Privacy Flag: *Conceptual Approach and Overview*

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Privacy Flag Project *(GA No.653426)*
Enabling Crowd-sourcing based privacy protection for smartphone applications, websites and Internet of Things deployments

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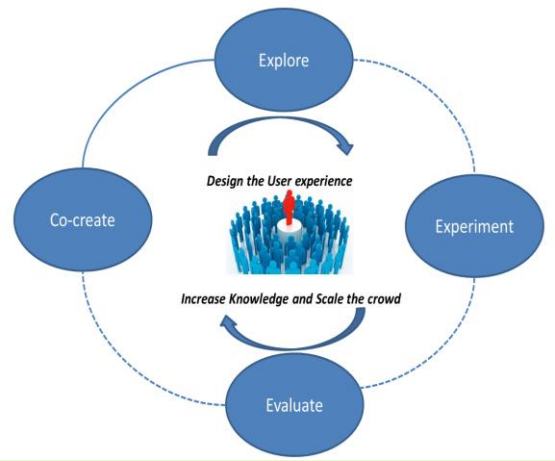
Conceptual Position

Enabling Crowd-sourcing based privacy protection *for smartphone applications, websites and Internet of Things (IoT) deployments.*



Active involvement of citizens in improving their personal data protection

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Project General Description

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General Information

- *Enabling **Crowd-sourcing based privacy protection for smartphone applications, websites and Internet of Things' deployments.***

- European Research Project (***Innovation Action***) under the ***H2020 Framework Programme***

- **Digital Security Call**: *Cybersecurity, Privacy & Trust, H2020-DS-2014-1*

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Overview and Objectives

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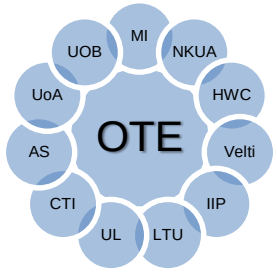
Overview

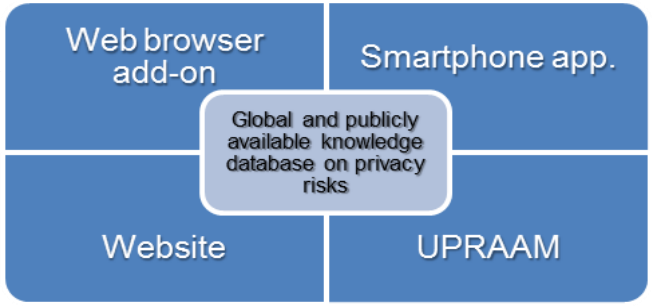
WHAT

- ***Research and combination of the potential of crowdsourcing, ICT technologies and legal expertise*** to protect citizens' privacy when visiting websites, using smartphone applications or living in a smart city.

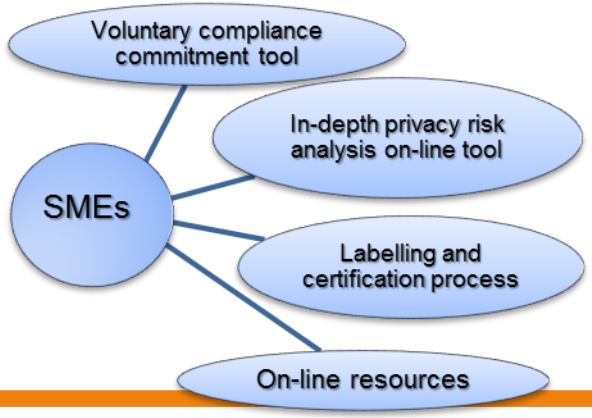
HOW



- ***Enable citizens to monitor and control their privacy.***
- ***Provide user-friendly tools*** for smart phone and web browsers`, enabling citizens to easily identify the level of privacy risk.
- ***Build a global knowledge database on privacy risks*** related to websites, smart phone applications and smart cities.



- ***Raise awareness of other stakeholders***, **by providing a positive incentive to privacy friendly companies and services *versus* privacy-unfriendly ones**.



