

**ESSnet SMART SURVEYS  
2020-2021**

**INTERMEDIATE MEETING 6-7 OCTOBER 2020**

**WORK PACKAGE 3: STARTING IDEAS FOR THE PLAN OF  
POCS**

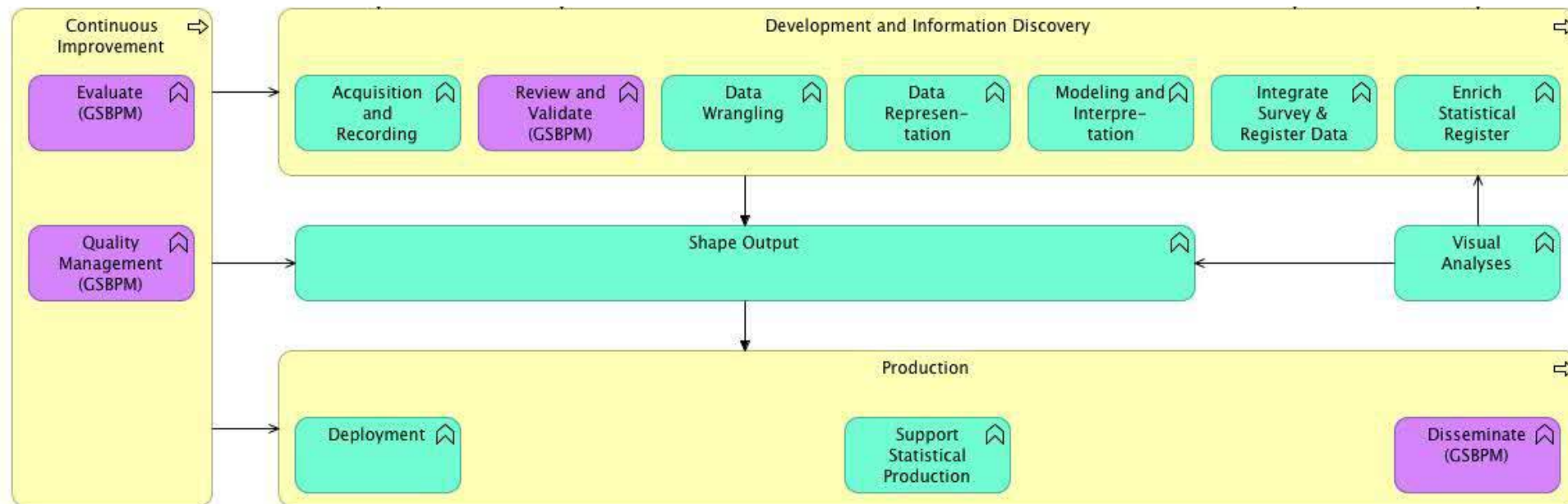
## Outline

- POC on IT platform
- POC on metadata
- POC on privacy
- POC on incentive schemes
- POC on machine learning techniques

