

# **PORTFOLIO**

Geotechnical Service
Controls, surveillance and monitoring
of road and railway infrastructures
Consolidation works

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Compagnia Torinese Monitoraggi (Torino Monitoring Company), also known as CTM, was established in January 1996. CTM operates in the field of instrumental measurements within territorial control and civil engineering. We carry out geotechnical investigations since 2005, and consolidation works since 2021...

Our Mission is the communication and development of a «turn-key» monitoring approach, where instrumental monitoring becomes a fundamental tool in civil engineering, as well as in physical planning and environmental surveillance.

Since its inception, CTM has applied the best and most advanced instrumental monitoring technologies, and management procedures, throughout Italy and other countries.

We build and manage monitoring and early warning systems within areas affected by e.g. landslides and/or floods, and during construction and operational phases of civil structures.

We apply instrumental surveys and structural monitoring to Civil engineering, Quantitative verification of project design assumptions Operation and surveillance of Land and Environment around an infrastructure, for the evaluation of natural hazards, and their mitigation.

### **STAFF**

CTM Staff is a multispecialised team of professionals and specialized technicians:

- > Geotechnical Engineers experienced in soil/ground response, and the analysis of its characteristic parameters
- > Geomechanical Engineers specialised in the execution of underground works, and in the design and interpretation of on-site measurements for the characterization of rock masses
- Experienced geologists for surface surveys, both lithological and structural, on-site and laboratory tests, and stratigraphic examination of boreholes of any kind
- Instrumentation technicians with years of experience in special testing and geotechnical, structural, and environmental measurements
- Site technicians for the execution of either geological or environmental boreholes, at any depth, and even in harsh conditions (walls/cliffs, landfills...)
- Specialized technicians experienced in the installation of both individual instruments and automatic monitoring systems, including setup of data acquisition and automatic transmission systems, as well as the processing, validation, and data management via On-Line Web Monitoring



### **OUR ROLE**

CiTiEmme figures as a partner, consultant, and/or provider of technical services to all entities operating in the fields of civil engineering, geotechnics, or territorial and structural monitoring, whether they are Client organizations or general contracting companies.

It relies on its technical staff to offer its Clients technical and design consulting on specific issues or project procurement.

CiTiEmme has access to well-equipped mechanical workshops for the construction of accessories and technical components, to support instrumentation or specific modifications to adapt them to any issue.

La CiTiEmme boasts extensive experience in the maintenance of instrumentation networks through inspections with specialized equipment for identifying anomalies, removing sensors, and repairing them at qualified laboratories or specialized companies.

### **CERTIFICATIONS**

CiTiEmme holds the following certifications:

- UNI EN ISO 9001:2015 Quality Certification (No. IT0621011/1 Sector EA 28/34, >20 years).
- ISO 45001:2018 Health & Safety Policy (No. 450821149/1 Sector EA 28/34 > 10 years).
- Since 2024 CiTiEmme also holds the ISO 14001:2015 Environmental Certification (No. 170924175).
- SOA No. 97168/7/00 categories OS 21 CL III-BIS, OS 20-A III-BIS, OS 20-B III-BIS.
- ITALFERR certification in categories J1 and X, with classification IV. SAP Code 100048844.

CiTiEmme is included in the Vendor Lists of the leading General Contractors in Italy, and numerous national and regional administrations.



# PORTFOLIO OF MAIN WORKS AND PROJECTS 2013-2023



| Du:<br>From | ration<br>to | PROJECT DESCRIPTION  | CLIENT                                     | Amount         |
|-------------|--------------|--|--|----------------|
| 2009        | 2016         | Monitoring DG/48 Macrolotto 2 - Completion and optimization works to type 1/a of the CNR80 standards, section between km 108+000 and km 139+000 of the del A2 Salerno-Reggio Calabria Highway (multiple sites) Geotechnical and structural monitoring stations of the designed structures upon construction and operation phases. Electric sensors (e.g. joint meters, load/pressure cells) and topographic surveys. | SIS S.C.P.A.                               | € 1,441,231.27 |
| 2009        | 2015         | Salerno Railway Station – Construction of via Torrione underpass Seismic geophysical survey for materials' characterization Monitoring of operational railway tracks with topographic control of deformations upon works Geotechnical and structural monitoring during works (load cells and accelerometers) Remote data management  | INC General<br>Contractors                 | € 254,420.29   |
| 2010        | 2015         | Pedemontana Veneta Executive Project Geognostic surveys Seismic and electric geophysical surveys Soil sampling On-site and laboratory geotechnical testing Chemical analyses on soil samples (laboratory) Inclinometric and piezometric monitoring   | SIS S.C.P.A.                               | € 611,444.85   |
| 2010        | 2014         | Instability monitoring on the left slope in Valle d'Otro (Alagna Valsesia, VC) Geological and geomorphological survey Geognostic surveys Manual inclinometric measurement campaigns Installation and management of an automated geotechnical monitoring system comprising: Inclinometers with IPIs, pressure transducers, electric rod extensometers and termometers   | Municipality of<br>Alagna Valsesia<br>(VC) | € 172,405.55   |
| 2011        | 2013         | Rodello - Stabilization works on the eastern slope downstream of the urban center Geognostic surveys Geotechnical monitoring (inclinometri, automated piezometers)   | Municipality of<br>Rodello (CN)            | € 263,424.08   |
| 2011        | 2013         | Landslide (CH) – Monitoring with inclinometers and piezometers  Inclinometric and piezometric measuring campaigns  | ITALFERR S.p.a.                            | € 83,456.28    |
| 2011        | 2013         | S.Pertini Caselle Airport (TO) Set-up of piezometric network   | SAGAT<br>Engineering S.p.a.                | € 56,471.05    |



