

Observe

semantic context-based content recommendation for adaptive public screens

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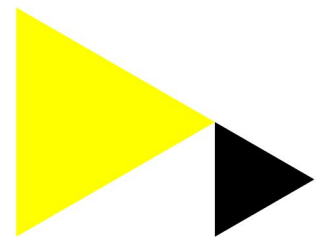
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Observe: Semantic Context-based Content Recommendation for Adaptive Public Screens

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MOTIVATION

Media screens are found in many urban public spaces. The social potential of these public screens smart cities have been recognized. Currently, audiovisual content is often pre-programmed in repetitive loops, ignoring the context.

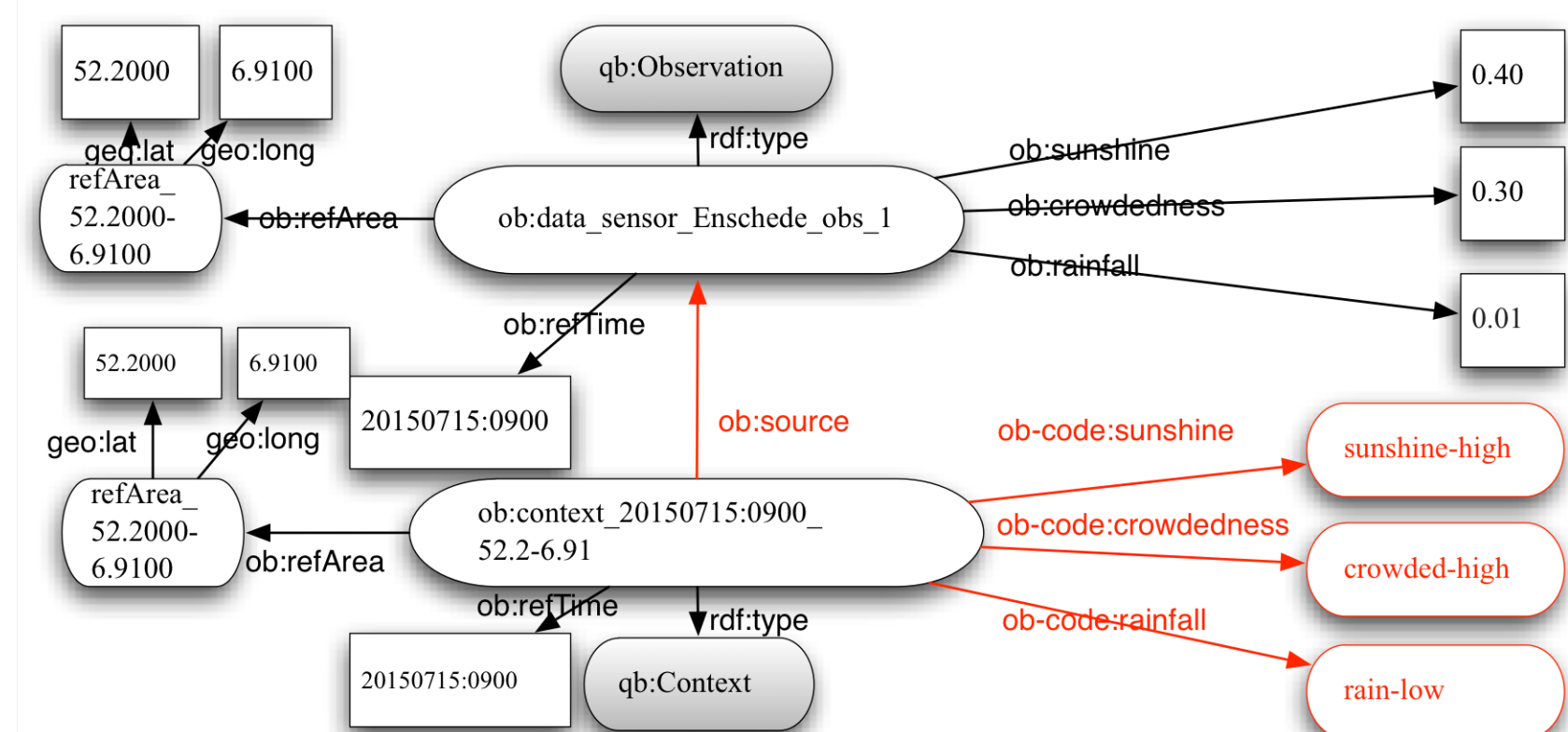
For effective use of interactive public displays in smart cities, **adaptivity** to this context is one of the key design challenges key.

SEMANTIC CONTEXT AND CONTENT MODELS

We use Semantic Web standards and models to model these context profiles allowing for easy reuse (such as RDF Data Cube) and structured data from the Semantic Web.

A *context* is defined by a specific location and a timestamp, this is also used in the URI of the context. It is linked to one or more *observations*. These observations can either come from (linked) open data (for example <http://linkedgeodata.org>) or from sensor data.

