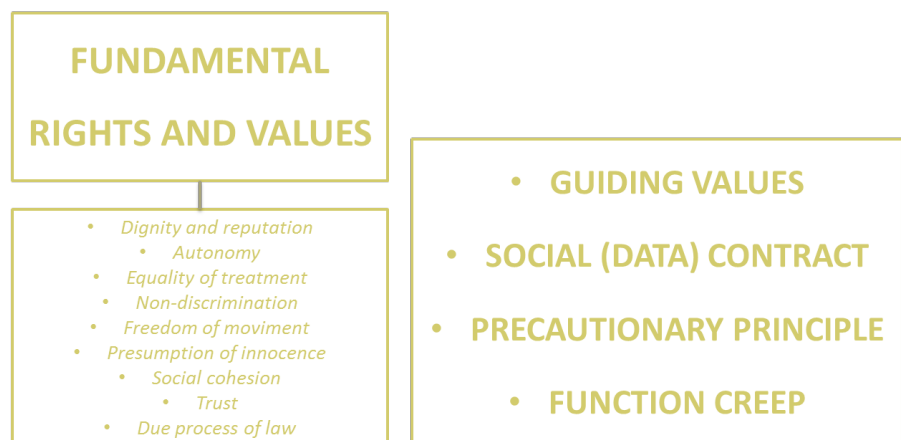
### ACCEPTABILITY



## ETHICS

# E

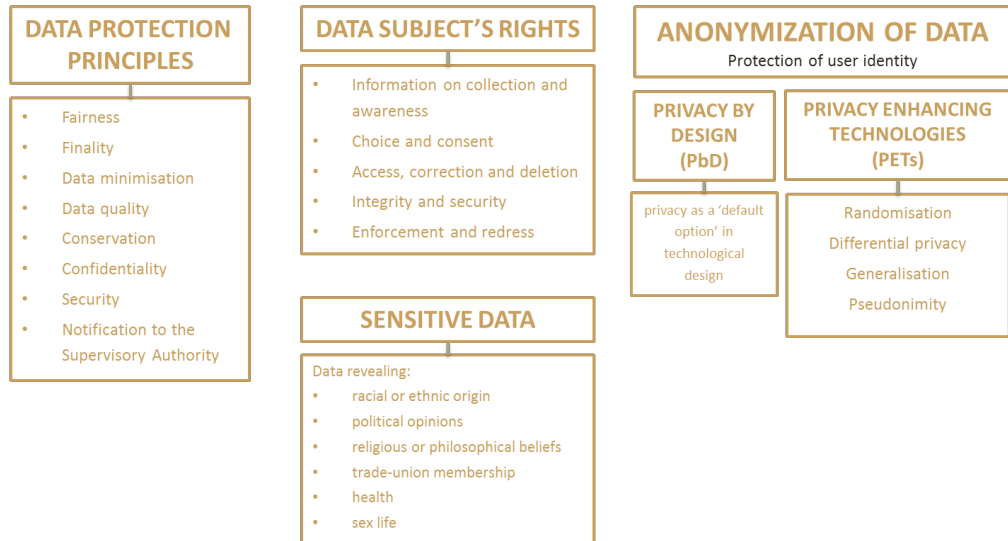
### ETHICS



# DATA MANAGEMENT

## Dm

### DATA MANAGEMENT



## SIA IN SOME ETICAS PROJECTS

- **Surveillance of social media in disaster contexts:**
  - Ensuring clarity of objectives to keep tech acceptable to social media users
  - Proposing anonymization techniques
  - Anticipating digital divide in use of social media
- **Automated border control harmonization:**
  - Judging effects of different biometrics
  - Review of each project development stage
  - Proposing inclusive design methods
  - Legal analysis on limits of database checks
- **People-tracking/counting technologies:**
  - Intervened before RFQ to set legal parameters, pose ethical questions, compare solutions





## CONCLUSION

- SIA helps to build socially-conscious technologies that are more accepted
- It is an all-stakeholder approach: ensures end user trust but also business effectiveness for designers and policy leaders
- Assessment should be early, ongoing, and reliant on clear communication and roles
- Principles rely on key tools (cost-benefit analysis, technology assessment, etc.) and can be tailored to different development requirements



## THANK YOU FOR YOUR ATTENTION

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