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Objectives_(1)

1. Develop a highly scalable privacy monitoring and protection solution based on:

- **Crowd sourcing mechanisms** to identify, monitor and assess privacy-related risks.
- **Privacy monitoring agents** distributed on users' smart phones and web browsers, ***to identify privacy threatening activities and applications.***
- **Universal Privacy Risk Area Assessment Methodology** (UPRAAM) ***tailored on European and international legal norms*** *on personal data protection and data ownership*;
- **Personal Data Valuation mechanism** for citizens;
- **Privacy enablers for citizens to retain control over their privacy** with optimized anonymisation techniques against traffic monitoring and finger printing;
- **User-friendly interface informing the users and raising citizen awareness on their privacy risks** ***when using a smart phone application or visiting a website.***

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Objectives_(2)

2. **Develop a global knowledge database of identified privacy risks** *with websites, smart phone applications and smart cities deployments*, together with on-line services **to support companies and other stakeholders in becoming privacy-friendly, *including*:**

- **In-depth privacy risk analytical tool and services.**
- **Voluntary legally binding mechanism for companies located outside of Europe** *to align with and abide to European standards in terms of personal data protection.*
- **Services for companies** *interested in being privacy-friendly.*
- **Labelling and certification** process and service.

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Objectives_(3)

3. **Actively disseminate towards the public and specialized communities**, and SDOs, ***including ICT lawyers, policy makers and academics.***

- **Privacy Flag will develop a privacy defenders community and will establish a legal entity**
  with a sound business plan
  to ensure a long term exploitation, sustainability and maintenance of the Privacy Flag platform and services.

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Combined Approach

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Law

ICT

Users/Crowd = *Scalability*

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Universal Privacy Risk Area Assessment Methodology

- → Universal & Generic
- → Reliable & Effective
- → Democratizing Privacy Legal & Technical Requirements

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IoT Deployments

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Websites

Apps

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Voluntary Committment Tool

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In-depth analysis

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ISO

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Key Technical Development

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Architecture and Processes

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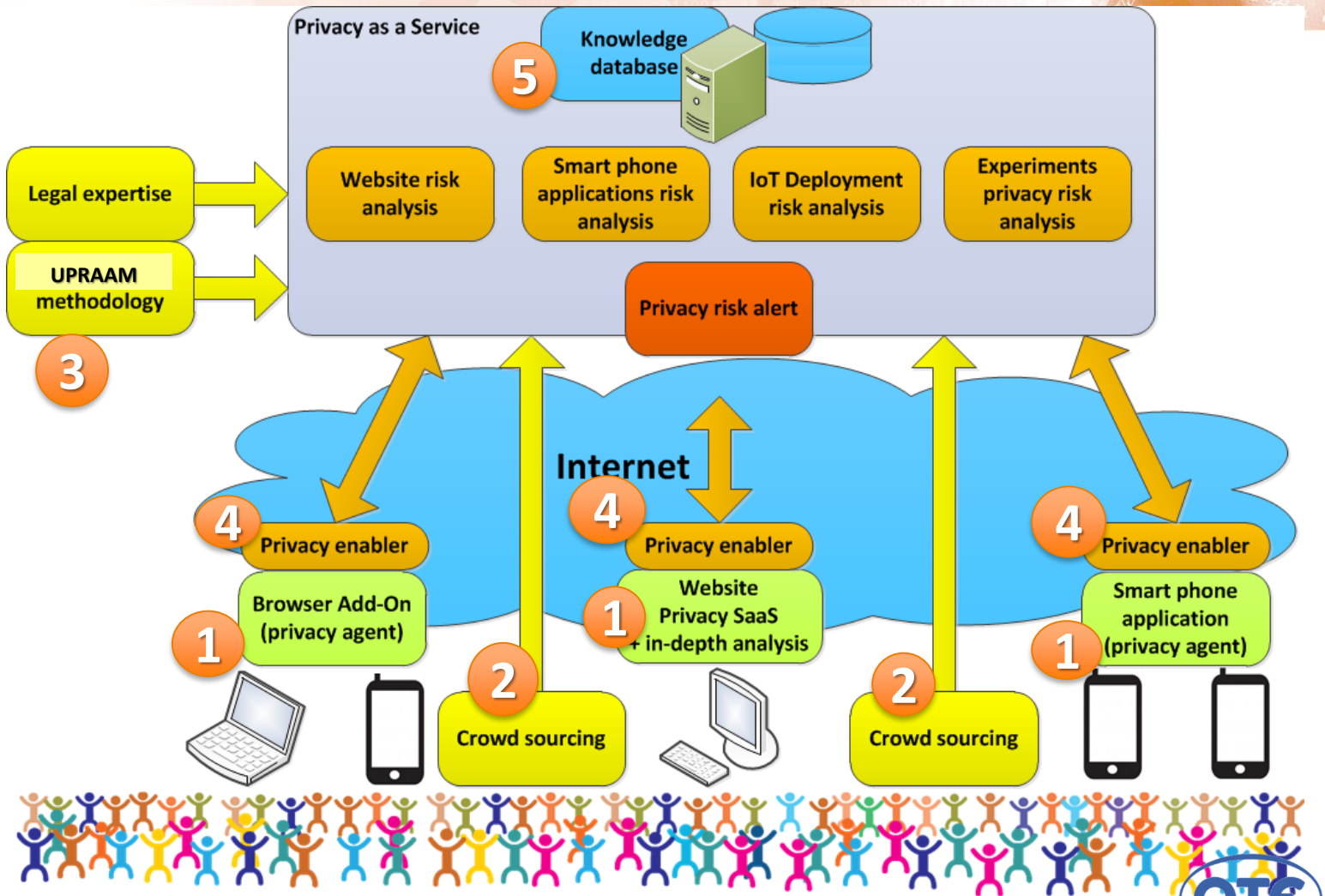
1. *Three user-friendly and freely available tools for citizens*
2. *Distributed crowd-sourcing privacy monitoring platform*
3. *Universal Privacy Risk Area Assessment Tool & Methodology (UPRAAM)*
4. *Privacy enablers*
5. *Global knowledge database on privacy risks*