## POC on IT platform

### Use case:

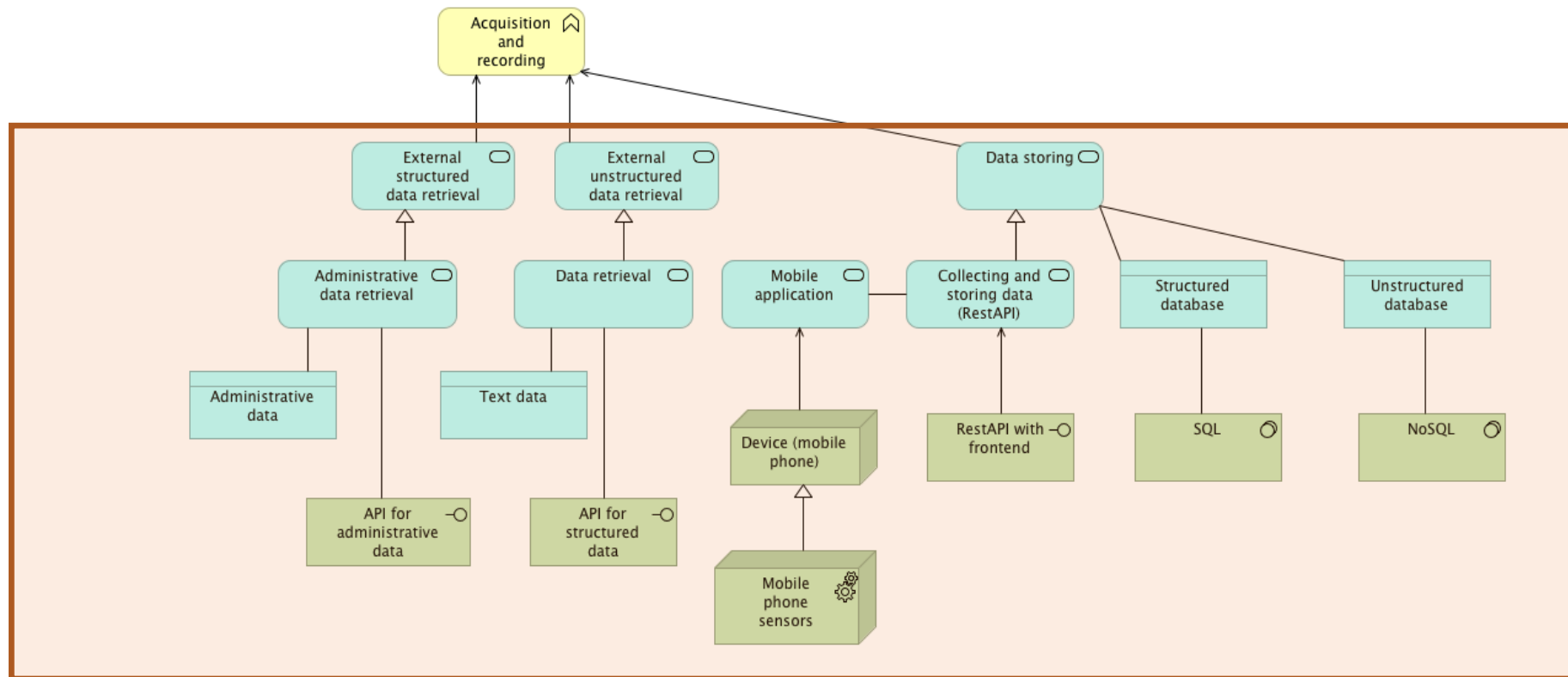
Model Time Use Survey (**TUS**) or the Household Budget Survey (**HBS**)  
using **BREAL** (Big Data REference Architecture and Layers) as a reference model



# POC on IT platform

## Outcome:

Main process steps of Time Use Survey (**TUS**) or the Household Budget Survey (**HBS**) focusing on **IT platform components**



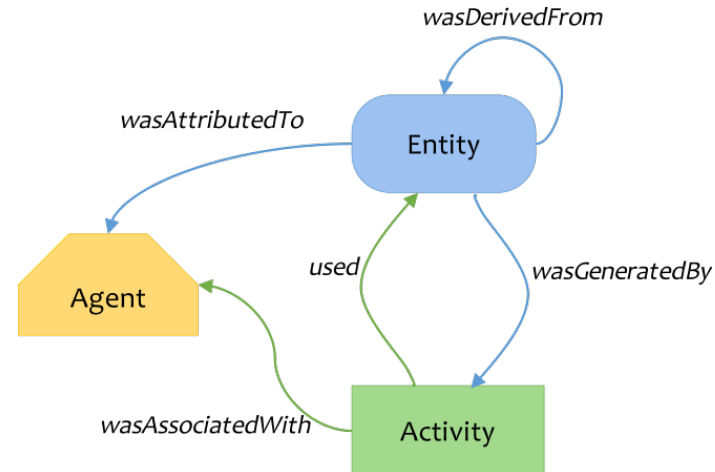
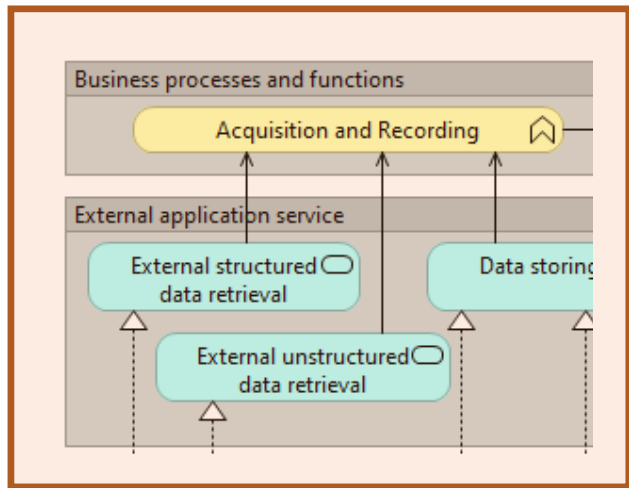
## POC on metadata

