

## INSPECTION OF CONFINED STRUCTURES

CT2MC offers, through its CAN'EAU® range, autonomous inspection solutions for confined structures, particularly focusing on wastewater networks.

Our CAN'EAU® Range:

- Facilitates Asset Inspection: The CAN'EAU® drones are equipped with advanced technologies, including 360° cameras, allowing for continuous video capture of pipelines from all angles. This enables operators to conduct thorough assessments of infrastructure conditions.
- Highly Adaptable: The range includes both floating and rolling drones, designed to navigate various confined environments such as potable water pipelines and wastewater networks with diameters exceeding 400 mm.
- Reduces Human Risks: By deploying autonomous drones, CT2MC minimizes the need for human entry into hazardous or hard-to-reach areas, thereby enhancing safety during inspections.

CEM001



Ø 400 mm  
30 mm  
115 mm  
4h

CLD001



Ø 500 mm  
90 mm  
150 mm  
6h

CSR001



MINIMUM PIPE DIAMETER: 800 mm  
DRAFT: 150 mm  
AIR DRAFT : 230 mm  
AUTONOMY: up to 4 hours

RTO001



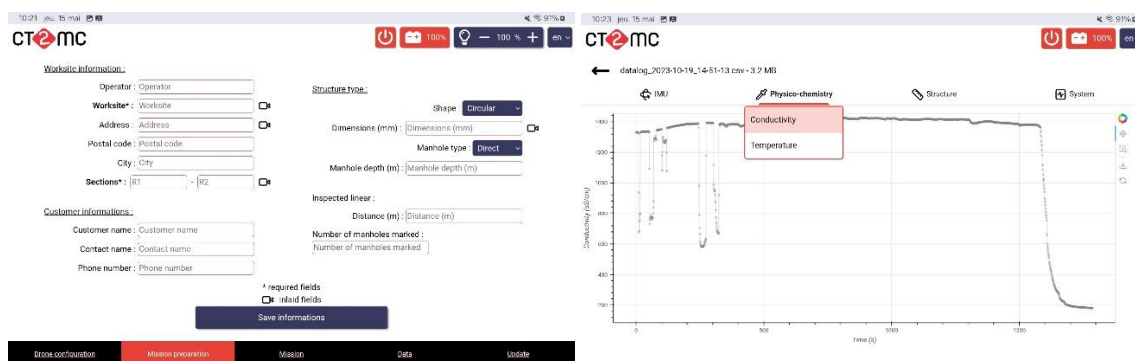
Ø 400 mm  
4h

## OUR TECHNOLOGIES

<b>STRUCTURE INSPECTION (CCTV)</b>	Equipped with a 360° camera, the system captures the entire structure (above the waterline) in a single pass. During post-processing, operators can navigate through the footage and inspect the structure as if they were physically inside it.
<b>LIGHTING</b>	Multiple lamps provide diffuse 360° illumination with calibrated color and adjustable intensity, tailored to the size of the structure.
<b>POSITIONING</b>	By deploying positioning beacons along the inspection route, the exact location of the inspection tool within the structure is accurately determined.
<b>SEDIMENTATION PROFILING</b>	A rotating sonar enables the creation of a sediment profile throughout the entire structure.
<b>DETECTION OF INFILTRATION OF CLEAN WATER (ECPP)</b>	Integrated water quality sensors (measuring conductivity, temperature, and/or pH) detect anomalies in key parameters, indicating the presence of unwanted clean water infiltration.
<b>GAS DETECTION</b>	The system can detect the presence of gases such as hydrogen sulfide (H <sub>2</sub> S), carbon monoxide (CO), oxygen (O <sub>2</sub> ), and methane (CH <sub>4</sub> ), along with their specific locations within the structure.
<b>DIGITIZATION</b>	An onboard LiDAR system digitizes the structure, allowing for the creation of cross-sectional views of the pipeline. Post-processing enables the generation of both transverse and longitudinal 2D sections, as well as 3D reconstructions in the form of point clouds.
<b>3D MODELING</b>	Through data fusion (combining point clouds, inertial data, and video), the post-processing workflows can generate 3D models of various structures, facilitating their integration into Geographic Information System (GIS) software.
<b>PIPELINE TRAJECTORY</b>	The embedded technologies produce a file containing X, Y, and Z coordinates. When combined with surface georeferencing information, this allows for precise mapping of the structure's position.
<b>PROPULSION</b>	Depending on the conditions, the system utilizes either four aerial turbines or two aquatic motors, enabling controlled navigation within the structure.

## INSPECTION OF CONFINED STRUCTURES

It is possible to view the acquired data directly in the field thanks to our specifically developed software: a user interface accessible on-site via PC or tablet.



Our vehicles are complemented by a range of accessories specially developed to facilitate the deployment of our products, such as a system for lowering and retrieving the robot within the networks, in order to reduce human risk by limiting access to the networks.



Technical Specifications – The content of your product will be defined in your commercial offer:

<b>Video Acquisition</b>	1 HD camera – 360°, 5.2k (30fps), 3K (60fps) <i>Optional: live video feed available.</i>
<b>360° Lighting</b>	4 lamps ranging from 100 to 1500 lumens, 3000 K, with adjustable light intensity.
<b>Sediment Measurement</b>	Single-beam or rotating sonar: generates a sediment profile over a range of 50 mm to 6 m. Frequency: 1 Hz at 1 m (then 0.5 s per additional meter), 400 measurement points, 2 mm resolution.
<b>Positioning and Digitalization</b>	Via positioning beacon with UWB technology: 1D, or via multi-sensor post-processing of the structure: 3D point cloud.
<b>Sound Information</b>	Buzzer < 96 dB, intermittent signal.
<b>Visual information</b>	LCD screen displaying timestamp and validation of proper drone operation via the user interface (UI).
<b>Data recording</b>	4 Hz, .csv file directly on the UI.
<b>Gaz sensors</b>	Measurement of levels: H <sub>2</sub> S, CH <sub>4</sub> , CO, O <sub>2</sub> (optional).
<b>Customization</b>	Customizable shell and deck color.
<b>Packaging</b>	Transport cases for the drone and beacons.
<b>Handling</b>	Provision of the following peripheral equipment ( <i>sold separately</i> ): Launch and retrieval system, and telescopic pole.
<b>Chargers</b>	Charger for drone and accessories. Optional: fast charger.
<b>Documentation</b>	User manual in French and English. Standard Operating Procedures for data retrieval and processing.
<b>Software</b>	Multilingual UI in FR, EN, DE, ES, IT, PL, PT, and UZ. Post-processing software in FR, EN, and PL.
<b>Warranty</b>	Refer to our General Terms and Conditions of Sale (GTCs).