| Dur<br>From | ration<br>to | PROJECT DESCRIPTION  | CLIENT                             | Amount              |
|-------------|--------------|--|------------------------------------|---------------------|
| 2012        | 2013         | Municipality of Stazzano - Hm. Castello Excavations and earth moving Foundation works, roadworks Surface hydraulic works Geognostic surveys  | Municipality of<br>Stazzano (AL)   | € 69,166.37         |
| 2012        | 2014         | Enhancement and modernization of the railway line RFI Potenza - Foggia  Geognostic surveys  Down-hole testing (permeability, pressiometric, SPT)  Undisturbed sample collection for laboratory analyses  | ITALFERR S.p.a.                    | € 127,272.10        |
| 2012        | 2013         | A32 Highway Torino-Bardonecchia - Assessment of the concrete cover thickness on the curbs of the Giaglione and Prapontin tunnels  GPR investigation  | Musinet<br>Engineering S.p.a.      | € 33,750.00         |
| 2012        | 2013         | Munich-Verona Railway Axis - Southern Access to the Brenner Base Tunnel, quadrupling of the Fortezza-Verona line - Lot 1: Fortezza-Ponte Gardena (BZ)  Inclinometric and piezometric monitoring  | ITALFERR S.p.a.                    | € 54,085.09         |
| 2012        | 2013         | Morphological reshaping and slope stabilization works in the Rochemolles and Melezet areas, Bardonecchia (TO) Geognostic surveys Automatic inclinometers and piezometers   | Musinet<br>Engineering S.p.a.      | € 49,750.00         |
| 2013        | 2013         | Municipality of Farigliano - Consolidation of the Gené and Viaiano areas  Excavations and earthworks  Foundation works, concrete structures, roadworks  Slope stabilization  Hydraulic works  Geognostic surveys  Geophysical investigations (seismic refraction)  On-site testing (permeability, pressiometric, SPT)  Automatic inclinometers and piezometers | Municipality of<br>Farigliano (CN) | <b>€</b> 192,000.00 |
| 2013        | 2013         | Bosio - Badana Dam Geognostic surveys Geophysical investigations (seismic refraction) On-site testing (permeability, pressiometric, SPT) Characterization tests on the dam's materials   | Mediterranea<br>delle Acque S.p.a. | € 182,960.00        |
| 2013        | 2013         | Lavezze Dam  |                                    | € 44,619.53         |



| Duration |      |  | a                                  |              |  |
|----------|------|--|------------------------------------|--------------|--|
| From     | to   | PROJECT DESCRIPTION  | CLIENT                             | Amount       |  |
|          |      | Geognostic surveys Geophysical investigations (seismic refraction) On-site testing (permeability, pressiometric, SPT) Characterization tests on the dam's materials  | Mediterranea<br>delle Acque S.p.a. |              |  |
| 2013     | 2013 | Torino NE AREA - Variant 2000 Geognostic surveys Undisturbed sample collection for laboratory analyses Installation of piezometers   | Recchi<br>Engineering S.p.a.       | € 30,000.00  |  |
| 2013     | 2013 | A32 - Rilevato Blanc - Beulard Geognostic surveys Undisturbed sample collection for laboratory analyses Installation of piezometers  | SITAF S.p.a.                       | € 38,344.00  |  |
| 2013     | 2014 | Linea AV Na - Ba - Nodo Bari SUD Geognostic surveys Undisturbed sample collection for laboratory analyses Installation of piezometers  | ITALFERR S.p.a.                    | € 138,216.92 |  |
| 2013     | 2014 | Comune di Roascio - S C del Longhino Excavations and earthworks Foundation works, concrete structures, roadworks Slope stabilization Hydraulic works Geognostic surveys Geophysical investigations (seismic refraction) On-site testing (permeability, pressiometric, SPT) | Municipality of<br>Roascio (CN)    | € 54,675.03  |  |
| 2013     | 2015 | Chiomonte – High Speed Train (TAV) construction site "La Maddalena" Geognostic surveys Pipes for down-hole testing On-site testing (permeability, pressiometric, SPT) Installation of piezometers for environmental purpose  | Borio Giacomo<br>S.p.a.            | € 132,968.44 |  |
| 2014     | 2014 | Cycle-pedestrian path AGLIE' Excavations and earthworks Foundation works, concrete structures, roadworks Stabilization of canal banks Hydraulic works Geognostic surveys Automatic piezometric monitoring  | Canavese Canals<br>Consortium      | € 224,426.39 |  |
| 2014     | 2014 | High-speed railway line Napoli-Bari - Cancello Variant Geognostic surveys Inclinometers and piezometers On-site testing (permeability, pressiometric, dilatometric) Undisturbed sample collection for laboratory analyses  | ITALFERR<br>S.P.A.                 | € 79,047.85  |  |
| 2014     | 2014 | Cuneo - Michelin Plant Geognostic surveys Undisturbed sample collection for laboratory analyses Installation of piezometers  | IGE.S Ass. office                  | € 50,340.00  |  |
| 2014     | 2015 | Ravenna Port HUB  Surface and down-hole geophysical surveys  | Ravenna Port<br>Authority          | € 32,883.40  |  |



