

Data Protection Impact Assessment

Anonymous audience measurement on AdVinci digital advertising totems

Public summary – v1.0 – 6 October 2026

Controller	AdVinci – P.IVA 02154870436 – Loc. Parolito, 62027 San Severino Marche (MC), Italy
Contact	privacy@advinci.it – +39 350 525 8588
Data Protection Officer	Matthew Kirk – privacy@advinci.it (see section 9)
Legal reference	Art. 35 Regulation (EU) 2016/679 (GDPR); Garante decision no. 467 of 11 October 2018 (list of processing requiring a DPIA)
Version / date	1.0 – 6 October 2026
Next review	Before go-live, then at least once a year and before any change to the system
Privacy notice	advinci.it/privacy-totem

Conclusion in brief. Cameras on each totem face are used only to count passers-by and vehicles and to measure how many people look at the screen, and for how long. Images are processed in the device's memory within a fraction of a second and are never stored or transmitted. There is no facial recognition, no estimation of age, gender or emotion, and no tracking of people between screens or over time. With the measures in section 7 the residual risk to individuals is **low**, and prior consultation of the Garante (art. 36 GDPR) is not required.

This public summary reproduces AdVinci's DPIA of 6 October 2026. Internal operational and security details, such as the go-live action plan and the configuration of maintenance tools, are omitted so as not to weaken the protection of the system.

1. Why this assessment is carried out

The system uses cameras that observe a publicly accessible street on a continuous basis and uses innovative technology (artificial-intelligence image analysis). These are criteria listed in art. 35(3)(c) GDPR and in items 3 (systematic observation or monitoring) and 7 (innovative technologies) of the Garante's list of processing subject to a DPIA (decision no. 467/2018). Although the processing is small in scale and produces only anonymous statistics, AdVinci carries out this assessment before the system goes into service.

2. Description of the processing

2.1 Context and purpose

AdVinci operates digital out-of-home (DOOH) advertising totems. The first two are double-sided 55-inch totems in San Severino Marche (Viale Eustachio, and Viale Bigioli next to Piazza del Popolo); further screens

are planned, including at Macerata railway station. Advertisers and agencies require independent figures on how many people pass a screen and how many actually look at it, ideally per ad. The purpose of the processing is solely to produce these **anonymous audience statistics** to price, sell and report advertising.

2.2 How the system works

- Each screen face has a small USB camera mounted at the top-centre of the screen, about 2 m above the ground, angled slightly downwards towards the area in front of the screen.
- Both cameras connect to a Raspberry Pi 5 computer with a Hailo-8L AI accelerator, locked inside the totem. All image analysis happens on this device. There is no audio.
- The cameras deliver video at 1280×720; the device analyses 15 frames per second. Each frame exists only in memory and is overwritten by the next one within a fraction of a second. No frame is written to disk or sent anywhere.
- An object-detection model finds people and vehicles (car, van/truck, bus, motorbike, bicycle). A tracker gives each object a temporary number while it is in view, so that it is counted once; the number is discarded about 2 seconds after the object leaves the view.
- A face-detection model locates faces and five reference points (eyes, nose, mouth corners) only to estimate which way the head is turned. If the head is turned towards the screen (within about 30°), that moment counts as attention. No face template or biometric signature is created, and nothing about the face is kept.
- Vehicles are counted by type only. Number plates are not read and vehicle occupants are not analysed.

2.3 Data produced and kept

Data	Content	Where / how long
Video frames	Live images from the cameras	Device memory only, overwritten within a fraction of a second. Never stored or transmitted.
Temporary tracking state	Position and temporary number of each object in view	Device memory, deleted about 2 s after the object leaves view
Per-minute totals	Per screen face and minute: number of pedestrians, viewers, vehicles by type, average/total time in view and attention, frames processed	Pi: 30 days after upload. Cloud: kept as anonymous statistics
Visit records	Per person or vehicle: type, time entered and left view (to 0.1 s), periods facing the screen, total attention, viewer yes/no, a random record code. No image, no position, no tracking number, no link between screens	Pi: 30 days after upload. Cloud: 13 months, then deleted automatically every day
Ad play times	Which ad played when on which totem	No personal data

The visit records are anonymous in the sense of Recital 26 GDPR: they contain no identifier, image or characteristic of a person. A small residual risk is that a record could be matched to the same moment in other footage (for example a third party's CCTV). This risk is addressed in section 6 and is the reason for the 13-month limit.

