

The PocketLIM 6G, the new LIM data recorder has been marketed since June 2022



Since June 2022, the new generation of LIM data recorder, the PocketLIM 6G is marketed. It is intended to completely replace the PocketLIM-5G.

Taking the design of the PocketLIM-5G 7" and keeping the same menu structure, the innovation of the PocketLIM 6G mainly concerns the speed of execution of tasks (new microprocessor) and connectivity.

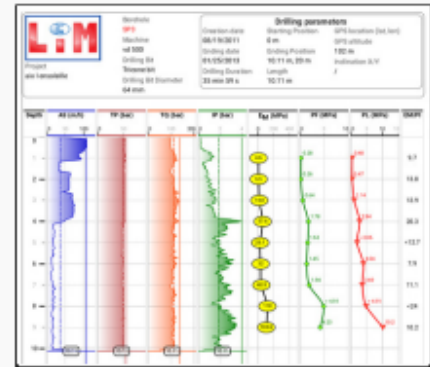
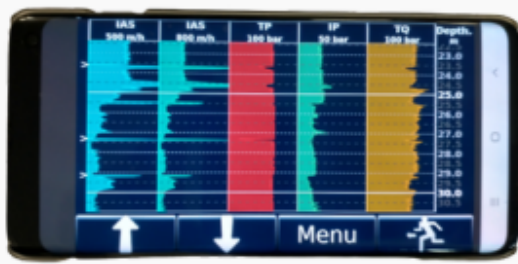
The innovations of the PocketLIM-6G compared to the PocketLIM-5G are the following:

- The color touch screen (7" 16/9 format) similar to smartphone, high brightness and anti-reflective with icons, color codes & virtual keyboard;
- Immediate responsiveness when pressing a key;
- Boot time reduced to 15 seconds;
- The scratch-resistant and vandal-resistant tempered glass front panel;
- The possibility of remote control by a LIM operator for the operations of maintenance or driller assistance;
- The device's ecosystem is summarized in the diagram on the next page. Compared to the PocketLIM-5G, the new features are the **Mirroring** web application (see **cloud@LIM**) which allows the screen of the PocketLIM-6G to be repeated remotely on a laptop, smartphone or tablet allowing supervision of drilling operations remotely with takeover, the Litho function on the device which allows the field operator to manually enter the lithologic section of the borehole and the Pressio function which displays the raw pressuremeter curve of the test in real time (Pressio and Geotech versions).



The PocketLIM ecosystem

Multi-application data logger for drilling, geotechnical, mining and foundations



Mirroring function

visualization on remote screen
and remote control

LIM@mail

file transfer with automatic data
pre-processing.
Generation of PDF reports

Litho

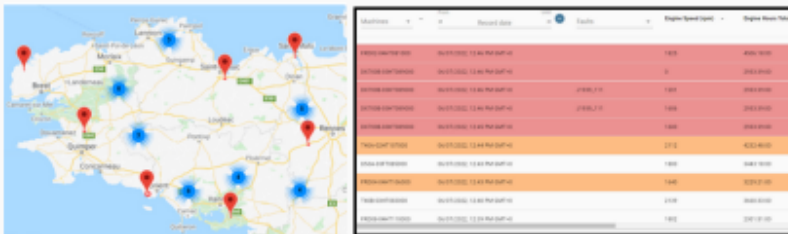
entry of the borehole
lithology

Pressio

pressuremeter curve
display in real time



GEO-LOG₄
data processing and
borehole logs in the
cloud



Drill@LIM

drill rigs geolocation, monitoring and maintenance
Production statistics

NaviLIM

high precision GPS assistance
to drill rig guidance



PocketLIM-6G versions

The **PocketLIM-6G** has all the versions of the **PocketLIM-5G** namely:

- **Drilling** version: recording of drilling parameters (MWD);
- **Drill & Blast** version: Drilling version + 3D mast positioning;
- **Pressio** version: acquisition of the Menard pressuremeter tests;
- **Geotech** version: combination of the Drilling and Pressio versions;
- **Grouting** version: control of up to 4 injection pumps (for the moment) with recording of parameters Flow, Pressure, Volume of the grout vs time;
- **Lugeon** version: Time-dependent acquisition of Lugeon water test (packer test) parameters;
- **Jet** version: Control of the placement of Jet-Grouting columns and recording of drilling and Jet-Grouting parameters vs depth;
- **Penetro** version: Acquisition of dynamic probing data (Heavy Dynamic Penetrometer).