| Du:<br>From | ration<br>to | PROJECT DESCRIPTION  | CLIENT  | Amount         |
|-------------|--------------|--|---|----------------|
| 2014        | 2015         | Torino Metro line - Preliminary Design of the North Extension Geognostic surveys Inclinometers and piezometers On-site testing (permeability, pressiometric, dilatometric) Undisturbed sample collection for laboratory analyses   | INFRA.TO.                                       | € 83,599.54    |
| 2014        | 2015         | Cassano Spinola - Consolidation Via Arzano Excavations and earthworks Foundation works, concrete structures, roadworks Slope stabilization Surface Hydraulic works   | Municipality of<br>Cassano Spinola<br>(AL)      | € 104,974.38   |
| 2014        | 2016         | Castiglione Faletto - Works for the Consolidation of the Residential Area  Excavations and earthworks  Foundation and drainage works  Slope stabilization  Hydraulic works   | Municipality of<br>Castiglione<br>Falletto (CN) | € 164,609.78   |
| 2014        | 2016         | San Raffaele Cimena - Hydrogeological restoration works in various locations, following the catastrophic events of November - December 2008 and April 2009  Excavations and earthworks  Foundation works, concrete structures, roadworks  Slope stabilization  Surface Hydraulic works | Municipality of S.<br>Raffaele Cimena<br>(TO)   | € 139,586.10   |
| 2014        | 2016         | Stazzano - Municipal road via Monte Spineto Excavations and earthworks Foundation works, concrete structures, roadworks Slope stabilization Surface Hydraulic works  | Municipality of<br>Stazzano (AL)                | € 199,500.00   |
| 2014        | 2016         | Turin Sewer Collector Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses MASW surveys   | SMAT S.p.a.                                     | € 32,490.59    |
| 2014        | 2018         | Piezometers – Environmental monitoring along Veneto Pedemontana Expressway  Geognostic surveys  Piezometers for the environmental monitoring network   | Geodelta S.r.l.                                 | € 97,733.06    |
| 2014        | 2018         | Malo Tunnel - Jet Grouting Control  Geognostic surveys  Installation of piping for down-hole and cross-hole geophysics, and testing  | SIS S.C.P.A.                                    | € 234,385.30   |
| 2014        | 2018         | A2 SA-RC Highway - Construction and adjustment works of Macrolotto 3.2 Supply and installation of tunnel monitoring equipment Temporary consolidation works Management of monitoring data and data publication on Web-Based platform   | ITALSARC<br>S.c.a.r.l.                          | € 1,014,494.57 |



| Du   | ration | PROJECT DESCRIPTION   |   |                    |
|------|--------|---|---|--------------------|
| From | to     | PROJECT DESCRIPTION   | CLIENT                                  | Amount             |
| 2015 | 2015   | Chiusa Pesio - Hm. Mirabello Slope stabilization Installation of rockfall nets Installation of rockfall barriers  | Municipality of<br>Chiusa Pesio<br>(CN) | € 355,851.69       |
| 2015 | 2015   | Borgo Sabotino - Latina Geognostic surveys Seismic refraction surveys On-site testing (permeability, pressiometric, SPT)  | SOGIN S.P.A.                            | € 50,856.00        |
| 2015 | 2015   | Introd - Parriod Landslide Geognostic surveys Geo-electric tomography Prove in foro (permeabilità, SPT)   | Municipality of<br>Introd (AO)          | € 53,189.25        |
| 2015 | 2015   | Mango - Landslide Via Fenoglio Geognostic surveys Inclinometric monitoring On-site testing (permeability, pressiometric, SPT)   | Municipality of<br>Mango (CN)           | € 44,186.08        |
| 2015 | 2015   | Galleria Canale Vernazza Geognostic surveys Seismic refraction surveys On-site testing (permeability, pressiometric, SPT)   | IREN S.p.a.                             | € 35,493.99        |
| 2015 | 2015   | Colle Ozotto Landfill - Sanremo and Taggia Geognostic surveys Piezometers On-site testing (permeability, pressiometric, SPT)  | Idroedil S.r.l.                         | € 35,951.20        |
| 2015 | 2015   | Province of Biella - SP 202 e 203 - Vigliano Biellese  Geognostic surveys  Geophysical prospections (seismic refraction, MASW)  On-site testing (permeability, pressiometric, SPT)                                    | Province of Biella                      | <b>€</b> 14,727.60 |
| 2015 | 2016   | Plant Bosco Marengo Geognostic surveys Piezometers On-site testing (permeability, pressiometric, SPT)   | SOGIN S.P.A.                            | € 108,290.00       |
| 2015 | 2016   | Alice Castello- Hm. Valchiesa Geognostic surveys Piezometers On-site testing (permeability, pressiometric, SPT)   | Valchiesa<br>Ambiente                   | € 39,444.50        |
| 2015 | 2017   | Torino Outlet Village - Settimo Torinese Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses MASW surveys                                     | PRAGA Service<br>S.p.a.                 | € 129,221.00       |
| 2015 | 2019   | Torino Metro Line 1 - South - Section<br>Lingotto - Bengasi<br>Geognostic surveys<br>Installation of inclinometers, extenso-inclinometers, and<br>extensometers<br>Borehole testing for jet-grouting characterization | Italia61 S.c.a.r.l.                     | € 252,885.90       |