### Use case:

Model Time Use Survey (**TUS**) or the Household Budget Survey (**HBS**) data collection, focusing on **sensor data**

### Input:

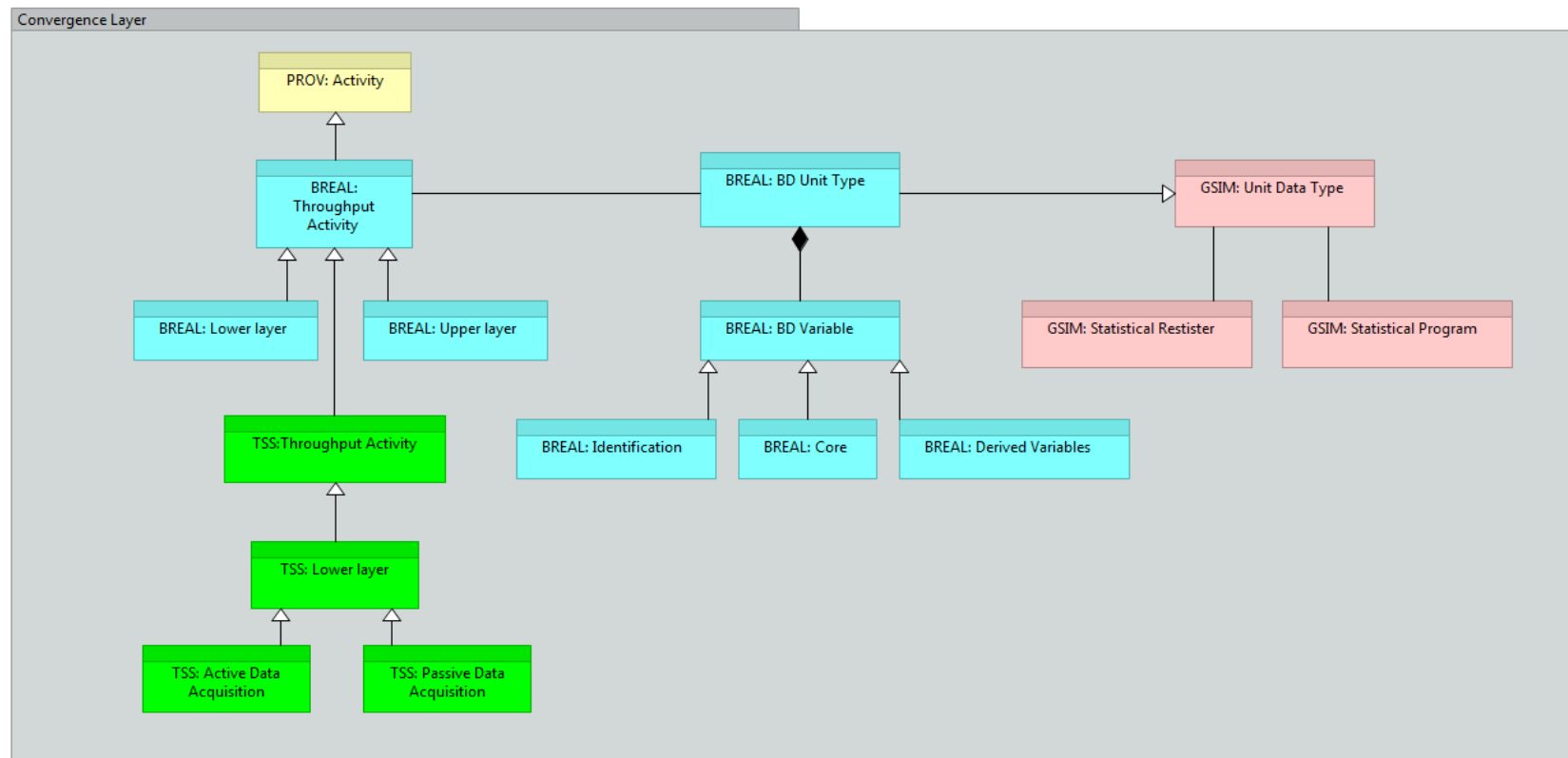
Process steps analysis resulting from 'POC on IT platform' + frameworks supporting process standardization (ontologies, official statistics standards)