In addition to these different versions, the **PocketLIM-6G** offers the **NaviLIM** function which provides the operator with high precision GNSS (GPS) guidance for the drill..

PocketLIM-6G: The new CFA (Auger cast piling) version



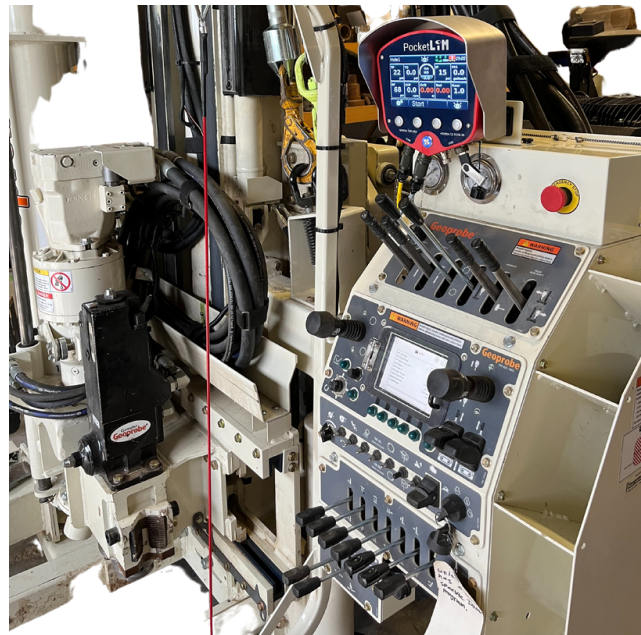
In order to reposition itself better on the Deep Foundations market, LIM has developed a new CFA version for recording parameters and controlling auger cast piles. The new **PocketLIM-6G CFA** version controls the installation of auger cast piles (CFA) and records the parameters.



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- During the drilling phase: 2D positioning (verticality control) of the drilling mast, Instantaneous drilling depth, Instantaneous Advance Speed or Rate of Penetration (ROP), Rotation Speed (RS), pressure on the bit or Thrust Pressure (TP) and pressure of the Rotation Torque (TQ).
- Concreting phase (ascent): Instantaneous Ascent Speed or Auger Extraction Rate (AER), Rotation Speed (RS), Torque (TQ), Concrete Pressure (CP), Instantaneous Concrete Consumption & Percentage of filling according to the theoretical diameter of the pile.