| Dur<br>From | ration<br>to | PROJECT DESCRIPTION  | CLIENT                        | Amount       |
|-------------|--------------|--|-------------------------------|--------------|
| 2016        | 2017         | Renovation works RFI area Torino-Lingotto  | IMAF S.r.l.                   | € 32,750.00  |
|             |              | Geognostic surveys<br>On-site testing (permeability, pressiometric, SPT)<br>Undisturbed sample collection for laboratory analyses                                  |                               |              |
| 2016        | 2017         | MASW surveys   | ITALCADO                      | £ 52 212 00  |
| 2010        | 2017         | A2 SA-RC Highway - Macrolotto 3.2 –<br>Monitoring of Reinforced earth  | ITALSARC<br>S.c.a.r.l.        | € 52,212.00  |
|             |              | Installation and management of a topographic monitoring network on the provisional and permanent consolidation and protection works of Macrolotto 3.2 - A2 Highway |                               |              |
| 2016        | 2017         | A31 Highway - Valdastico   | Consortium                    | € 99,785.50  |
|             |              | Geognostic surveys<br>Geophysical prospections (seismic refraction, MASW)<br>On-site testing (permeability, pressiometric, SPT)                                    | RAETIA                        |              |
| 2016        | 2017         | Loano Harbour  | Cemento Imprese               | € 45,900.00  |
|             |              | Geognostic surveys<br>Geophysical prospections (seismic refraction, MASW)<br>On-site testing (permeability, pressiometric, SPT)                                    |                               |              |
| 2016        | 2018         | Torino Metro Line 1 - North - Section Fermi -  | ATI Project                   | € 36,000.05  |
|             |              | Cascine Vica – Executive Project Geognostic surveys On-site testing (permeability, pressiometric, SPT)   | Design Geodata<br>et al.      |              |
|             |              | Undisturbed sample collection for laboratory analyses  |                               |              |
| 2016        | 2018         | A2 SA-RC Highway - Macrolotto 3.2 – Automatic Monitoring Gallarizzo Viaduct Installation and data management of the tiltmetric                                     | ITALSARC<br>S.c.a.r.l.        | € 426,986.00 |
|             |              | monitoring network, and Interferometric monitoring with  |                               |              |
| 2016        | 2019         | ground-based station Brenner Tunnel - Works for the construction of Lot "Mules 2-3"  | BTC S.c.a.r.l.                | € 194,070.53 |
|             |              | Supply and installation of tunnel monitoring equipment – section with traditional excavation   |                               |              |
| 2016        | 2019         | Activities of on-site investigations, laboratory tests, and geometric-structural surveys aimed   | ATI Sondedile /<br>I&C Italia | € 122,679.72 |
|             |              | at determining the subsurface parameters, geometric and mechanical characteristics   | Tee Trana                     |              |
|             |              | required for seismic vulnerability assessments<br>of civil engineering works and buildings<br>owned by RFI – TO-GE Line  |                               |              |
|             |              | Geognostic surveys<br>Installation of piping for Down-Hole testing, and testing  |                               |              |
| 2017        | 2017         | Undisturbed sample collection for laboratory analyses  Casaleggio Boiro – Hm. Castello   | Municipality of               | € 33,468.99  |
|             |              | Geognostic surveys   | Casaleggio Boiro              |              |
|             |              | Inclinometers and piezometers<br>On-site testing (permeability, pressiometric, dilatometric)<br>Undisturbed sample collection for laboratory analyses              | (AL)                          |              |
| 2017        | 2017         | Cratere Area – various work sites  |                               | € 82,180.20  |



| Du<br>From | ration<br>to | PROJECT DESCRIPTION   | CLIENT                          | Amount      |
|------------|--------------|---|---------------------------------|-------------|
| 2017       | 2018         | Geognostic surveys Geophysical prospections (seismic refraction, MASW) On-site testing (permeability, pressiometric, SPT) Plant Michelin - Torino   | SINERGIA Rete<br>di Imprese     |             |
| 2017       | 2016         | Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses   | Editel S.r.l.                   | € 69,075.40 |
| 2017       | 2018         | Salussola - Hm. Brianco Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses   | Acqua & Sole<br>S.r.l.          | € 33,210.00 |
| 2017       | 2019         | Moncalvo – Hm. Cascina Orsolina Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses MASW surveys  | Co.GE.FA. S.p.a.                | € 48,962.40 |
| 2018       | 2018         | Sewer collector 'Collettore Mediano' Torino Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses   | SMAT S.p.a.                     | € 24,987.30 |
| 2018       | 2018         | Alessandria - Passerella Bormida Bridge<br>Geognostic surveys<br>On-site testing (permeability, pressiometric, SPT)<br>Undisturbed sample collection for laboratory analyses  | City of<br>Alessandria          | € 37,275.00 |
| 2018       | 2018         | Caselle Airport Torino  Drilling for runway drainage  | Brillada Vittorio<br>& C. Snc   | € 38,380.00 |
| 2018       | 2018         | Consolidation Landslide 'Grange del Frejus' Consolidation works in landslide area, with installation of slope protection works  | Municipality of<br>Bardonecchia | € 79,258.18 |
| 2018       | 2018         | SP23 "Del Sestriere" - Champlas du col, Tr. Pragelato-Cesana Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses MASW surveys Inclinometers and piezometers Inclinometric reading campaigns | Torino Città<br>Metropolitana   | € 51,509.66 |
| 2018       | 2018         | Investigations to support the final design for the Mediano Sewer Collector - SMAT Torino Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses MASW surveys                                   | A&K S.r.l.                      | € 45,500.00 |
| 2018       | 2019         | A2 SA-RC Highway - Section Buonabitacolo - Lauria  Management of the automatic monitoring network controlling landslide movements  Publishing of data on a Web-Based platform   | ANAS Salerno                    | € 39,750.00 |
| 2018       | 2019         | Valsalice Pipeline - Torino   | SMAT S.p.a.                     | € 38,813.21 |