# POC on metadata

## Outcome:

Model TSS metadata focusing on **sensor data**



## POC on privacy

### **Use case:**

Prototype privacy-preserving techniques applicable for Time Use Survey (TUS) or the Household Budget Survey (HBS) data collection

### **Input:**

Assess the Privacy by Design guidelines

Apply the Risk and Research Value Assessment

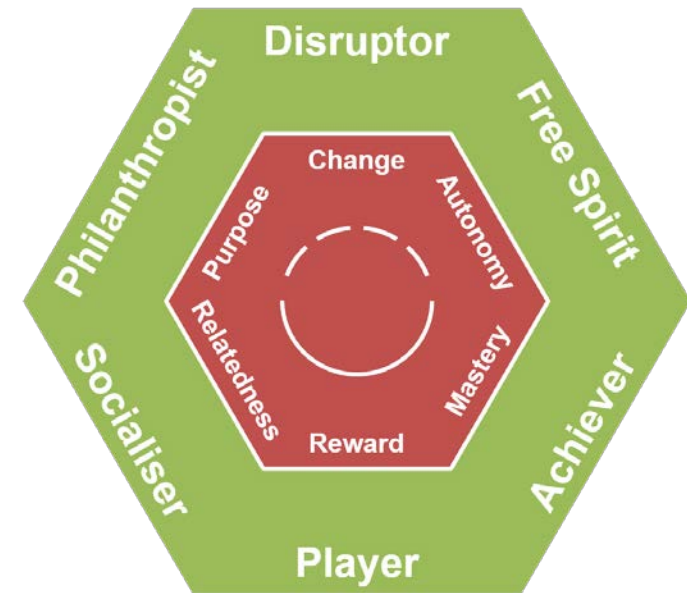
MPC on homomorphic encrypted datasets collected using TUS or HBS app

Note: TUS or HBS apps may be adjusted for this MPC POC, or datasets may be especially prepared for this purpose

## POC on incentive schemes

### Use case:

Model incentives based on gamification for Time Use Survey (**TUS**) or the Household Budget Survey (**HBS**) using the **Gamification User Types Hexad** Scale.



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# POC on machine learning techniques

## Use case:

On Time Use Survey (TUS) / Household Budget Survey (HBS)

**Development of ML components designed for a specific survey.**

## Focus on:

- GSBPM data collection from sensor:

- Identification of activities (TUS)
- Points Of Interest (TUS)
- Photo of Receipts OCR, image segmentation (HBS)
- BARCODE scan (HBS)

- HOW:

- Training ML models from available datasets
- Cloud solutions e.g. Google/Azure API
- Trained libraries (TESSERACT)

WE DID SOME EXPERIENCES ABOUT THESE POINTS

# POC on machine learning techniques

## Use case:

On Time Use Survey (TUS) / Household Budget Survey (HBS)

**Development of ML components designed for a specific survey.**

## Focus on:

- Others GSBPM phases:
  - Coding and classify (HBS)
  - Treatment of missing values and imputation
- Input:
  - Self made datasets
  - On line datasets
  - WP2 available datasets

# Discussion

