

CYBER SECURITY DIVISION

Ganimede: AI and Deep Learning to support the new security requirements

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PREMISE

The health emergency that the world is facing has forced companies and public administrations to adapt policies and processes in order to comply with the new guidelines and regulations in terms of safety. The challenge is being able to manage these new risks by ensuring safety at work, on public transport and in public places, safeguarding the health of individuals in compliance with current regulations, **without however penalizing the accessibility of services and the quality of life.**

If until recently, in relation to the entry of people into restricted access areas (such as corporate offices), it was "simple" surveillance, today it is also checking that by accessing critical infrastructures and public spaces people wear PPE, do not have a high body temperature and do not create gatherings. But enhancing controls and security in this way also means greater investments and, potentially, emerging inefficiencies in the services offered and in the processes. How can we normalize and manage an emergency that will last long, and which will involve necessary precautions in different sectors?

Technology can be the answer, because it is one of the keys that can guarantee both the safety in compliance with the new regulations, and the maintenance of service quality by optimizing available resources. Leonardo, thanks to his technological knowledge and the solutions already implemented in the security field, has successfully developed and is experimenting a video analytics algorithms based on Deep Learning, capable of supporting some of these new security needs in an extremely effective way.

The implemented solution enriches the algorithms present in the **Ganimede** platform and is able to detect the failure in respecting interpersonal distances, the onset of critical gatherings, the failure to use the protective mask and to estimate the body temperature of individuals reliably. Furthermore, its characteristics make it operationally much more effective than other solutions on the market.



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OUR SOLUTION: GANIMEDE

ARCHITECTURE: The solution is applicable to already installed and operational cameras, but also to live or recorded video streams, in both cases **without having to change the configuration.**



SOCIAL DISTANCING: The solution, detecting the complexity and dynamism of the scene, can be adopted both in open spaces (eg squares or streets) and in closed rooms (eg at the tail of a desk), and defines alarm logics that are more suitable for the **relative context of application**, introducing specific risk indices. For example, in the case of a square instead of making a report whenever people approach for a limited time, the solution can define risk indices linked to social behavior such as the presence of permanent groups of people with a high number of physical interactions.

BODY TEMPERATURE ESTIMATE: Body temperature is measured using thermal cameras (only brand independent). The reliability of the temperature is given by the specific elaborations that characterize the solution:

- Detection over time interval.



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- Evaluation on the correct facial landmarks.
- Measurement carried out on different positions taken by the moving face.
- No correction with statistical based filters as it happens in some other market solutions, undermining the reliability of the measurement.

GEOREFERENTIATION OF DATA: The solution manages georeferenced and historicized data in real time. In this way it is possible to **locate on a map** where the critical event was detected and reconstruct the entire scene of interest.

PRIVACY BY DESIGN: All algorithms have been designed in order to respect the minimization and anonymization of the data, pillars of the **European GDPR regulation**.

GANIMEDE, OUR EYES NEVER BLINK: These peculiar features are added to the basic requirements of the entire Ganimede video analysis platform, like configurability, flexibility, scalability, on-premises or cloud accessibility, interoperability and integration with external systems; and going to compose a platform able to **enhance and optimize the management of your security**.

IN PANDEMIC TIMES

For public transport, ports, airports, urban areas and public buildings - thanks to its further customization in order to respond to security needs in pandemic times - Ganimede represents a tool capable of effectively supporting the management of productive and daily activities. With its operational breadth, which ranges from People Counting and Density to the reporting of individuals who do not wear PPE, it makes possible to **optimize the resources** used in the field of security for the benefit of greater protection of the health of people and the community.





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