| Du   | ration |  |                              |                |
|------|--------|--|------------------------------|----------------|
| From | to     | PROJECT DESCRIPTION  | CLIENT                       | Amount         |
| 2018 | 2019   | Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses Geotechnical-environmental investigations for the executive design of the Turin Metro - Line 1 Lot 2. West Extension Rivoli Cascine Vica Geognostic surveys On-site testing (permeability, pressiometric, SPT)   | RTI Geodata et<br>Alii       | € 34,000.00    |
| 2018 | 2020   | Undisturbed sample collection for laboratory analyses Consolidation of State Road Aqua - Stresa  | Co.GE.FA. S.p.a.             | € 142,997.37   |
| 2018 | 2020   | Consolidation with installation of slope protection works  Moncalieri-Carpice Lot 2  Geognostic surveys  On-site testing (permeability, pressiometric, SPT)  Undisturbed sample collection for laboratory analyses   | FCA business<br>holdings     | € 49,953.00    |
| 2018 | 2020   | MASW surveys  Geognostic investigations - Lot 2 Alta Valle. Application Contract of the Framework Agreement PR00220/19 dated 16/01/19.  Geognostic surveys On-site testing (permeability, pressiometric, SPT)  | Musinet<br>Engineering       | € 146,403.95   |
| 2018 | 2021   | Undisturbed sample collection for laboratory analyses Activities of on-site investigations, laboratory tests, and geometric-structural surveys aimed at determining the subsurface parameters, geometric and mechanical characteristics required for seismic vulnerability assessments   | ATI Sondedile<br>/I&C Italia | € 416,277.75   |
| 2018 | 2022   | of civil engineering works and buildings owned by RFI – Lines TO-GE / TO - MI / TO - Modane  Geognostic surveys  On-site testing (permeability, pressiometric, SPT)  Undisturbed sample collection for laboratory analyses  Installation of piping for Down-hole testing  T4 - Frejus Motorway Tunnel - Safety Tunnel of the Frejus Tunnel: project for opening the Safety Tunnel to traffic - Lot 3: External Works  Italian Platform  Supply and installation of tunnel monitoring equipment Temporary consolidation works  Management of measurement data, and data publication on a Web-Based platform | Manelli S.p.a.               | € 86,472.40    |
| 2018 | 2023   | High-speed railway line Napoli-Bari - Section<br>Cancello-Frasso-Telesino, and variant along<br>the Line Roma-Napoli via Cassino in the<br>Maddaloni Municipality  | CFT S.c.a.r.l.               | € 1,004,733.30 |



| D<br>From | Ouration<br>to | PROJECT DESCRIPTION   | CLIENT  | Amount       |
|-----------|----------------|---|---|--------------|
| 2018      | In progress    | Supply and installation of monitoring equipment for tunnels, temporary consolidation works, railway tracks, and landslide areas.  Multi-year management of the service and data publication on a Web-Based platform  GPR (Ground Penetrating Radar) surveys  "Service related to Geotechnical—  | ANAS Aquila   | € 511,569.66 |
|           |                | geomorphologic and topographic monitoring, to be carried out as part of the construction works for the section of S.S. 652 'Fondo Valle Sangro' between the Gamberale and the Civitaluparella stations (2nd Lot – 2nd Section – 2nd Segment)  Supply and installation of monitoring equipment for tunnels, temporary consolidation works, railway tracks, and landslide areas.  Multi-year management of the service and data publication on a Web-Based platform |   |              |
| 2019      | 2019           | Roascio - Slope stabilization in Hm. Longhino Excavations and earthworks Micropile consolidation works Surface Hydraulic works  | Municipality of<br>Roascio (CN)                             | € 217,756.85 |
| 2019      | 2019           | Geotechnical investigations in the Municipality of Caselle Torinese (TO) related to the structural design of commercial buildings and infrastructure works  Geognostic surveys  On-site testing (permeability, pressiometric, SPT)  Undisturbed sample collection for laboratory analyses   | SATAC SIIQ<br>S.p.a.  | € 97,995.54  |
| 2019      | 2019           | Assignment for the execution of geotechnical and geophysical investigations in the Municipality of Hône (AO) preparatory to the implementation of the adaptation work of the 'Ayasse' Bridge – A5 Motorway Quincinetto-Aosta  Geognostic surveys  On-site testing (permeability, pressiometric, SPT)  Undisturbed sample collection for laboratory analyses   | SAV S.p.a.  | € 15,690.00  |
| 2019      | 2019           | Geotechnical investigations for the Metro<br>Line 2 in Torino – Extension of the section<br>towards Orbassano<br>Geognostic surveys<br>On-site testing (permeability, pressiometric, SPT)   | R.T.I. SYSTRA<br>/SOTECNI /<br>NEOSIA /<br>ITALFERR-et alii | € 109,169.88 |
| 2019      | 2020           | Undisturbed sample collection for laboratory analyses  Municipality of Gavi - Ordinances 78, 80, 99 - Flood event of October 21 and 22, 2019.  Temporary works to safeguard public safety.  | Municipality of<br>Gavi (AL)                                | € 450,919.99 |



|      | uration     | PROJECT DESCRIPTION  | CLIENT                         | Amount       |
|------|-------------|--|--------------------------------|--------------|
| From | to          | Emergency works for material removal, vegetation cutting, and cleaning of drainage channels on the North-west slope near the mule track  Excavations and earthworks  Foundation works, concrete structures, roadworks  |                                |              |
| 2019 | In progress | Slope stabilization Surface Hydraulic works Executive design, safety coordination during the design and execution phases for the   | Consorzio Arechi<br>S.c.a.r.l. | € 515,539.00 |
|      |             | construction of the 1st segment - 2nd lot of the project known as 'Salerno Porta Ovest'  Supply and installation of monitoring equipment for tunnels, temporary consolidation works.  Multi-year management of the service and data publication on a Web-Based platform  |                                |              |
| 2020 | 2020        | Construction of new pavilions - Alba / Bra hospital Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses MASW surveys   | MGR<br>VERDUNO<br>20005 S.p.a. | € 36,841.50  |
| 2020 | 2020        | Indagini a supporto progettazione esecutiva<br>per Nuovo Collettore Mediano -Torino<br>Geognostic surveys<br>On-site testing (permeability, pressiometric, SPT)<br>Undisturbed sample collection for laboratory analyses<br>MASW surveys   | COL.ME.TO<br>S.c.a.r.l.        | € 144,360.70 |
| 2020 | 2020        | Execution of a geotechnical and geophysical investigation campaign, preparatory to the design of the intervention for compliance with NTC2018 standards for the Thoux Viaduct – A5 Motorway  Geognostic surveys  On-site testing (permeability, pressiometric, SPT)  Undisturbed sample collection for laboratory analyses Inclinometers and piezometers | SAV S.p.a.                     | € 33,976.00  |
| 2020 | 2021        | Indagini Geognostiche e rifacimento strumentazione in foro Frane Serre la Voute e Cassas  Geognostic surveys  Inclinometers and piezometers  | SITAF S.p.a.                   | € 80,580.00  |
| 2020 | 2021        | General renovation and structural consolidation works on Detention Pavilions II and IV at the Milan - San Vittore Correctional Facility  Geognostic surveys  On-site testing (permeability, pressiometric, SPT)  Non-destructive testing and other tests on the pavillons masonry  | MYTHOS<br>S.C.A.R.L.           | € 30,312.00  |