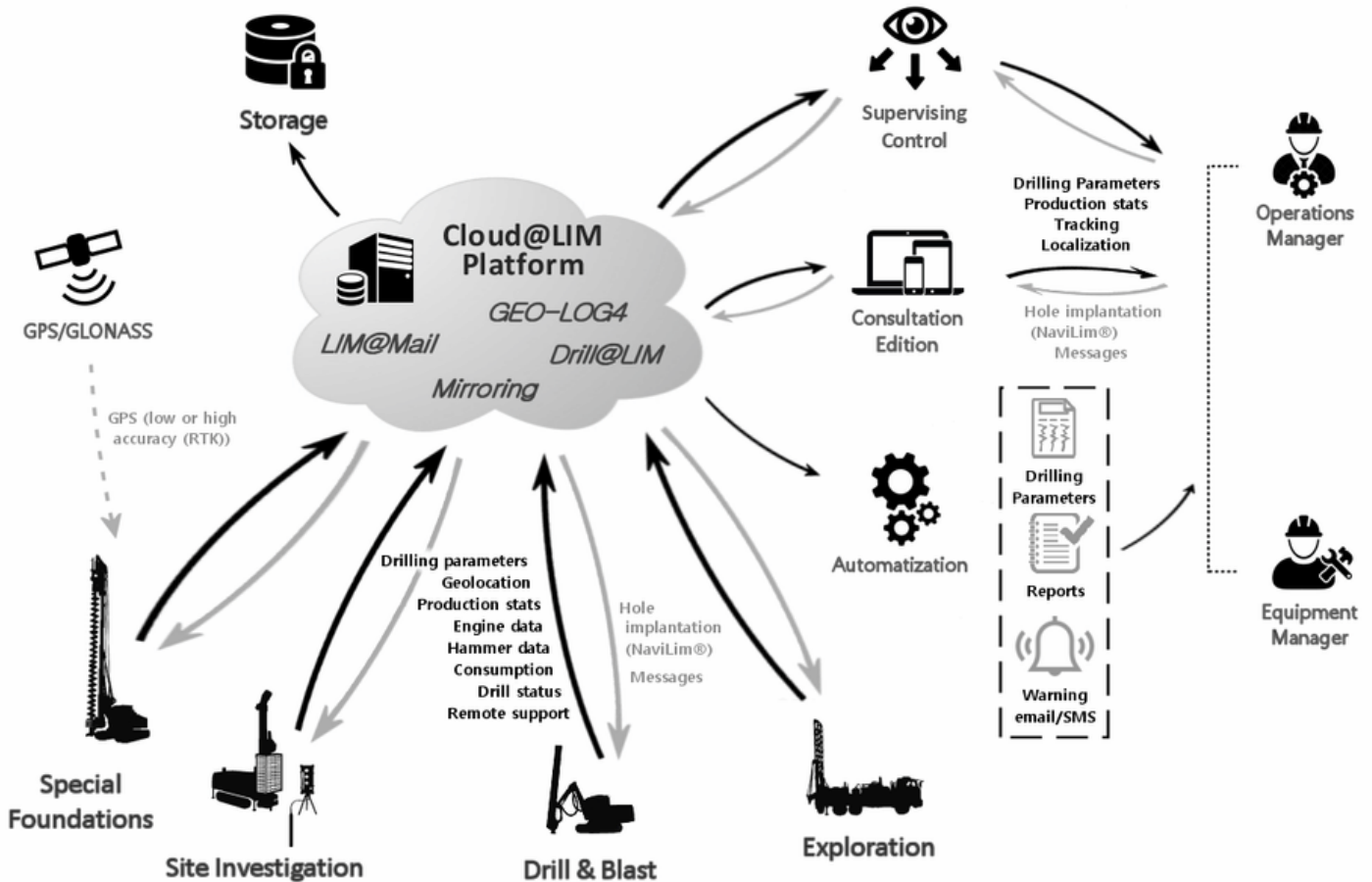
Installing the PocketLIM-6G in "plug & play" mode on a Geoprobe machine (USA)



At the start of 2023, the **PocketLIM 6G** was installed on a multi-purpose hydraulic geotechnical drill brand and model **GEOPROBE 3126GT**, to record the drilling parameters with the **Drill@LIM** option allowing the monitoring of engine parameters. With the SIM card or the WiFi connection, the client user of the machine can access the services of the **Cloud@LIM** platform (automatic data transfer, mirroring, remote control of the recorder and monitoring/maintenance of the machine's engine). The **GEOPROBE 3126GT** machine, which is of the latest generation, is supplied completely pre-equipped with sensors using the open CANBUS protocol, **LIM does not install any of its sensors**. We were able to get all the communication protocol information from Geoprobe, which made installation extremely quick and easy, plug and play mode.



The cloud@LIM platform



For the data downloading and processing as well as for the layout of borehole logs, LIM has been using the cloud based software for more than 10 years with the following applications in particular:

- **LIM@mail**, which manages the downloading of data files by USB, 4G and Wifi ([open BOR format](#));
- **GEO-LOG 4**, which makes it possible to analyze the recorded in-situ tests (pressuremeter tests) and to lay out the borehole logs in a personalized way with all the field recordings and the user's manual entries;
- **Drill@LIM**, which allows the monitoring of machine and engine parameters of a fleet of several drills with the real-time sending of notifications via email if faults are detected;
- Today with the new **Mirroring** web application which allows remote supervision of the new **PocketLIM-6G** recorder with real-time display of its screen and the possibility of taking control from a connected laptop, tablet or smartphone.

All applications are now grouped together in a single platform called **cloud@LIM**.