<http://semanticweb.cs.vu.nl/observe>



SENSORS

An example of a sensor used in the Observe system is the sensor that detects crowdedness in front of the screen. The crowdedness sensor consists of three components: a camera, a capture device that captures pictures and a recognition server.

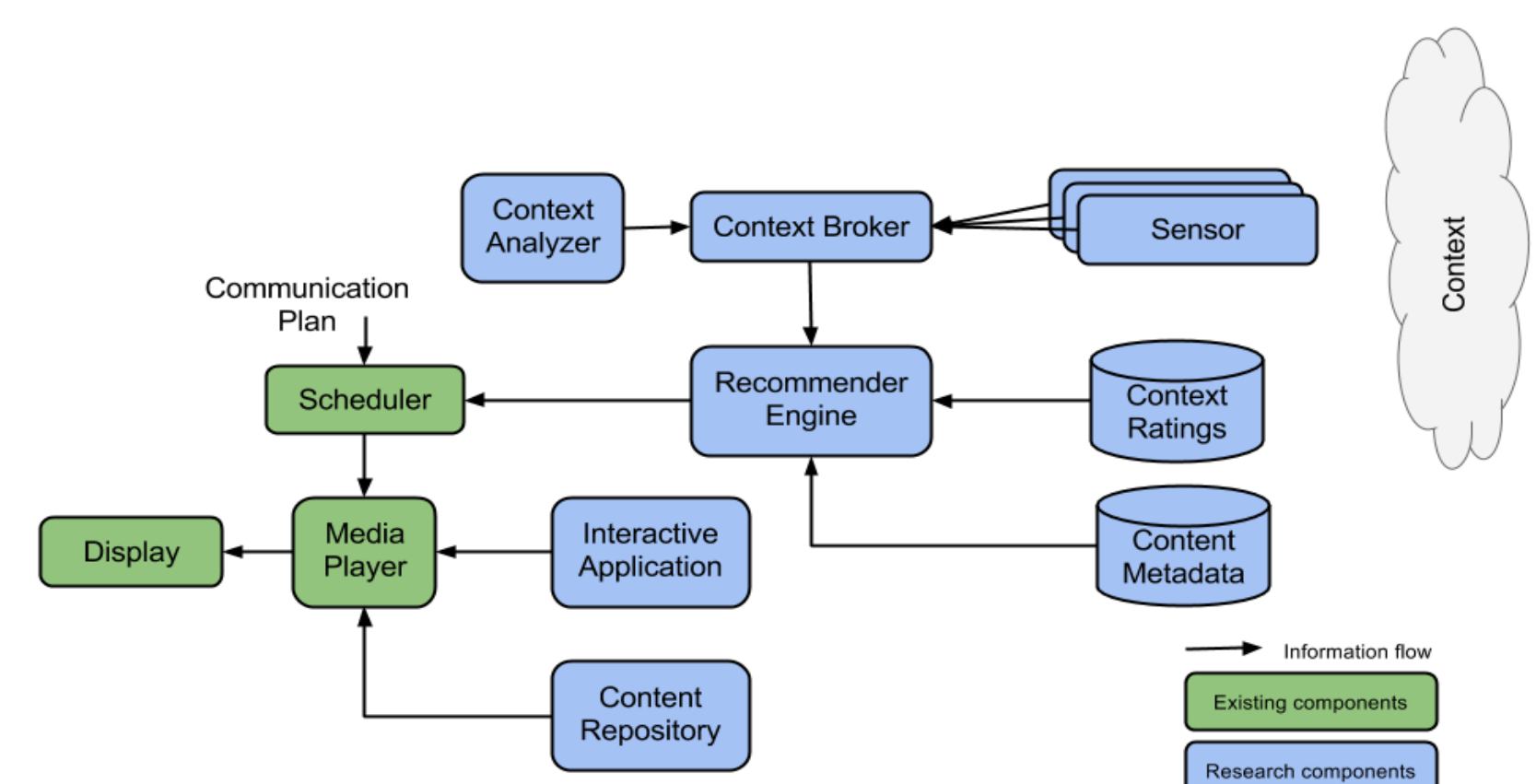


RECOMMENDER SYSTEM

Content selection is done by comparing the current values in the context profile with the *metadata of the content*. Including information about the context for which the content is suitable.

The recommender uses OptaPlanner to optimize a playlist based on:

- Match between current context and content profiles.
- Constraints (non-repeating, uniqueness, time-constraints)



PRELIMINARY EVALUATION AND PILOTS

Manually created content items (n=29) in 7 different categories: Advertisement and promotion, Arts and Culture, Influencing the mood, Entertainment, Information, Participation, Communication to the public. Each piece of content was rated for different contexts. For 7 contexts, we generated playlists and let experts (n=6) compare them to random playlists. Results show that in 62% of the cases the optimal playlist was preferred.

Two pilots in Enschede (www.actmedialab.nl/resultaten-eerste-pilot-observe/) show different user groups interact differently with the screen

PRESENTER



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