

Case study - Drill@LIM

Application to quarry drilling - drill & blast



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from	to	Machines	Devices	Faults
∞	∞			
31/05/21, 15:42		SAV	53018	
31/05/21, 15:42		TMB28A-04FT087000	52124	
31/05/21, 15:42		D50A-04FT085000	52149	
31/05/21, 15:41		SAV	53018	RIG_COMPR_LUB_CLOG
31/05/21, 15:40		T40B-04HT083000	52123	
31/05/21, 15:39		T40A-09HT107000	52122	
31/05/21, 15:36		SAV	53018	
31/05/21, 15:35		FRD04-09HT106000	52108	
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Presentation

The Nxx company, based in eastern France, offers for hire drilling machines specializing in production drilling in quarries (drill & blast).

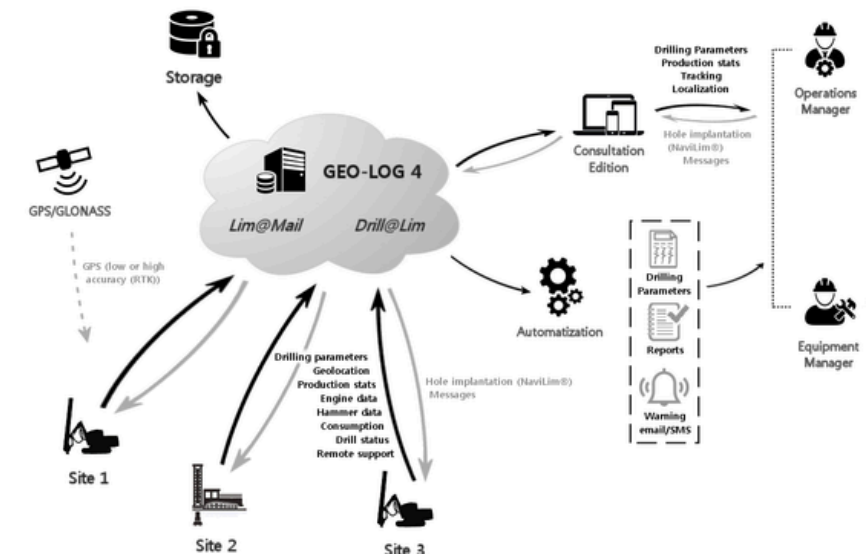
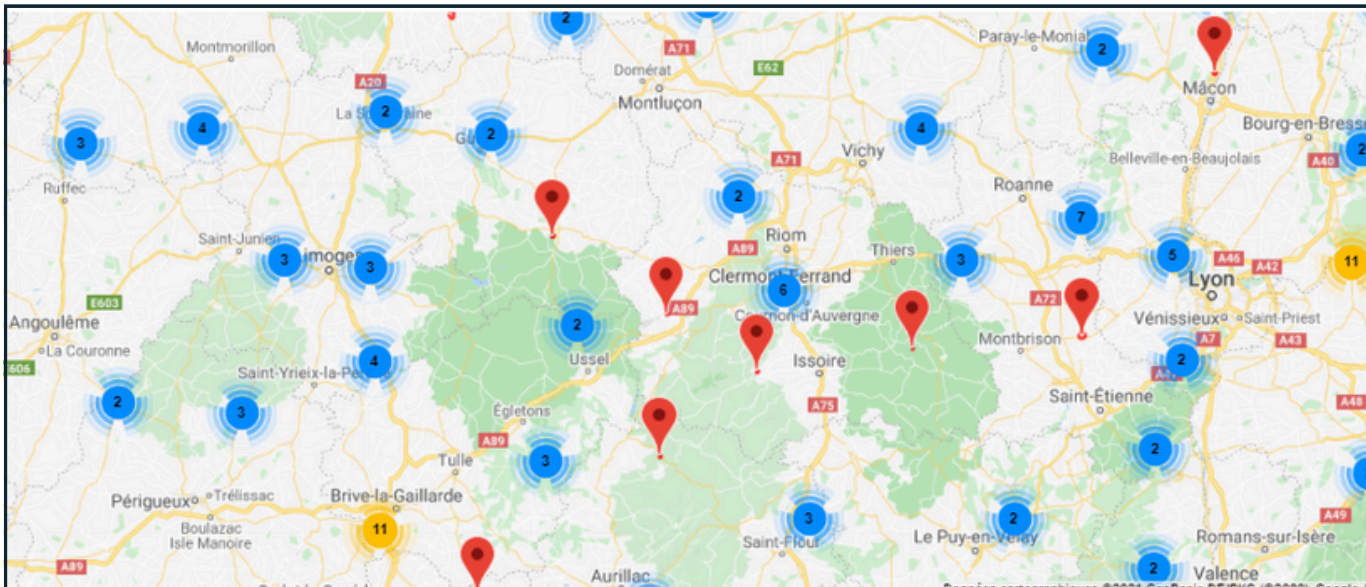
The Nxx company has 18 drilling machines, **5 x Epiroc (T40, D50)**, **4 x Sandvik (DX700, DI450)**, **8 x Furukawa (HCR1550, HCR1800, ..)** and **1 x TMB 28A**.

Nxx's main customer is the Ty group, a world leader in the explosives sector which has a drilling division in France. For its quarry drilling activity, Ty in addition to its own machines, permanently rents drills from Nxx. The machines are spread over the whole of France.

Nxx's 18 drilling machines are each equipped with a PocketLIM drilling parameter recorder.