2.4 Data subjects

Pedestrians, cyclists and motorists passing in front of the screens in a public street, potentially including minors. No category of person is targeted and no information is produced about any individual.

2.5 Recipients and processors

Party	Role	Data	Location / safeguards
Supabase	Processor (cloud database)	Per-minute totals, visit records, ad play times	EU region (Frankfurt). Supabase Data Processing Addendum with EU Standard Contractual Clauses, accepted with the terms of service
Mobile network operator	Transport only	Encrypted uploads (HTTPS)	No access to content
Advertisers and agencies	Recipients of reports	Aggregated figures only (per day, hour or ad play)	No visit-level data is shared
Ad player and its cloud platform	Not involved	None	The player's built-in face-recognition function is disabled and must stay so

3. Legal basis and legitimate interest assessment

The legal basis is **legitimate interest** (art. 6(1)(f) GDPR). Consent is not practicable for passers-by and is not needed for processing of this limited kind. No special categories of data are processed: the face detection used does not allow or confirm the unique identification of a person and therefore does not produce biometric data within the meaning of art. 4(14) and art. 9 GDPR.

3.1 Purpose test

Measuring the audience of advertising is a lawful and common commercial interest. Without independent figures, AdVinci cannot price its screens fairly, prove delivery to advertisers, or sell through agencies and programmatic platforms, which require audience data per ad play.

3.2 Necessity test – alternatives considered

Alternative	Why not chosen
Manual counts	Occasional only; cannot measure each 10-second ad or attention
Wi-Fi / Bluetooth phone tracking	Collects device identifiers and can follow people over time – more intrusive
Third-party mobile location data	Not specific to a screen or an ad; relies on data collected from phones
Commercial camera systems	Equivalent processing, many also estimate age, gender or emotion – more intrusive
Non-camera sensors (radar, depth)	Can count people but cannot reliably tell whether someone is looking at the screen. Will be re-evaluated as the technology matures

The chosen design is the least intrusive way to obtain per-ad audience and attention figures: images never leave the device, and only counts and times are kept.

3.3 Balancing test

- **Reasonable expectations:** people near an advertising screen in a public street can reasonably expect audience measurement when clearly informed by signs before entering the camera's view.
- **Impact on individuals:** no images are kept, no one is identified, profiled or followed, and no decision is taken about any person. The output cannot affect anyone individually.
- **Safeguards:** processing on the device, data minimisation, retention limits, access control and transparency (sections 6 and 7).
- **Precedent:** in its decision of 21 December 2017 (doc. web no. 7496252, Grandi Stazioni Retail) the Garante accepted legitimate interest for digital signage using face detection for audience measurement, under conditions including no image storage, layered information notices with a QR code, and periodic checks of the devices. AdVinci's system meets those conditions and is narrower: it does not estimate age, gender or emotion.

Conclusion: AdVinci's interest is not overridden by the interests or rights of the people concerned.

4. Data protection principles

Principle (art. 5 GDPR)	How it is met
Lawfulness, fairness, transparency	Legitimate interest (section 3). A5 notice on each screen face visible before entering the camera's view; full notice at advinci.it/privacy-totem (QR code)
Purpose limitation	Audience statistics for advertising only. No security surveillance, no marketing to individuals, no sale of visit-level data
Data minimisation	No images, no audio, no identification, no age/gender/emotion, no positions, no tracking between screens; times rounded to 0.1 s
Accuracy	Validation against manual counts before go-live and periodically; counting rules documented; the system records when a camera was not working
Storage limitation	Frames: fraction of a second. Visits: 13 months in the cloud (automatic deletion), 30 days on the device after upload. Only anonymous totals are kept longer
Integrity and confidentiality	Section 7
Accountability	This DPIA, the record of processing (annex), yearly review

5. Rights of individuals

Because AdVinci does not and cannot identify the people counted, articles 15 to 20 GDPR apply only if a person provides additional information enabling identification (art. 11 GDPR). In practice, no record can be linked to a person. The right to object (art. 21) is respected by informing people before they enter the camera's view, by processing images instantly without storing them, and by producing only statistics, in line

with the approach of European supervisory authorities to anonymous statistical camera processing. Anyone may contact AdVinci's Data Protection Officer at privacy@advinci.it and may lodge a complaint with the Garante per la protezione dei dati personali (www.garanteprivacy.it). No automated decisions or profiling (art. 22) take place.