GEO-LOG 5: Grouting data processing version

Detailed daily report

Duration: 14:53:58 | Total volume (l): 5831.63 | Grouted volume (l): 5790.63 | Project: VILLA LUCIANA MONACO

Day: 28/01/2022 | Duration: 07:09:58 | Grouted volume (l): 3151.85

Borehole: IN A 28 | Grouted volume (l): 1628.12 | Duration: 02:18:22

Top depth (m)	Bottom depth (m)	Phase	Start at	End at	Duration	Volume stopping threshold (l)	Grouted volume (l)	Average flow (l/h)	End flow (l/h)	Pressure stopping threshold (bar)	Average pressure (bar)	End pressure (bar)	Stop cause
20.00	20.33	A	28/01/2022 12:14:25	28/01/2022 14:10:08	01:55:19	0.00	301.46	851.37	1280.00	50.00	25.10	22.37	manual
20.33	20.66	A	28/01/2022 11:50:11	28/01/2022 12:13:02	00:22:15	0.00	316.52	852.59	440.00	50.00	20.65	16.65	manual
20.66	21.00	A	28/01/2022 11:32:07	28/01/2022 11:49:11	00:16:59	0.00	300.64	1060.71	1920.00	50.00	19.88	23.96	manual
21.33	21.66	A	28/01/2022 11:06:52	28/01/2022 11:29:09	00:22:16	0.00	367.07	991.78	216.00	50.00	17.30	18.56	manual
21.66	22.00	A	28/01/2022 10:43:56	28/01/2022 11:05:23	00:20:46	0.00	329.24	957.92	1760.00	50.00	20.12	15.75	manual
20.33	20.66	A	28/01/2022 10:17:03	28/01/2022 10:18:38	00:00:34	0.00	11.30	1171.49	2000.00	50.00	41.48	36.62	manual
20.66	21.00	A	28/01/2022 10:15:30	28/01/2022 10:15:59	00:00:12	0.00	1.89	590.32	56.00	50.00	41.88	5.75	manual

Borehole: IN A 30 | Grouted volume (l): 55.26 | Duration: 00:06:28

Top depth (m)	Bottom depth (m)	Phase	Start at	End at	Duration	Volume stopping threshold (l)	Grouted volume (l)	Average flow (l/h)	End flow (l/h)	Pressure stopping threshold (bar)	Average pressure (bar)	End pressure (bar)	Stop cause
21.66	22.00	A	28/01/2022 10:32:01	28/01/2022 10:40:00	00:06:28	0.00	55.26	510.90	1088.00	50.00	37.82	35.53	manual

Borehole: INEZONE A30 | Grouted volume (l): 623.00 | Duration: 02:28:27

Top depth (m)	Bottom depth (m)	Phase	Start at	End at	Duration	Volume stopping threshold (l)	Grouted volume (l)	Average flow (l/h)	End flow (l/h)	Pressure stopping threshold (bar)	Average pressure (bar)	End pressure (bar)	Stop cause
9.00	9.33	A	28/01/2022 12:01:58	28/01/2022 14:11:48	02:09:50	0.00	300.36	976.35	1672.00	50.00	25.89	29.43	volume
9.33	9.66	A	28/01/2022 11:44:38	28/01/2022 12:01:12	00:16:34	0.00	301.52	1091.09	488.00	50.00	29.82	23.12	manual
9.66	10.00	A	28/01/2022 11:42:27	28/01/2022 11:44:31	00:02:02	0.00	21.12	751.88	0.00	50.00	25.99	0.93	pressure

Borehole: INEZONE A31 | Grouted volume (l): 845.48 | Duration: 01:16:40

Top depth (m)	Bottom depth (m)	Phase	Start at	End at	Duration	Volume stopping threshold (l)	Grouted volume (l)	Average flow (l/h)	End flow (l/h)	Pressure stopping threshold (bar)	Average pressure (bar)	End pressure (bar)	Stop cause	
21.66	22.00	A	28/01/2022 10:43:56	28/01/2022 11:05:23	00:20:46	0.00	329.24	957.92	3992.00	1760.00	50.00	20.12	15.75	manual

Global report

Duration: 14:53:58 | First grouting: 28/01/2022 09:29:00 | Last grouting: 12/07/2023 16:17:55

Grouted volume (l): 5790.63 | Project: VILLA LUCIANA MONACO

Borehole: IN A 28 | Duration: 06:00:43 | First grouting: 28/01/2022 09:15:30 | Last grouting: 31/01/2022 13:45:39

Grouted volume (l): 2318.88 | Number of records: 12.00 | Top depth (m): 18.33 | Bottom depth (m): 22.00