| D<br>From | uration<br>to | PROJECT DESCRIPTION  | CLIENT  | Amount       |
|-----------|---------------|--|---|--------------|
| 2020      | In progress   | Completion and optimization works of the Turin–Milan route, with local road connections, through the interconnection between S.S. 32 'Ticinese' and S.P. 299. Novara Ring Road. Lot 0 and Lot 1 Supply and installation of monitoring equipment for embankments, consolidation works, and railway line interferences.  Multi-year management of the measurement service, and data publication on a Web-Based platform  | NOVARA<br>S.c.a.r.l.                                | € 339,161.00 |
| 2020      | In progress   | Redevelopment works of the Milan Hospital 'Ospedale Maggiore Policlinico, Mangiagalli, and Regina Elena' area  Supply and related services for the management of geotechnical, topographical, structural, and piezometric monitoring equipment at the construction site of the new di Milan Polyclinic  Data publication on a Web-Based platform   | SIS S.c.p.a.  | € 241,922.00 |
| 2020      | In progress   | Turin Automatic Metro Line 1 – Section 3 West Extension – Lot 1 'Fermi – Collegno Centro' Supply and installation of monitoring equipment for the tunnel, and surface sections, comprising buildings Publishing of data on web-based platform  | Italiana<br>Costruzioni<br>Infrastrutture<br>S.p.a. | € 237,625.93 |
| 2020      | In progress   | Turin Automatic Metro Line 1 – Section 3 West Extension - Lot 2 "Collegno Centro - Cascine Vica" Supply and installation of monitoring equipment for the tunnel, and surface sections, comprising buildings Publishing of data on web-based platform   | Italiana<br>Costruzioni<br>Infrastrutture<br>S.p.a. | € 191,761.10 |
| 2021      | 2021          | Assignment of the seismic vulnerability assessment service, energy diagnosis, geometric, architectural, technological, and plant surveys to be delivered in BIM format, and technical-economic feasibility design to be delivered in BIM format for certain state-owned properties – Lot 4 – Agenzia del Demanio, Piedmont and Aosta Valley Directorate. Geotechnical and geophysical investigations  Geognostic surveys  On-site testing (permeability, pressiometric, SPT) | R.P.A. S.p.A.                                       | € 42,526.00  |
| 2021      | 2021          | Undisturbed sample collection for laboratory analyses S.P. 23 'del Sestriere' - Pragelato-Cesana section. Geotechnical investigation plan aimed at defining interventions for slope instability affecting the provincial road network  | Torino Città<br>Metropolitana                       | € 58,269.69  |



| Du<br>From | ration<br>to | PROJECT DESCRIPTION   | CLIENT           | Amount       |
|------------|--------------|---|------------------|--------------|
| 2021       | 2021         | Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses Inclinometers and piezometers Geological/geotechnical investigations preparatory to the design for the restoration of the road connection along S.P. No. 142, interrupted due to the partial collapse of the bridge over the 'Sesia'. TOAD080-20 - S.P. 142 - Romagnano Sesia Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses | ANAS Torino      | € 70,252.99  |
| 2021       | 2021         | Execution of in-situ geognostic, geotechnical, and environmental investigations, preparatory to the preparation of the Preliminary Design for the Automatic Metro Line 2 in Torino - Functional Section Politecnico-Rear of Rebaudengo Station. Lot 1: Execution of geotechnical investigations in the sub-section Politecnico-Pozzo Verona  Geognostic surveys  On-site testing (permeability, pressiometric, SPT)  Undisturbed sample collection for laboratory analyses  Automated piezometers                                     | INFRA.TO s.r.l.  | € 160,345.67 |
| 2021       | 2021         | Works for the execution of on-site geognostic, geotechnical, and environmental investigations, preparatory to the Preliminary Design for the Automatic Metro Line 2 in Torino - Functional Section Politecnico - Rear of Rebaudengo Station. Lot 2: Execution of geotechnical investigations in the sub-section Novara - Rear of Rebaudengo Station  Geognostic surveys e On-site testing (permeability, pressiometric, SPT)  | INFRA.TO s.r.l.  | € 142,547.34 |
| 2021       | 2021         | Undisturbed sample collection for laboratory analyses  Execution of geognostic investigation in the Municipality of Collegno (TO) - Cascina Gay Area  Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses   | GeoStudio S.r.l. | € 45,207.00  |
| 2021       | 2021         | Piezometers  Execution of geognostic investigation at the construction site in Buttigliera Alta (TO), Hm. Ferriera  | IMAF s.r.l.      | € 24,117.80  |



