Quividi and Privacy Protection

February 7, 2020

info@quividi.com
+33 (0)1 40 33 19 65
+33 (0)6 62 71 90 35

Quividi
43 rue de Douai
75009 Paris - FRANCE

1 – Introduction

Quividi is a European company based in Paris, France. Quividi's product line includes software solutions used to detect and qualify the presence of people in front of an object of interest and, in particular, in front of screens in a Digital Signage installation.

The following document describes in detail the audience measurement data generated by Quividi's VidiReports software and the compliance of said data to consumer data privacy best practices. The current documentation applied to all VidiReports versions up to VidiReports 7.

Quividi's VidiReports software uses images from a camera sensor (usually a webcam) and a suite of proprietary real-time image processing algorithms to:

- detect the presence of human faces in the digital images provided by the camera sensor;
- estimate the time spent by a detected person in the camera sensor's field of vision and the time spent looking at the screen
- optionally assign a set of anonymous qualifying tags to each detected person, such as gender or age information.

Quividi's VidiReports converts video images into a set of abstract numeric descriptors, while fully respecting privacy since:

- VidiReports does not perform face recognition but only face detection;
- image processing takes place in real time and at no point in the processing chain is the visual information stored on non-volatile memory or relayed elsewhere;
- the abstract numeric descriptors constitute aggregate anonymous data;
- multiple VidiReports installations are totally independent and do not communicate locally, thereby preventing long-range tracking of people moving about a public space.

Quividi's solution is used in public places for audience measurement, content adaptation and interactivity purposes. The solution is deployed in a variety of venues, including shopping centers, shops, agencies, services, and transportation networks.

2 – Non-Persistency of Video Images

A digital video frame, as captured by a webcam, an IP camera or by an analog camera coupled with a frame grabber, is relayed to the processing unit running VidiReports as a stream of binary digits.

The physical layer is usually a USB connection but can also be a local Ethernet or Wireless link. The video image is stored in RAM (volatile memory) for the time necessary for analysis and processing; this time is dependent on the computing platform varying between a minimum of 66 milliseconds and a maximum of 200 milliseconds.

The volatile storage area in which incoming digital images are stored is overwritten each time a new image is delivered thereby erasing all trace of previous visual information. As a consequence, no visual snapshot as is remains in the system for more than a few hundred milliseconds.

VidiReports, as most image processing systems, employs longer-term processing for computer vision tasks such as background extraction and motion estimation. These algorithms rely on long-term averages of video information which, by definition, are fully static and do not contain any information which could be used to visually identify people or activities.

Quividi's software is not a video surveillance system: it does not record or relay any video image, it does not compute biometric descriptors and no video feed is provided to an external operator or device during use. As a consequence, Quividi's solutions do not fall within the scope of European and international legislation relative to video surveillance and the access to recorded images.

3 – Anonymity of VidiReports Data.

The data produced by VidiReports are fully anonymous as there is no way to link these data back to a specific person.

Quividi's solution produces the following set of completely anonymous data for each detected person:

```
[counter, machine_ID, start_time, dwell, attention, gender, age,
mood, features, distance, num_glances]
```

where:

- **counter** is a consecutive number for the (qualifying) data set;
- **machine_ID** s the identification number of the machine processing the data;
- **start_time** is the date and time of the identification start;
- **dwell** is the sum of the time a person spends in the camera sensor's field of vision;
- **attention** is the sum of the time the viewer spends on the screen;
- **gender** [optional] is the estimated gender of the person;
- **age** [optional] is the estimated age of the person;

- **mood** [optional] is the person's estimated mood, from very sad to very happy;
- **features** [optional] presence of beard, mustache, glasses, sunglasses;
- **distance** is the person's average distance from the camera;
- **num_glances** is the the number of times the person looked away from the screen.

Note that demographic and feature-based information can be turned off if desired and that VidiReports can be shipped without the necessary components to perform demographic analysis. Furthermore, no form of facial biometric data is ever computed by the software so that it is impossible for VidiReports to re-identify a person once the person has left the field of view of the camera. In other words, the system permanently "forgets" detected people as soon as they are no longer visible.

After the data are produced, two utilizations are possible:

1. the data are recorded into a local database which is periodically uploaded into a central database and aggregated for analysis. There is clearly no possibility to link any of the recorded information to a specific person, since only anonymous metadata are stored. In particular, these data could not be crossed with any other database to identify individuals.

2. the data are sent in real time to an external device such as a video player to trigger an action adapted to the current context; for example to play a video or a sound when a person comes within a given distance or when the audience fits a desired demographic profile.

4 – Compliance with the GDPR

Quividi's VidiReports has been audited by German privacy specialist ePrivacy GmbH, who granted their EU ePrivacySeal to the software. This seal guarantees the compliance of Quividi's solution with ePrivacy's criteria catalogue, which includes the requirements imposed by the General Data Protection Regulation (GDPR).

5 – Conclusions

Quividi's VidiReports solution uses advanced image processing techniques to provide non-identifiable and non-visual information to databases and devices, for marketing purposes.

It is designed to provide insightful data by means of fully anonymous measurements and complies with today's most stringent data protection regulations.

For Quividi
Paolo PRANDONI, CSO