Top depth (m)	Bottom depth (m)	Pump	Phase	Start at	End at	Duration	Volume stopping threshold (l)	Grouted volume (l)	Average flow (l/h)	Max flow (l/h)	End flow (l/h)	Pressure stopping threshold (bar)	Average pressure (bar)	Max pressure (bar)	End pressure (bar)	Stop cause
18.33	18.66	1	A	31/01/2022 14:45:39	31/01/2022 14:50:53	00:03:36	0.00	29.58	717.88	1944.00	696.00	50.00	18.29	71.21	15.59	manual
19.33	19.66	1	A	31/01/2022 11:47:58	31/01/2022 13:48:16	01:59:58	0.00	303.62	691.46	3912.00	1304.00	50.00	20.56	73.46	21.12	manual
20.00	20.33	1	A	28/01/2022 12:14:25	28/01/2022 14:10:08	01:55:19	0.00	301.46	851.37	4656.00	1280.00	50.00	25.10	50.46	22.37	manual
20.33	20.66	1	A	28/01/2022 10:17:03	28/01/2022 10:18:38	00:00:34	0.00	11.30	1171.49	3984.00	2000.00	50.00	41.48	89.75	36.62	manual
20.33	20.66	1	A	28/01/2022 09:59:00	28/01/2022 10:27:23	00:27:50	0.00	335.05	727.56	2384.00	1512.00	50.00	30.89	71.12	33.50	manual
20.66	21.00	1	A	28/01/2022 10:15:30	28/01/2022 10:15:59	00:00:12	0.00	1.89	590.32	2576.00	56.00	50.00	41.88	91.84	5.75	manual
20.66	21.00	1	A	28/01/2022 11:32:07	28/01/2022 11:49:11	00:16:59	0.00	300.64	1060.71	2200.00	1920.00	50.00	19.88	38.71	23.96	manual
20.66	21.00	1	A	31/01/2022 09:46:40	31/01/2022 09:57:57	00:10:31	0.00	16.96	332.64	3840.00	0.00	50.00	40.52	74.84	42.84	manual
21.33	21.66	1	A	28/01/2022 11:06:52	28/01/2022 11:29:09	00:22:16	0.00	367.07	991.78	2184.00	216.00	50.00	17.30	23.84	18.56	manual
21.33	21.66	1	A	31/01/2022 09:43:13	31/01/2022 09:43:56	00:00:24	0.00	5.54	792.45	1880.00	664.00	50.00	50.13	85.34	37.12	manual
21.66	22.00	1	A	28/01/2022 10:43:56	28/01/2022 11:05:23	00:20:46	0.00	329.24	957.92	3992.00	1760.00	50.00	20.12	81.12	15.75	manual

GEO-LOG 5 is on the way... **GEO-LOG 5** will be the new platform for processing LIM data in the cloud. **GEO-LOG 5** will not only replace **GEO-LOG 4** but will completely integrate **cloud@LIM** and all its applications with the addition of borehole logging data processing (LIM LOGGING). During the summer of 2023, the first version of **GEO-LOG 5** will be online to process grouting data that was not processed by **GEO-LOG 4**. The screenshot above shows an example of a global injection report under **GEO-LOG 5**.

Optimization of the electrical consumption of the PressioLIM & PressioLIM AUTO

The electronic cards of the **PressioLIM** & **PressioLIM AUTO** and the solenoid valves of the **PressioLIM AUTO** have been modified in order to reduce their electrical consumption by 40%. This concerns both standard (50 & 80 bar) and high pressure (up to 130 bar) versions.



NanoLIM: New PRESSIO & GEOTECH versions



For geotechnical boreholes with Menard pressuremeter tests, LIM offers a complete "low cost" solution with a "manual" **PressioLIM** PVC (the pressure steps are incremented by the operator) and a **NanoLIM** recorder which can be configured either in **PRESSIO mode** only (recording of pressuremeter tests), or in **GEOTECH mode** (recording of both pressuremeter tests and drilling parameters).

The downloading of the data files recorded by the **NanoLIM** is done via a USB key (Wifi optional). The analysis of the data recorded by the **NanoLIM** and the layout of the borehole logs are carried out using **GEO-LOG 4**.