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Key Technical Development_(1)

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T4.4 T4.2

Smart phone app MA

T2.3 + T3.2

UPRAAM

T4.3

Browser add-on MA

T4.1

T4.5

PF Server (IoT Lab)

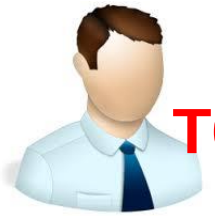
T4.2

T4.6

PF Website

Knowledge Database

T3.3



T6.4

In depth analysis

MA = Monitoring Agent

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Links to International Fora, Exploitation and Dissemination Strategy

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Links to International Fora

- **ITU-T SG20** (MI)
- **IoT Forum & AIOTI** (DNET, MI)
- **IPv6 Forum** (UL, MI)
- **ETSI ISG IP6 (**UL, OTE, MI, UoA)
- **IETF, IEEE** (UL, MI)
- **W3C** (Velti)
- **Digital Enlightenment Forum** (CTI, MI)
- **European Union Agency for Network and Information Security (ENISA)** (CTI)
- **OWASP-** (CTI)

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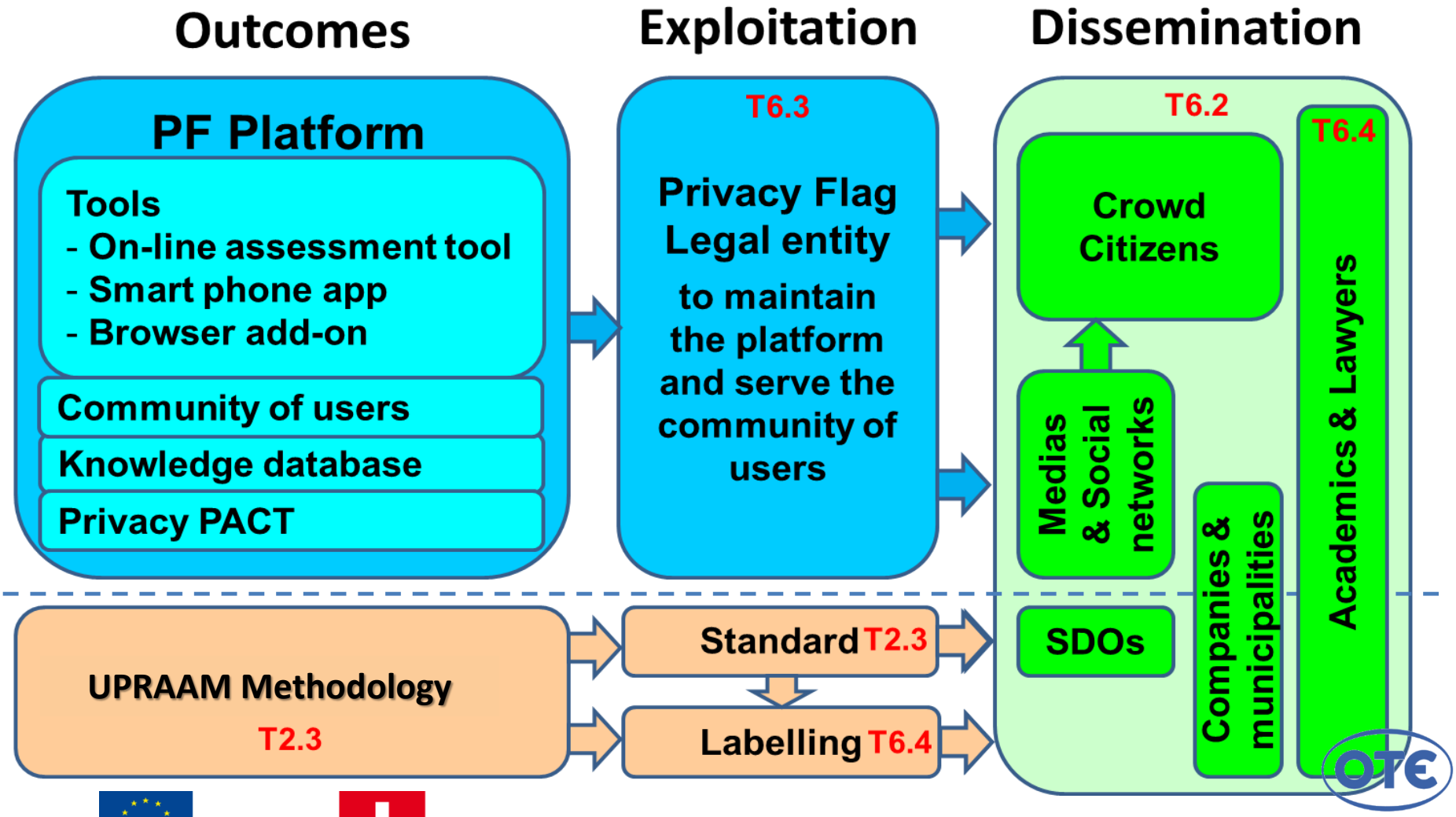
Exploitation Strategy



