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INVESTIR L'AVENIR

MONTPELLIER MÉDITERRANÉE MÉTROPOLE

City on the alert

To combat floods, the Montpellier métropole, exposed to both marine submersion and river flooding, in 2016 has got itself a real-time hydrological risk monitoring and crisis management system: "City on the alert"

A BIG CHALLENGE

Montpellier Méditerranée Métropole and its 31 municipalities are affected very badly by hydrological problems. Regular, heavy and brutal precipitation causes rapid rises in levels and heavy flooding. Since 2007, the métropole, together with local authorities and the State, has piloted the installation of facilities throughout the whole lower Lez valley, bolstering dikes over 15 kilometres and creating a flood diversion channel towards the Etang du Mejean. Hydraulic studies were carried out on the other watercourses (Nègue-Cats, Lironde, Mosson, Coulazou, Rieumassel, etc.) in order to identify the developments to be carried out to protect the densely populated areas.

In parallel with these achievements, Montpellier Méditerranée Métropole has deployed an innovative system for monitoring and managing hydrological risk in real time in order to help as best as possible with inter-municipal crisis management and in close collaboration with the all local players.

Called "City on the alert", this system includes weather forecasting, monitoring phenomena with sensors, prior simulation of the event and its consequences, real-time management of water regulation basins, triggering of safety measures and finally broadcasting the alert to the public.

KEY DATA

- **€510,000** investment including **€210,000** financial support from the City of Tomorrow Investment for the Future Program.
- **37** sensors measuring the water height
- **12** rain sensors
- **7** new hydro-weather stations
- **23** stations on Montpellier's hydrological monitoring network
- **8** stations on the Lez monitoring network by the Flood Forecasting Service for the Western Mediterranean

A SMART TOOL

"City on the alert" is the result of an R&D partnership between the métropole and Egis Eau, a subsidiary of the Caisse des Dépôts, Prédict, a climate risk management company based in Castelnau-le-Lez, and Synapse, an engineering company specialising in environmental data monitoring systems in the water sector. An integral part of the smart city of Montpellier Métropole Méditerranée, this innovative tool makes it possible to anticipate, analyse and optimally manage periods of crisis linked to flood risk. The system is deployed on the EcoCité region and mainly in the municipalities of Montpellier, Lattes and Pérols and over the 22 kilometres of the city's dykes.

MULTIPLE DATA

Every five minutes, “City on the alert" collects data from hydro-meteorological stations in the area and from a network of around fifty staff gauges (which measure levels in watercourses) or rain gauges (which evaluate the amount of rain). Seven new hydro-meteorological monitoring stations have been installed to complete the existing system, which includes the 23 stations in Montpellier’s monitoring network, the eight stations on the Lez of the network of the Mediterranean West Flood Forecasting Service and the information (radar water slides, weather forecast) from the Predict system. This data is transmitted both by 4G, by the metropolitan area's fibre optic network and by a dedicated digital radio frequency. If the thresholds are exceeded, alarms are automatically sent by SMS.
“City on the Alert" also includes all of the hazard maps produced over the region.
This evolving library makes it possible to define and visualise the risk thresholds by expertise, feedback and modeling.

DIRECT

“To give a good welcome to the residents, while protecting resources and managing risks: that is the summarised road map of our métropole, whose territory has both the highest demographic growth in France, a remarkable biodiversity and great vulnerability to climate change. “City on the Alert" meets all of these resilience issues. This innovative tool includes a collaborative platform that enables the instantaneous sharing of observations and actions in the field from everyone involved in crisis management. It also allows real-time and predictive analysis and therefore anticipates risks from one hour to the next. Finally, it relies on a system of very secure sensors that can operate in extreme conditions.”

Stéphanie Jannin,
Vice-President of Montpellier Méditerranée Métropole

A COLLABORATIVE PLATFORM

Finally, a collaborative platform allows all the players concerned - municipalities, métropole, emergency services, etc. - to exchange information on a secure website.
In addition to viewing current or planned for hydrological scenarios, and viewing hazard maps, the platform also provides access to:

- the heights of water and the monitoring of rain recorded in the measurement stations and to images from the surveillance cameras installed at strategic points;
- the preventive actions undertaken: roads that are cutoff, diversions, evacuations... as well as to the municipal backup plan (MBP, Plan Communal de Sauvegarde) that the municipalities wish to share. An integrated instant messaging system enables the persons involved to communicate directly.

Deployed successfully in the first quarter of 2019, “City on the Alert" aims to extend to all of mainland France. Finally, a smartphone app is currently being developed so that the general public can also access information on the platform.

KEY FIGURES

- **2,500 HECTARES:** perimeter of the EcoCity
- **4 MUNICIPALITIES:** Montpellier, Castelnau-le-Lez, Lattes, Pérols

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