

NDT Products available

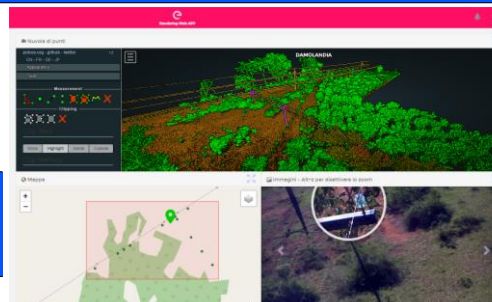
3D modelling





NDT Products available

P.1.1.1 3D modeling system and repository – P1


Code	Name	Description	Use cases	Benefits	
P.1.1.1	3D modeling system and repository – P1	3D modeling system, Viewer Web application and common repository to host data captured in field through different technologies	<ul style="list-style-type: none">• Loading, managing and viewing of field data from LIDAR inspections• Integration with IR and other technical systems (GIS, MARE, MLM, etc.)*	<ul style="list-style-type: none">• OPEX reduction regarding post-processing of field captured data• Reduction of number of field inspections• Vegetation trimming cost reduction• Equipment stock reduction (CAPEX reduction)	
Type	Business impact		Deployment cost	Relevance	Picture
Technical specifications / System / Product	High / Medium / Low		High / Medium / Low	High / Medium / Low	
Development status	Type of action	I&N unit affected		Technical reference	
Solution prototyping and validation / Industrialization & System integration / Roll-out	Integration in Enel internal processes / System integration and deployment / Product deployment in the field	O&M / ND / NCO / HSE / Q&PT / BD / GP		Massimo Maffeis	

* Under development

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P.1.2.1 Global specifications for LIDAR and Photogrammetry corridor mapping

Code	Name	Description	Use cases	Benefits
P.1.2.1	Global specifications for LIDAR and Photogrammetry corridor mapping	Global specification for aerial or terrestrial inspections of distribution lines and outdoor assets for data acquisition	<ul style="list-style-type: none">• Helicopter / drone / Mobile mapping (car)• LIDAR / photogrammetry	<ul style="list-style-type: none">• Defined the type and format of information to be gathered from the field• Defined the minimum equipment requirements to be used during the field inspections
Type	Business impact	Deployment cost	Relevance	Picture
Technical specifications / System / Product	High / Medium / Low	High / Medium / Low	High / Medium / Low	
Development status	Type of action	I&N unit affected	Technical reference	
Solution prototyping and validation / Industrialization & System integration / Roll-out	Integration in Enel internal processes / System integration and deployment / Product deployment in the field	O&M / ND / NCO / HSE / Q&PT / BD / GP	Massimo Maffeis	

NDT Products under industrialization

Global specification for 3D modeling of substations



Code	Name	Description	Use cases	Benefits	
	Global specification for 3D modeling of substations	Global specification for 3D modeling of primary and secondary substations through terrestrial laser scanners (TLS)	<ul style="list-style-type: none"> Primary substations Secondary substations 	<ul style="list-style-type: none"> Definition of type and format of information to be gathered from the field Definition of the minimum equipment requirements to be used during the field inspections 	
Type	Business impact		Deployment cost	Relevance	Picture
Technical specifications / System / Product	High / Medium / Low		High / Medium / Low	High / Medium / Low	
Development status	Ready for roll-out	Type of action	I&N unit affected	Technical reference	
Solution prototyping and validation / Industrialization & System integration / Roll-out	Q1-Q2 2020	Integration in Enel internal processes / System integration and deployment / Product deployment in the field	O&M / ND / NCO / HSE / Q&PT / BD / GP	Massimo Maffei	