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Targeted Communication Strategy

Target group	Technical level	Main focus	Communication means
Public / citizens	• Understandable by a large public of non-specialists	• Privacy Flag tools dissemination • UPRAAM and personal data protection • Project presentation • Societal and economic benefits	• Media • Project website • Social media • Consumers and privacy protection communities • App. stores
Research community	• High level on the scientific and technical innovation and more accessible level on the legal dimension	• Project presentation • Scientific innovation	• Conferences • Publications • Specialized networks/fora • Project website • Social media / twits
Legal community	• High level on the legal dimension and more accessible level on the technical dimension	• Legal aspects, including Privacy Risk Area Assessment tool and voluntary binding mechanism	• Conferences • Publications • Specialized networks/fora
Industry, SMEs and public administrations	• Focus on the technology enablers and potential business opportunity, economic exploitation and societal benefits	• Project presentation • Pilots opportunities • Cooperation with their products and solutions • Scientific and technical innovations • Business opportunities • Societal benefits	• Direct contacts • Advisory Board • Platforms, such as Cleanweb Initiative, • Conferences and fairs • Publications • Project website

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Project Structuring

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Work Plan

- **WP1 Architecture design** will analyze end-user requirements to adapt and design a Privacy Flag architecture and process that will provide framework for activities in other WPs.
- **WP2 Privacy risks analysis and modelling** will research the privacy-related legal, technical and societal risks and design the privacy risk analytical framework.
- **WP3 Assessment tools** will research and develop the risk assessment tools, including the crowd-sourcing tools for risk assessment and data valuation, the in depth evaluation tools and the Voluntary compliance commitment tool.
- **WP4 Technical enablers** ill focus on researching and developing technical enablers, including the smartphone application, the browser add-ons and the security and privacy enablers.
- **WP5 Integration, tests and validation** will interconnect and integrate the various pilot buildings with the Privacy Flag platform, including the database and server implementation, the website and backend management platform, as well as end-user tests and validation.
- **WP6 Outreach, dissemination and exploitation** will focus on the dissemination and exploitation of the results, including the implementation of the business plan envisaged for the sustainability of the crowdsourcing platform and community.
- **WP7 Coordination and management** will deal with the day-to-day management of the project.