6. Risk assessment

Likelihood and severity are rated for the people concerned, before and after the measures in section 7.

Risk	Before	Measures	After
People feel watched or are unaware of the cameras	Medium	Notices on every face before entering the view; full notice online; plain wording ('no recording, no facial recognition')	Low
Function creep: recording video, recognising faces, estimating age or gender, or using the cameras for surveillance	Medium	Software has no recording function; written commitment in this DPIA; any change requires a new DPIA; player's face-recognition feature disabled	Low
Unauthorised access to the device or a live camera image (hacking, theft)	Medium	Device locked inside the totem; access controls, key-based remote access and two-factor login; no live viewing in normal operation; semi-annual device checks	Low
Re-identification by matching visit times with other footage	Low	No image, position or identifier; times rounded to 0.1 s; visit records deleted after 13 months; access limited to AdVinci staff; only aggregates given to clients	Low
Breach of the cloud database	Low	Staff-only access controls; each device can only add data for its own screen; encryption in transit; EU hosting	Low
Monitoring of private property (windows, doorways)	Medium	Cameras angled down at the area in front of the screen; field of view checked at installation; nothing is recorded	Low
Minors counted	Low	No identification or profiling of anyone; minors are counted only as numbers	Low
Rights difficult to exercise	Medium	Information before entering view; no storage of images; statistics only; contact point and Garante complaint route given	Low

7. Measures

7.1 Already in place

- All image analysis on the device; frames held only in memory; no recording function in the software.
- No facial recognition, no face templates, no age, gender or emotion estimation, no tracking across screens or days.
- Temporary tracking numbers discarded about 2 seconds after an object leaves view; visit records carry only a random code.

- Uploads over HTTPS; each totem authenticates separately, can only add data for its own screen, and its access can be revoked at any time.
- Cloud data readable only by authorised AdVinci staff; EU region.
- Automatic deletion of visit records after 13 months (daily job) and of uploaded data on the device after 30 days.
- If a camera stops working the system records it, saves its data and restarts itself.

7.2 Before go-live

Before the system goes into service, AdVinci completes its installation and security checks – notices on every screen face, checks of each camera's field of view, hardening of access to the devices and accounts, and a validation study of counting accuracy – and keeps evidence of them.

7.3 Ongoing

- Check the devices at least every six months (software, access, camera angle, notices in place), as required by the Garante in the 2017 digital-signage decision.
- Do not view live camera images except briefly during installation or repair; never record them.
- Repeat this assessment before adding new functions, new kinds of data or a new type of location, and at least once a year.

8. Residual risk and conclusion

With the measures above, the residual risk to the rights and freedoms of individuals is **low**. The processing can start once the checks in section 7.2 are complete. Prior consultation with the Garante under art. 36 GDPR is not required.

9. Data Protection Officer

AdVinci has designated Matthew Kirk as its Data Protection Officer, contactable at privacy@advinci.it. A DPO is not mandatory at the current scale – the processing produces anonymous statistics from a small number of screens and does not involve large-scale regular and systematic monitoring of individuals (art. 37 GDPR) – but AdVinci has chosen to designate one.

Annex A – Record of processing activities (art. 30 GDPR)

Name of processing	Anonymous audience measurement on advertising totems
Controller	AdVinci, Loc. Parolito, 62027 San Severino Marche (MC) – privacy@advinci.it; DPO: Matthew Kirk
Purpose	Statistics on audience and attention for pricing, selling and reporting advertising
Legal basis	Legitimate interest, art. 6(1)(f) GDPR
Data subjects	People and vehicles passing in front of the screens
Categories of data	Momentary video images (not stored); anonymous counts, times in view and attention times
Recipients	Supabase (processor, EU); advertisers receive aggregated figures only
Transfers outside the EU	Data hosted in the EU; Supabase DPA with Standard Contractual Clauses covers any access from outside the EU
Retention	Images: fraction of a second. Visit records: 13 months. Aggregates: retained
Security measures	Section 7 of this DPIA