BACKUP



From 2D to 3D

Airborne Data Acquisition Technologies



SPAGNA-ANDALUSIA

10.32 8.02 m

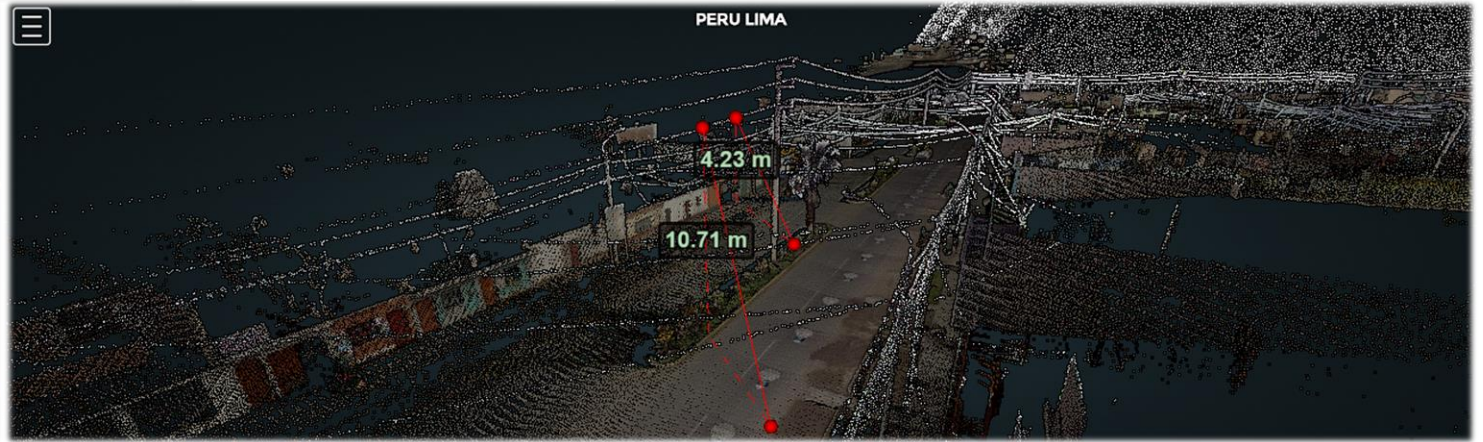
8.67 m

DF2000698-MONTEROSEO

DD9004109-CARRODANO

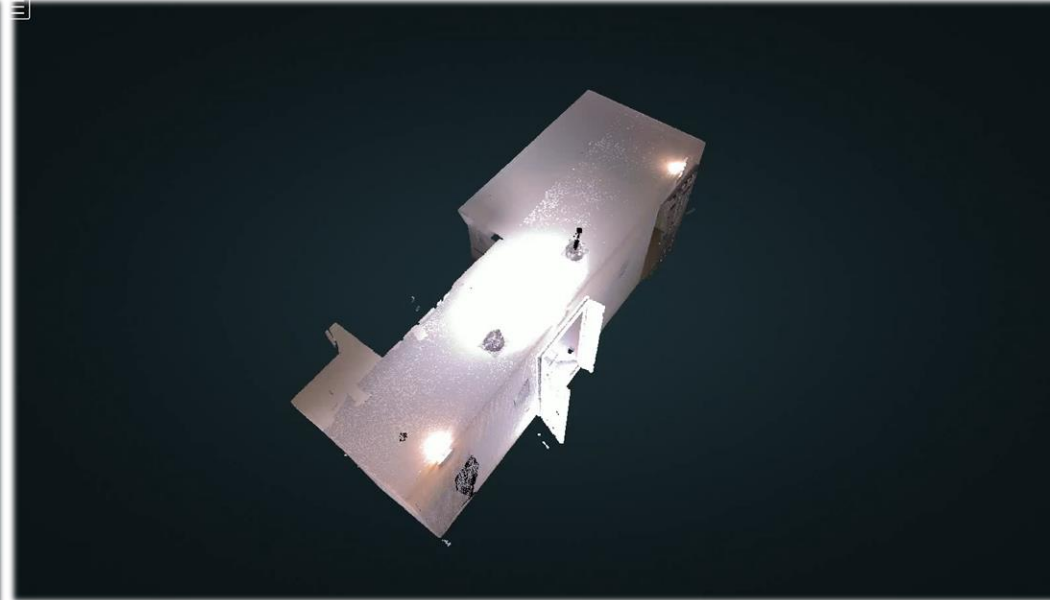
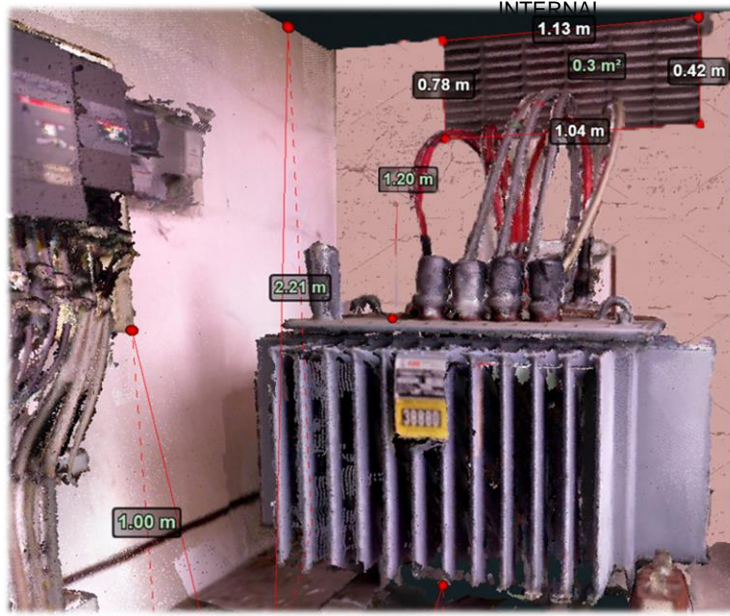


Mobile Mapping



From 2D to 3D

Portable 3D Scanners



From 2D to 3D

Global Repository and 3D Modeling System



The screenshot displays the 'Rendering Web APP' interface. The top bar includes 'Mappa' and 'Lista' tabs. The left sidebar shows search filters: 'Linea' (DAMOLANDIA), 'PULISCI' (CERCA), 'Rilievo' (07/01/2019 16:42:21), and '3 di 39 interferences trovate'. The main area features a 3D point cloud visualization of a landscape with green trees and brown ground. A sidebar on the left contains search filters and a list of interferences. The bottom-left shows a 2D map view with a red bounding box. The bottom-right shows a close-up image of a power line tower. Red arrows indicate the integration between the search results, the 3D model, the map view, and the image viewer.