| Duration<br>From to |      | PROJECT DESCRIPTION   | CLIENT                                    | Amount       |
|---------------------|------|---|---|--------------|
|                     |      | Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses Piezometers   |   |              |
| 2021                | 2021 | Execution of geognostic investigations and environmental surveys related to the characterization of soils and groundwatera, within preliminary, definitive, and executive design of railway lines and nodes, as well as road infrastructure and civil and industrial plants located within the Northern Geographic Area. LOT 1 - RdA 41808 - Regions: Piedmont, Liguria, and Aosta Valley Geognostic surveys  On-site testing (permeability, pressiometric, SPT)  Undisturbed sample collection for laboratory analyses Inclinometers and piezometers | ITALFERR<br>(A.T.I.<br>Georicerche)       | € 174,589.62 |
| 2021                | 2021 | Urgent works for the consolidation and safety of the slopes on the municipal road of Borgata Tetti, in the Sabbionera area, and restoration of the road network  Rock face stabilization through the installation of nets adjacent to the surface.  Accessory works   | Municipality of<br>Rubiana (TO)           | € 157,048.31 |
| 2021                | 2022 | Securing the municipal heritage – Reconstruction of the retaining wall with the adjacent municipal building for social purposes, next to the public road and San Martino Church. Municipality of Orsara Bormida (AL). 1st and 2nd lots.  Slope stabilization through a retaining wall with micropiles and tie rods  | Municipality of<br>Orsara Bormida<br>(AL) | € 136,858.48 |
| 2021                | 2022 | Slope stabilization works in Regione Boschi - Vesime (AT) Geognostic surveys On-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses Inclinometers and piezometers   | Municipality of<br>Vesime (CN)            | € 34,935.10  |
| 2021                | 2022 | A33 Asti-Cuneo Motorway S.p.A Section II Lot 6: Roddi-Enel Dam. Free-flow toll system Geognostic surveys and on-site testing (permeability, pressiometric, SPT) Undisturbed sample collection for laboratory analyses Inclinometers and piezometers   | ITINERA S.p.A.                            | € 85,728.00  |
| 2021                | 2022 | A2 Salerno-Reggio Calabria Motorway (SA-RC) - Lagonegro-Lauria section. Macrolotto 2 'Works for modernization and adaptation to type 1/a of the CNR/80 standards from km 108+000 to km 139+000. DG 48/04.   | S.I.S. S.c.p.a.                           | € 138,195.00 |



| Duration<br>From to |             | PROJECT DESCRIPTION  | CLIENT                                    | Amount       |
|---------------------|-------------|--|---|--------------|
| 2021                | In progress | Assignment for the revamping of installed automatic monitoring systems  Maintenance and restoration of automatic monitoring systems  Structural testing and instrumental measurements.  Management of data on web-based platform  S.S. n. 340 Regina – Tremezzina variant  Geognostic surveys e indagini geofisiche  | S.I.S. S.c.p.a.                           | € 123,355.00 |
| 2021                | In progress | Supply and installation of monitoring equipment for the designed works, comprising buildings Publishing of data on web-based platform S.S. 685 – Restoration works for the concrete of the arch of the Cesaronica tunnel Geophysical prospections inside the tunnel Supply and installation of tunnel monitoring sections Data management and publishing on web-based platform | L.S.I.<br>COSTRUZIONI                     | € 56,812.00  |
| 2021                | In progress | Construction of a four-level underground parking facility in the internal area of the 'Cittadella Politecnica', located between the M/N classrooms and the above-ground multistory parking lot  Geophysical cross-hole prospections  Supply and installation of structural monitoring sections  Publishing and management of data on a web-based platform                      | MATTIODA                                  | € 85,667.00  |
| 2021                | In progress | Construction of civil works, line works, and related structures from km 127+343 to km 132+922 – Contract 4 Lugana-Frassino West Supply of monitoring instrumentation Management and verification of monitoring data, with the provision of software and database   | GEOSAT S.r.l.                             | € 99,965.40  |
| 2022                | 2022        | Safety works on the slope below Santa Limbania, affected by hydrogeological instability - Flood events of 21-22/10/2019 and 21-25/11/2019  Stabilization of the landslide-prone wall with the execution of scaling and installation of double-twist steel mesh in adherence  | Municipality of<br>Rocca Grimalda<br>(AL) | € 202,248.14 |
| 2022                | 2022        | Improvement of the Rio Albara Watershed - Castelletto D'orba (AL) Geognostic and geophysical investigations  | Municipality of<br>Castelletto D'orba     | € 54,329.42  |
| 2022                | 2022        | Carlo Amione Barracks - Torino Preliminary Geognostic and Geotechnical Investigations  | Agency for the State Property             | € 92,892.00  |



| Duration |             |  |  |              |  |
|----------|-------------|--|--|--------------|--|
| From     | to          | PROJECT DESCRIPTION  | CLIENT                                       | Amount       |  |
| 2022     | 2022        | Safety interventions for the stabilization processes of the eastern and southeastern slopes of the Gavazzana – Cassano Spinola settlement  Stabilization of the landslide with the construction of a reinforced concrete wall founded on micropiles and anchored with tie rods  Gabion walls, hydraulic management, and reconstruction of a section of the sewer system  | Municipality of<br>Cassano Spinola<br>(AL)   | € 253,879.04 |  |
| 2022     | 2022        | Stabilization of the slope in severe hydrogeological instability with the risk of isolating the inhabited area of Viaiano due to the collapse of the access road – Viaiano Municipal Road – Lot I and II  Stabilization of the valley edge of the municipal road with a micropile diaphragm.  Restoration of the asphalt pavement and hydraulic management interventions | Municipality of<br>Farigliano (CN)           | € 471,977.30 |  |
| 2022     | 2023        | Hydrogeological improvement of the slope adjacent to the industrial areas – Lot I – Municipality of Rubiana  Stabilization of the landslide with a micropile diaphragm, scaling on the wall, and installation of double-twist steel mesh in adherence  | Municipality of<br>Rubiana (TO)              | € 345,687.06 |  |
| 2022     | 2023        | Continuous monitoring using terrestrial SAR interferometry (TInSAR) of the landslide area along the S.S.35 at km 26+800  Continuous interferometric monitoring Remote management and early warning via Web-Based platform  | ANAS Genova                                  | € 74,098.75  |  |
| 2022     | In progress | Hydrogeological stabilization of the slope adjacent to the industrial areas – Lot I–Rocchetta Belbo  Consolidation of landslide with micropile retaining wall Hydraulic regulation interventions   | Municipality of<br>Rocchetta Belbo<br>(CN)   | € 249,531.25 |  |
| 2022     | In progress | Stabilization of the landslide-prone slope affecting the Camere Vecchie district – Completion – Roccaforte Ligure  Stabilization of the landslide with reinforced concrete structures founded on tieback micropile walls. Restoration of the asphalt pavement and hydraulic management interventions   | Municipality of<br>Roccaforte Ligure<br>(AL) | € 369,618.75 |  |