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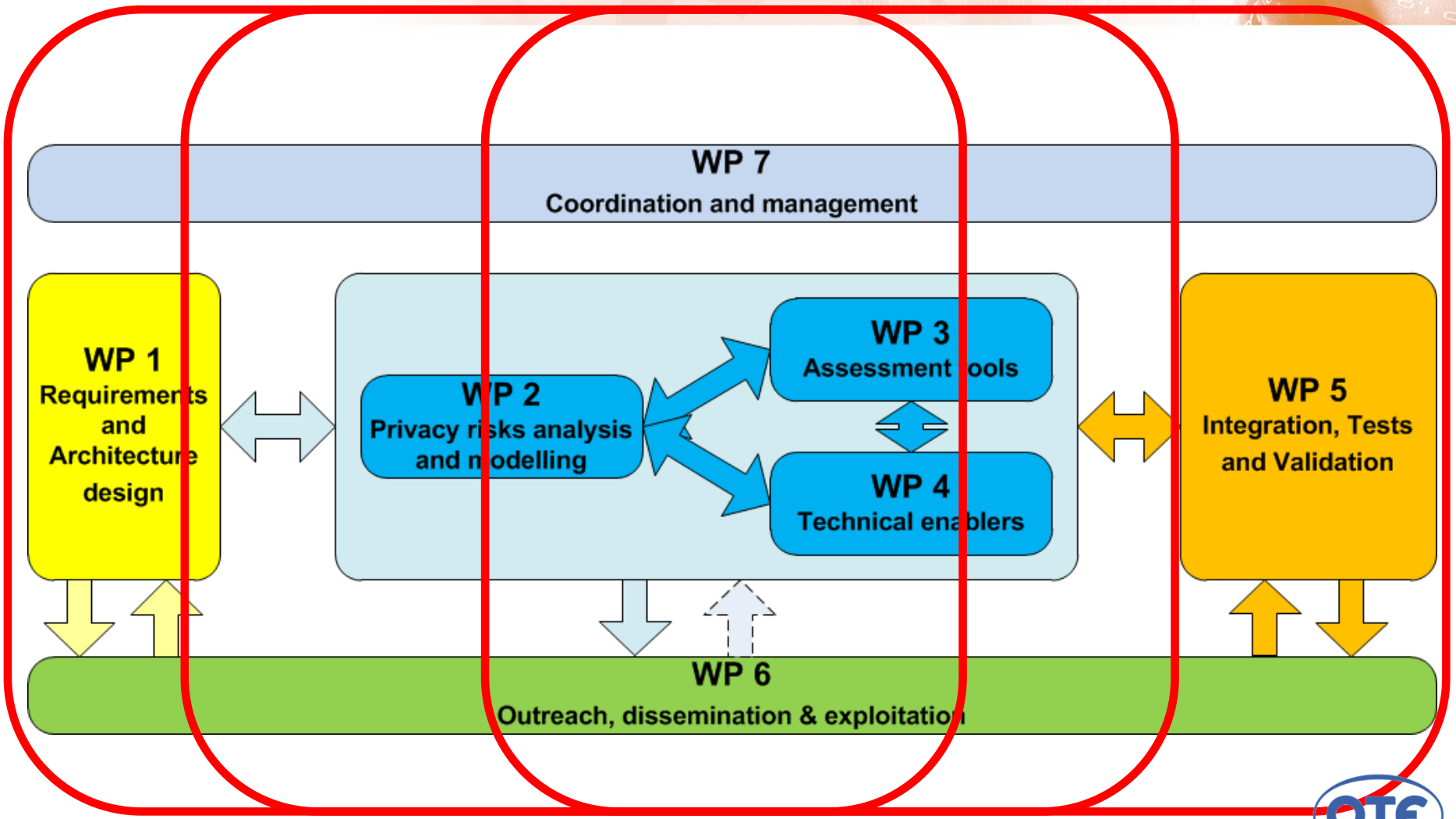
WP Structure



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Expected Outcomes

1. Three user-friendly and freely available tools for citizens
2. Distributed crowd-sourcing privacy monitoring platform
3. Universal Privacy Risk Area Assessment Tool & Methodology
4. Privacy enablers
5. Global knowledge database on privacy risks
6. Voluntary compliance commitment tool
7. On-line resources
8. In-depth privacy risk analysis on-line tool
9. Contributions to labelling and certification processes
10. Contributions to standardization on privacy

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Impact

Providing an on-going platform for privacy protection

Improving privacy and personal data ownership

- *Improving privacy risk detection*
- *Improving personal data valuation*
- *Rebalancing the inherent asymmetry in ICT data protection*
- *Scalability and viral dissemination*
- *Designing a open standard for privacy risk analysis*
- *In-depth analysis, labelling and certification*

Societal impact and user awareness

- *Towards a democratic model of privacy management*
- *Extending the geographic scope of personal data protection*
- *Exploring potential room for a new international convention*
- *User awareness*

Economic Impact

- *Rebalancing and mitigating unfair competitive advantages*
- *Supporting European SMEs and industry*

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Latest Achievements

- Improvement of the architecture
- Data protection policy
- UPRAAM methodology
- Browser add-on
- PF smartphone application
- PF website and IoT deployment evaluation
- PF Observatory and Early Warning System (EWS)
- Security enablers
- Privacy PACT
- Support to UPRAAM-*based* certification scheme
- End-user validation
- Dissemination and outreach activities

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Y3 Priorities

- End-user validation of the tools
- Fine-tuning
- UPRAAM extension
- Building the crowd community

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Thank you!

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For Further Communication

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