Automated classification and detection of anomalies also through AI

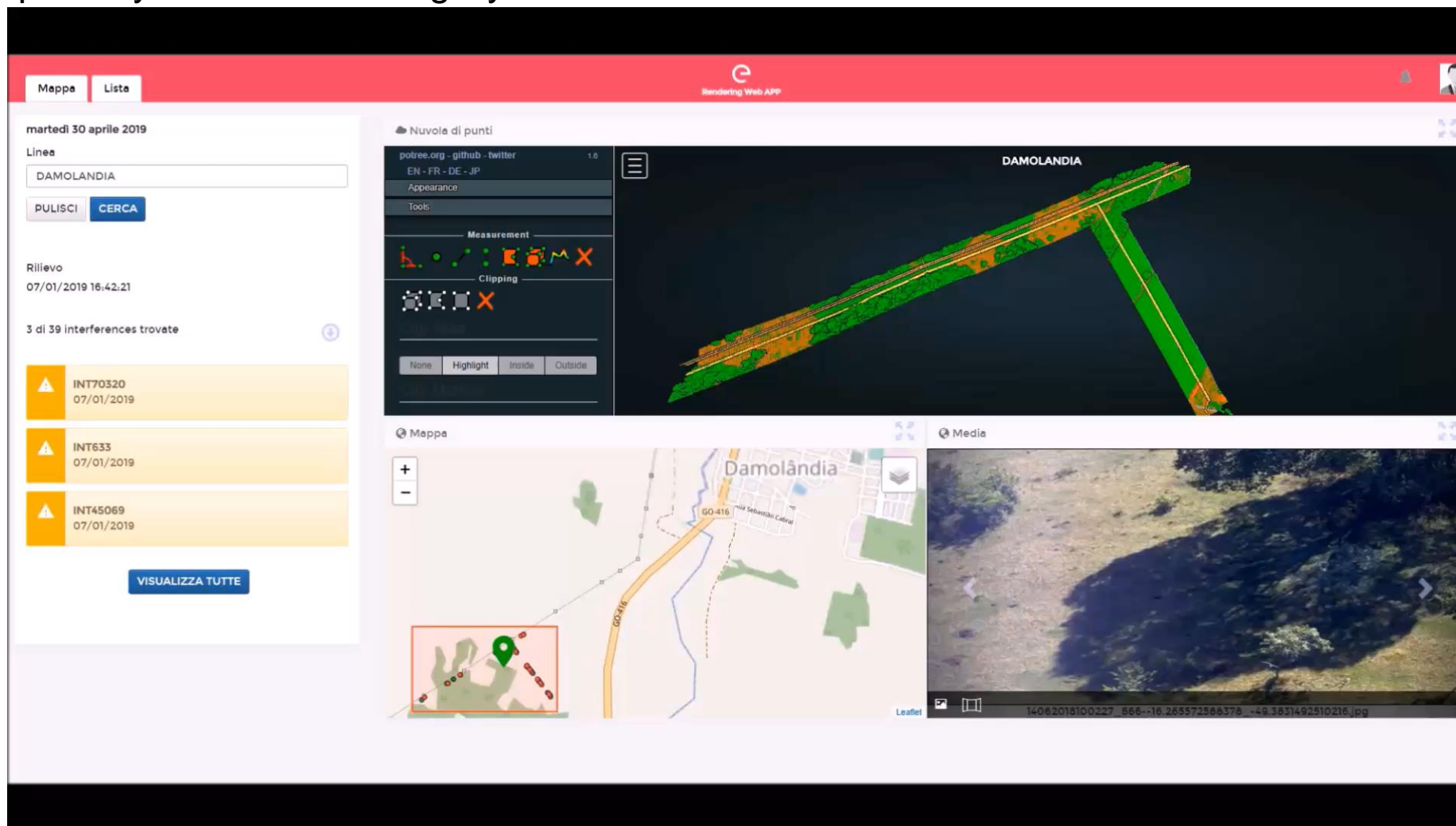
Integration with network cartography and maintenance systems

Web access to 3D models and related images



From 2D to 3D

Global Repository and 3D Modeling System



Global 3D Modeling system collect all Network 3D models and make them easy available