KRAKEN Overview

Data Platform Projects (ICT-13): Workshop 1

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1. General Overview
2. Status & Achievements
3. Relevant topics
4. Lessons learnt
5. BDVForum 29th November 2021
KRAKEN OVERVIEW

EU Horizon 2020 R & I programme under grant agreement No 871473

KRAKEN is an Innovation Action part of the Big Data Value Public-Private Partnership (PPP)
36 months from December 2019 to November 2022
Atos coordination

5M € 10 Partners

6 Countries
Spain
Italy
Austria
Slovenia
Belgium
Finland

www.krakenh2020.eu
Overcoming Challenges

Removing obstacles which prevent citizen’s controlling and widely sharing their personal data by implementing a highly trusted and secure yet scalable and efficient personal data sharing and analysis platform adapting state-of-the-art technologies

- Promoting fair-trading protocols and incentive models
- Avoid Loss of control over data enabling decentralized, open standards-based and self-sovereign identity management and user centric access control to personal data in support
- Demonstration in in two high-impact pilots – Health and Education – consolidating lessons learned for generalizing adoption in further economic sectors
- Developing easy-to-understand privacy metrics and usable interfaces for end users and data Subjects metrics & Usability
- Complying with regulatory and technical constraints such as data protection laws, authentication frameworks
KRAKEN Pillars

The Self-Sovereign Identity paradigm, to provide a decentralized user-centric approach on personal data sharing.

A data marketplace, which will allow the sharing of personal data and its corresponding Artificial Intelligence/Machine Learning analysis, all while preserving privacy.

A set of different analytic techniques based on advanced crypto tools that will permit privacy-preserving data analysis.
Main achievements M1-M24

• Final KRAKEN platform architecture
Main achievements M1-M24 SSI solution

• SSI components
Main achievements M1-M23 Crypto solution

- Data analytics using SMPC

A) Data Owner uploads data
B) Data Owner makes data available
C) Data Consumer requests analysis
D) MPC Nodes perform analysis (privacy-preserving!)
E) Data Consumer gets (only!) result
1. Definitions
   1. Legal framework implemented in architecture and front-ends
   2. KRAKEN network topology and policies

2. Development:
   1. Back-end with integrated systems toward completion
   2. User workflows for BIO batch data and EDU data exchange implemented
   3. Preliminary legal validation

3. User and market requirements gathering:
   • Multiple requirements gathering sessions with potential users
   • Key business cases defined: batch data, Data Unions, SMPC
   • FIAT payments system designed
Main achievements M1-M23

- **ETHICAL & LEGAL FRAMEWORK**
  - August 2020

- **KRAKEN PLATFORM DESIGN FIRST DELIVERY**
  - November 2020

- **KRAKEN SSI, CRYPTO SOLUTIONS FIRST DELIVERY**
  - July 2021

- **HEALTH & EDUCATION USER STORIES**
  - September 2021

- **KRAKEN MARKETPLACE FIRST DELIVERY**
  - September 2021

- **FINAL KRAKEN ARCHITECTURE**
  - September 2021

- **KRAKEN PLATFORM TESTING AND VALIDATION**
  - November 2021

**BUSINESS**

- **INITIAL MARKET ANALYSIS**
  - September 2020

- **FINAL MARKET ANALYSIS**
  - November 2022

- **FINAL EXPLOITATION ANALYSIS**
  - November 2022
Lessons Learnt/Obstacles to overcome

- SSI standards and specifications are evolving quickly and not completely defined yet. Need to react actively (e.g. EBSI/ESSIF).
- Integration of different technologies implies effort and coordination: SSI-marketplace, SSI-Crypto, SMPC-Marketplace.
- Marketplace user malicious behaviour need to be considered in deep.
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