



SEVENTH FRAMEWORK PROGRAMME

FP7-ICT-2011-1.5 Networked Media and Search Systems
b) End-to-end Immersive and Interactive Media Technologies

Specific Targeted Research Project

VENTURI

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immersiVe ENhancemEnT of User-woRld Interactions

[D4.1 Synchronized dataset containing a dump of all on-board sensors of a real device]

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Document Control Page

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1.0	30/03/2012	Paul Chippendale	Final review by the coordinator

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1.1 Scope

This document presents a brief description of the VENTURI data-sets.

1.2 Audience

This deliverable is private.

1.3 Summary

In this document, a brief description of the data-sets created for testing and developing the VENTURI platform and algorithms will be given. This document will be updated as new datasets are added, both public, private and internal.

Some datasets are directly related to specific algorithms designed and implemented during the project, especially in the context of WP4. They contain all relevant data for the considered algorithm; i.e. any combination of synchronized audio and/or video and/or hardware sensor (accelerometers, gyroscopes, compass, GPS, pressure sensor, etc.) streams. In some cases, high-quality ground truth data is provided to better evaluate algorithm performances. When possible, links to well known public external datasets are provided as well.

Other datasets presented here are representative sequences of the real world Use Cases addressed by VENTURI, as defined in WP2. Also in this case, synchronized streams and ground truth data are provided, when possible.

Some of the datasets will, in time, be shared with the community in the public section of this website. This page: <https://venturi.fbk.eu/reserved/datasets/> lists all datasets, including those sequences that are to be considered private to the VENTURI consortium.

2. Datasets

2.1. Use Case datasets

2.1.1. Year 1 dataset relating to the Gaming scenario

These sequences have been captured on a Galaxy Nexus (ICS) Smartphone using the data acquisition tool created by FBK, available on Steerforge (https://www.steerforge.com/file/showfiles.php?group_id=197) . This dataset (see website for link) was acquired by metaio to stimulate the discussion about the content of the final dataset for the gaming use case. The dataset contains five sequences: each sequence has one or more videos along with the full sensors data dump.

The sequences are:

1. **Roundabout:** wide and full circle around the models keeping a 2D marker in the field of view, multiple markers are placed close to the city model
2. **Closeup:** close view of two or three places in the virtual city, starting from far away, get closer, almost to street level, and back.
3. **From atop:** for the same places in 2, a medium distance sequence centred on the first, then moving to the second, etc.
4. **On the streets:** one road with a 90 degrees turn, followed closely with the camera to simulate a user driving a virtual car.
5. **Gaming:** a longer sequence simulating a gaming session

2.2. Algorithm specific datasets

All datasets related to task T4.1 were acquired by INRIA and can be downloaded here (<https://venturi.fbk.eu/wp-content/uploads/2012/03/INRIA-Dataset.20120328.zip>) (zip, 41.0M, created on Mar 28, 2012) in a single zip file together with a document describing the dataset.

We have used two platforms to capture the data: the VENTURI platform and a Samsung Nexus S device. For each dataset we detail the precise device position with respect to the user (in-hand, chest-mounted, belt-mounted, or in-the-pocket), geometry of the path, distance walked (if needed) and folder name inside the zip file) where the data can be found. Dataset includes:

- Step detection and estimation of the distance walked (for T4.1.1). Geometry of the path: 30m straight line. Ground Truth: two markers at the start and the end points. User height for the acquisition: 165cm. Distance walked: 30m.
- Stairs detection (for T4.1.2). Geometry of the path: 8 steps, straight line (going down and going up). Ground Truth: none.
- Running detection (for T4.1.2). Geometry of the path: 30m straight line. Ground Truth: none.
- Sitting detection (for T4.1.2).
- Jumping detection (for T4.1.2).
- First map aided positioning dataset (for T4.1.3). Geometry of the path: 51.5m x 18m. Ground Truth: OpenStreetMap file and map provided.
- Second map aided positioning dataset (for T4.1.3). Geometry of the path: two rectangles (25.5m x 18m). Ground Truth: OpenStreetMap file and map provided.
- Third map aided positioning dataset (for T4.1.3). Geometry of the path: straight lines, curve and 90degrees turns. Ground Truth: OpenStreetMap file, map and YouTube video.