New optical ScanLIM version 2



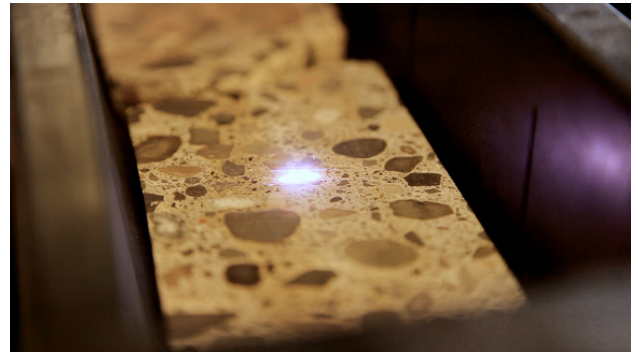
The **ScanLIM-2** in its optical version, released in 2022, allows the creation of a digital core library that perfectly respects the colors and the scale of all the constituent elements of the cores. In a few clicks, it is possible to view all the cores of a borehole placed end to end.

All boreholes references are incorporated into the files, which allows rigorous archiving.

All the equipment is removable for greater ease of transport. On assembly, it is operational in 20 minutes. One person is enough to operate the system.



ScanLIM-2 LIBS project



In partnership
with



Since 2020, LIM has been working on the **ScanLIM-2 LIBS** project. LIBS means in English Laser-Induced Breakdown Spectroscopy, the method consists in sending during the scan, a laser beam on the core in order to create a plasma at one point then to analyze the detected spectra of the chemical elements sought such as Pb, Cu, Zn, W, Li, etc... The LIBS technology partner in this project is **ABLATOM**. The objective of the project is to have a core scanner allowing on site to pride the "grade" of the main chemical elements in real time while scanning. This product will save considerable time in geochemical analyses.

Click on the link to view the you tube video presenting the **ScanLIM-2 LIBS** project.



New distributors and representatives since 2021

Our distribution network has been strengthened internationally in 2022-2023 with:

ABSOLUTE PRECISION KZ in Kazakhstan

S.M.D. (Solution Mécanique Diesel) for Eastern Canada (QC, Ontario, Maritime Provinces)

[Click to access the list of all our distributors](#)

The LIM sales team has been strengthened with the arrival of **Moe Tubor**, based in Indonesia, who covers the APAC zone for the marketing of the entire range of **LIM** and **LIM LOGGING** products.

Fairs & Exhibitions 2023 - Beginning of 2024

In 2023, we have already participated in the following fairs and exhibitions:

02/05 to 02/07 2023: **ISEE 2023** (*Drill & Blast*) - San Antonio (TX, USA);

03/05 to 03/08 2023: **PDAC 2023** (*Mine, Exploration*) - Toronto (ON, Canada);

03/26 to 03/29 2023: **Geo-Congress 2023** (*Geotechnics*) - Los Angeles (CA, USA);

04/02 to 04/06 2023: **SAGEEP 2023** (*Geophysics*) - New Orleans (LA, USA);

04/24 to 04/27 2023: **EXPOMIN 2023** (*Mines*) - Santiago (Chile);

06/14 to 06/15 2023: **SOLSCOPE 2023** (*Geotechnics, Foundations*) - Lyon (France);

08/28 to 08/31 2023: **IMAGE 2023** (*Geophysics*) - Houston (TX, USA);

09/04 to 09/06 2023: **EAGE NSR 2023** (*Geophysics*) - Edinburgh (SCO, United-Kingdom);

09/12 to 09/16 2023: **GEOFLUID 2023** (*Drilling, Geotechnics, Foundations*) - Piacenza (Italy);

10/04 to 10/06 2023: **SIM 2023** (*Mines & Quarries*) - Bordeaux (France);

For the end of 2023 and the beginning of 2024, we are registered for the following fairs and exhibitions:

10/31 to 11/03 2023: **DFI 2023** (*Foundations*) - Seattle (WA, USA);

12/05 to 12/07 2023: **NGWA** (*Drilling*) - Las Vegas (NV, USA);

01/25 to 01/27 2024: **ISEE 2024** (*Drill & Blast*) - Savannah (GA, USA);

03/03 to 03/06 2024: **PDAC 2024** (*Mine, Exploration*) - Toronto (ON, Canada).