To monitor the maintenance of its drill rigs, thanks to the **PocketLIM** installed on all machines, Nxx uses the online service **Drill @ LIM** which allows it to obtain the following information which is essential :

- Real-time geolocation of drilling machines;
- Real-time alerts on engine or hammer incidents via email requiring rapid intervention;
- Continuous information on the hours of use of the engine and the hammer in order to plan machine shutdowns for overhauls and oil changes;
- Continuous real-time information on fuel and engine oil consumption;
- Daily and monthly reports notified by email summarizing the drilling machine, the **PocketLIM** device number, the name of the operator, the location coordinates, engine and hammer hours, depths drilled (in m or ft), number of holes drilled, oil and fuel consumption and engine and hammer incidents detected..



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Installation on drilling rigs (PocketLIM)



PocketLIM in an EPIROC cabin.



PocketLIM in a FURUKAWA cabin.



PocketLIM in a SANDVIK cabin.



CANBUS LIM interface boxes

Thanks to its technology, the **PocketLIM**, which has two CANBUS inputs, can easily be connected to the various CANBUS (CAN open) networks of the drilling machine. All the drilling rigs used by the company Nxx whether they are Epiroc, Sandvik, Furukawa, TMB use CAN BUS technology to retrieve information from the various measurement sensors present on the machine.

CAN BUS (CAN open) technology is now a standard, it is used by all drilling rigs manufacturers

Via its CANBUS interface boxes, the **PocketLIM** can thus connect to the machine's two main CANBUS networks and retrieve data from them.

- 1) CANBUS machine network, manufacturer sensors measuring GPS geolocation, drilling parameters and hammer operating data;
- 2) CANBUS engine network (J1939 protocol) which retrieves all engine information.

Via its 3G / 4G GPRS modem or its Wifi module, the **PocketLIM** can thus provide real-time information on the data coming from the various equipped drilling machines.

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Use

from	to		Machines	Devices	Faults	Operator	GPS position	Engine Speed (rpm)	Engine Hours Total	Engine oil pressure (bar)	Fuel consumption total (L)
31/05/21, 15:42			SAV	53018		SAV LIM	(45.7754135,5.0267863)		13:21:00		245.5
31/05/21, 15:42			TMB28A-04FT087000	52124		Christophe - 068990588	(47.1316071,5.5397196)				0
31/05/21, 15:42			D50A-04FT085000	52149		Sebastien - 061991003	(45.7354164,4.5190377)	1661	2328:12:00	2.76	107459.5
31/05/21, 15:41			SAV	53018	RIG_COMPR_LUB_CLOG	LIM	(45.7754478,5.0267634)	994	13:18:00	4.04	245.5
31/05/21, 15:40			T40B-04HT083000	52123		Olivier - 065983998	(45.7358742,4.5193429)	2018	2455:03:00	4.48	57915.5
31/05/21, 15:39			T40A-09HT107000	52122		Henri - 061028072	(46.1779442,1.9775017)	2116	2971:51:00	4.64	66701
31/05/21, 15:36			SAV	53018		SAV LIM	(45.7754402,5.0267553)		13:18:00		245
31/05/21, 15:35			FRD04-09HT106000	52108		Loic - 06997867€	(48.6470718,5.7112579)	1819	2806:42:00	3.28	93357
31/05/21, 15:34			FRD05-HCR1800	53003		Lim	(47.4083481,5.835537)	1200	1781:42:00	3	2684

Drill @ LIM is a web application (software in the cloud) to which the Nxx hardware manager can connect at any time in order to be able to find out about his fleet of machines. He can thus know in real time where each machine is located, who is the operator of the company Ty (indeed the latter must give his username and password to **PocketLIM** when starting the machine), and consult the various production, hammer and engine parameters. When an engine, hammer or machine fault occurs, the Nxx equipment manager is immediately informed by email notification. By consulting **Drill @ LIM**, he will immediately have information on the type and origin of the incident and will be able to remedy it if necessary.

The **Drill @ LIM** administrator, in this case, the Nxx equipment manager can share the information he wishes to share with any other manager. In this case, he shares the production information (number of drilled holes, measurements, etc.) with the production manager of Ty and the machine information with the after-sales service manager of the manufacturer of machines.

Daily and monthly, **Drill @ LIM** automatically sends, with notification to the main administrator, a complete report in Excel format summarizing all the information.

The **PocketLIM + Drill @ LIM** solution perfectly meets the expectations of the Nxx customer who wishes to manage his fleet of machines for hire in real time.

- ➔ The **PocketLIM**, thanks to its CANBUS (CAN open) compatible technology, can equip all the drilling machines in its rental fleet, whatever their brands, types and models. Nxx is not blocked by the systems of each manufacturer.
- ➔ **Drill @ LIM** makes it possible to analyze the data and information coming from all the sensors of its fleet of machines in a single centralized web application.
- ➔ Thanks to **Drill @ LIM**, Nxx manages the production and maintenance data of its machines as it sees fit. He has the choice of being able to share them with his client and is independent from the manufacturer.
- ➔ Thanks to the alerts sent to it in real time by **Drill @ LIM**, Nxx can react very quickly to prevent and resolve any technical and maintenance problem, thus saving precious time. Nxx can plan maintenance operations and overhauls (oil changes, etc.) of its machines.
- ➔ In terms of instrumentation, Nxx has a single system, the **PocketLIM**, and therefore has only one contact, **LIM** whatever the drilling machine. It is therefore LIM which alone ensures the monitoring and after-sales service. As a web application, Drill @ LIM is accessible from a smartphone.