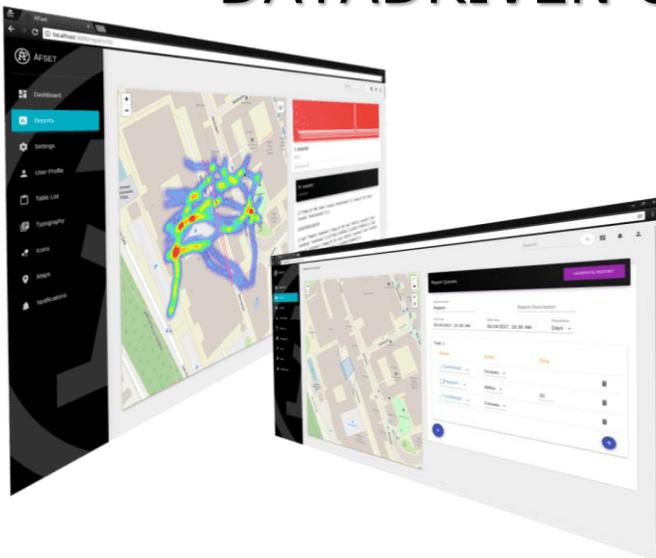




# DATADRIVEN CROWD ANALYSIS



## Challenges:

Events are getting bigger, existing locations and adjacent infrastructure are used at or over capacity. It is difficult to get real time data of the flow of people. Lack of information to decide on necessary actions.

## Approach:

Utilizing AI powered GDPR-compatible sensors to visualize people flow and area usage. Bottle necks or fast flow changes can trigger events to allow for faster reaction.

## Outcome:

Understanding of crowd behaviour through

- Visualization of real time information on crowd flow
- Ability to react on inconsistency

## Challenge for the industry today

Big collections of people often rise the need to understand and optimize their flow for safety or efficiency reasons. Scenarios might include queueing at entrances or counters for big events, at a retail store, or in public transportation.

Existing measures to control crowd flow need real time data in order to be effective. This data is lacking many times, as the counting is done manually by personal, or estimations are used. Furthermore there is no information on movement, conjunctions, speed, of the flow in the crowd available.

Understanding movements and location of people helps greatly to predict flows and have data-driven indicators as basis for decisions on control measures.

## Service and Approach

By having access to real-time analytics on the flow of people, you will be able to make relevant decisions at an earlier point in time. This will increase the security and make the event more pleasurable for everyone. You may also want to limit the number of visitors for fire safety reasons or optimize the flow for efficiency reasons.

Analyse large open areas with flying drones in real time and get a reliable count of the amount of people that has been gathered and how the crowd is moving.

By real-time analysis of crowd data you can make last minute adjustments of crowd control measures. You can

also determine where staff is needed most at any given time.

## Expected Outcome

Flowity uses the latest dense crowd simulation models tuned for the most common scenarios to give you the best predictions and forecasting of your events.

Using existing video systems, or installing separate sensors, Flowity will process the data on the Edge, ensuring GDPR compatibility to offer anonymous data to the Visualization App or to existing systems through an API.

With this data Flowity offers indicators like:

- Visitor count & variation over time
- Estimations on growth / decline
- Locations of potential bottlenecks
- Events triggered by thresholds



**Fredrik Hofflander**

Fredrik.Hofflander@afry.com

+46 10 505 09 51

Section Manager AI/ML Gothenburg