| Duration<br>From to |             | PROJECT DESCRIPTION   | CLIENT                                     | Amount       |
|---------------------|-------------|---|--|--------------|
| 2022                | In progress | Safety and stabilization of the slopes affected by hydrogeological instability in the town center – Roascio Interventions for the stabilization of the landslide with reinforced concrete curbs founded on micropiles, and anchored with tie rods. Restoration of the asphalt pavement and hydraulic management interventions | Municipality of<br>Roascio (CN)            | € 630,661.14 |
| 2022                | In progress | Stabilization of the landslide in the Castelvecchio area –Capriata d'Orba Stabilization of the landslide with a tieback micropile wall Natural engineering works for the surface stabilization of the slope   | Municipality of<br>Capriata d'Orba<br>(AL) | € 663,517.80 |
| 2022                | In progress | Stabilization and safety of the embankments and rock face in the Roccarina area – Chiusa Pesio  Stabilization of the rock face with scaling and installation of mesh in adherence, construction of rockfall catchment ditches, demolition of rock masses  | Municipality of<br>Chiusa Pesio<br>(CN)    | € 274,399.49 |
| 2022                | In progress | Works for upgrading to category C1 and safety improvement of the section between Chivasso and Caluso with a bypass around the town of Aré  Track monitoring using an automated total station and biaxial electronic levels  Data management on a Web-Based platform   | Sposato<br>Costruzioni                     | € 79,900.00  |
| 2022                | In progress | SS26dir - Preliminary investigations for the development of the intervention project on the Entrèves tunnel (AO)  Water survey  Hydrogeologic monitoring  | Soc. Italiana<br>Traforo Monte<br>Bianco   | € 56,595.00  |
| 2022                | In progress | S.P. 142/A "Biellese" (Bypass Junction) – Structural monitoring service for the 'Extraordinary maintenance works on the 'Torrente Cervo' bridge at km 1+000' Structural monitoring of the bridge over the Cervo River with Wi-Fi inclinometers Remote management and early warning via Web-Based platform                     | ANAS Torino                                | € 54,757.97  |
| 2022                | In progress | Project for the works to upgrade the main embankment of the Tanaro River Geognostic, geophysical, and environmental investigations  | AIPO Alessandria                           | € 139,205.76 |
| 2022                | In progress | Route Napoli-Bari – Double track section<br>Cancello-Benevento – II Functional Lot<br>Frasso Telesino-Vitulano – 3rd Sub-Lot San<br>Lorenzo-Vitulano  | GEOSAT Srl                                 | € 132,645.00 |



| Duration<br>From to |             | PROJECT DESCRIPTION   | CLIENT   | Amount       |
|---------------------|-------------|---|--|--------------|
| 2022                | In progress | Geotechnical and structural monitoring of the works for<br>the execution of the lots and the high-speed rail line<br>Stabilization of the landslide-prone slope<br>above the village of Montegioco<br>Geognostic and geophysical investigations   | Municipality of<br>Montegioco (AL)                             | € 99,810.02  |
| 2022                | In progress | Toll Road Pedemontana Veneta – Malo<br>Tunnel<br>Ground-penetrating radar (GPR) investigations on the   | SIS S.c.p.a.   | € 69,578.50  |
| 2022                | In progress | "Adriatica" – Ancona Bypass: expansion from 2 to 4 lanes from the Falconara interchange with the S.S.76 to the Baraccola area. Lot I: Falconara-Torrette section (including interchanges)  Geotechnical and structural monitoring for the execution of works related to the lot, including tunnels, viaducts, and civil works   | INC S.p.a.   | € 75,217.70  |
| 2023                | In progress | S.S. 38 "Dello Stelvio" – Accessibility to Valtellina Lot 4: Tirano junction. (Section 'A' (Bianzone Interchange – La Ganda Interchange) and Section 'B' (La Ganda Interchange – Campone in Tirano), along with the related environmental monitoring service during construction  Geotechnical and structural monitoring of the works for the execution of natural and artificial tunnels, viaducts, and civil works.  Remote management and early warning via Web-Based platform | INC S.p.a.   | € 32,935.00  |
| 2023                | In progress | Supply and installation of structural monitoring sensors on viaducts and tunnels of the Salerno-Pompei-Napoli highway  Supply and installation of structural monitoring sensors  Assistance in the design of the systems  | SIPAL S.p.a.   | € 478,524.00 |
| 2023                | In progress | Technical and economic feasibility project for integrated contracting, project management, and safety coordination – ASL TO5 various sites  Execution of geognostic investigations and surveys  | R.T.P. SD<br>Partners s.r.l. /<br>SIPAL S.p.A. /<br>Piscitelli | € 70,440.11  |
| 2023                | In progress | East bypass of the city of Alba for the connection between the regional road to Cortemilia-Savona and the ring road for Asti-Cuneo-Turin. Third Bridge over the Tanaro River  Execution of geognostic investigations and surveys  | Cuneo Province   | € 100,752.69 |



 Duration From to
 PROJECT DESCRIPTION
 CLIENT
 Amount

 2023 In progress
 Ex-Regis Area Settimo Torinese Execution of geognostic investigations and surveys
 Roger s.r.l.
 € 70,440.11

# **GEOLOGY AND GEOTECNICS**

### **MONITORING**

## LAND SURVEILLANCE

**CONSOLIDATION WORKS** 

**DATA ANALYSIS** 

**RISK MITIGATION** 

> **TERRITORIAL INFORMATION**

**WEB-GIS** 



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