



# SMART SITE SAFETY SYSTEM THROUGH INTEGRATED ASSET MANAGEMENT

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LIFTING GEARS AND LIFTING APPLICANTS ARE ONE OF THE COMMONLY USED ASSET IN JOBSITE, REGULAR INSPECTION BY QUALIFIED PARTY IS CRUCIAL TO AVOID ACCIDENT

## Typical Lifting Gear in jobsite



## **Form 7 for Lifting Gear cert.**

Name of owner 擁有者姓名	FORM 7 英美七	[eng 1803/06] [繁 1803/06]
Address of installation 裝置地點	Particulars and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations CHAINS, ROPES AND LIFTING GEAR CERTIFICATE OF RESULTS OF THOROUGH EXAMINATION FOR THREE MONTHS	
From authority to the Commissioner of Labour for the purpose of examination of the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations		
工業上用於起吊裝置的定期檢查證明 關於鏈索、繩索及起吊裝置 在過去六個月內的自資驗估證明書		
本表格乃由工廠及工業上用於起吊裝置的定期檢查證明書 (1803/06) 的需要而認可		
Description of chains, ropes or gear, e.g. type, size, material, date of manufacture 鏈索、繩索或起吊裝置 例如：鐵鏈、不鏽鋼鏈索等	Date of examination 驗估日期	Safe working load 安全起吊重量 (以公噸為單位)  (1) (2) (3)
Enter here any remarks required or defects If none, write "None" and then attach to this certificate 註明：如無任何問題，請在此處寫上「None」，並附上此證明書		
Signature of Registered Professional Engineer 註冊工程師簽名 Qualification 資格 Designation 職稱		
Any responsible or responsible person who failure to answer a certificate or make a report which in his knowledge false or is a material omission shall be guilty of an offence and liable to a fine of \$1,000 and/or imprisonment for 2 years. 任何對證明書或報告不誠實或有重要遺漏的責任人，則應受罰款\$1,000元或監禁二年。如係故意虛偽，則應受二十元罰款。		
UAC/PT		

Biannually inspection for lifting gear is essential to ensure up-to-standard quality of lifting gear to avoid failure when loading

## CHALLENGES IN MANAGING THE LIFTING GEARS WITH TRADITIONAL METHOD

## Managing thousands of physically LG

**Challenges:** Multiple excels to manage the data base of LALG information, including purchasing, location assignment and certificate management

**Impact:** misaligned information from different excel, causing missed certificates for existing LALGs

Serial Number	Category	Model	Brand	Processor	Processor ID	Processor Type	Processor Manufacturer	Processor Speed
1	Processor - Main	Core i9-13900K	Intel	Intel Core i9-13900K	0001-00000000000000000000000000000000	Processor	Intel	5.8 GHz
2	Processor - Graphics	RTX 4090	NVIDIA	NVIDIA RTX 4090	0002-00000000000000000000000000000000	Processor	NVIDIA	24000 MHz
3	Processor - RAM	16GB DDR5	Corsair	Corsair Vengeance LPX DDR5 16GB	0003-00000000000000000000000000000000	Processor	Corsair	4800 MHz
4	Processor - Storage	SSD 1TB	Western Digital	Western Digital WD Blue SN750 NVMe 1TB	0004-00000000000000000000000000000000	Processor	Western Digital	3500 MB/s
5	Processor - RAM	16GB DDR5	Corsair	Corsair Vengeance LPX DDR5 16GB	0005-00000000000000000000000000000000	Processor	Corsair	4800 MHz
6	Processor - Storage	SSD 1TB	Western Digital	Western Digital WD Blue SN750 NVMe 1TB	0006-00000000000000000000000000000000	Processor	Western Digital	3500 MB/s
7	Processor - RAM	16GB DDR5	Corsair	Corsair Vengeance LPX DDR5 16GB	0007-00000000000000000000000000000000	Processor	Corsair	4800 MHz
8	Processor - Storage	SSD 1TB	Western Digital	Western Digital WD Blue SN750 NVMe 1TB	0008-00000000000000000000000000000000	Processor	Western Digital	3500 MB/s
9	Processor - RAM	16GB DDR5	Corsair	Corsair Vengeance LPX DDR5 16GB	0009-00000000000000000000000000000000	Processor	Corsair	4800 MHz
10	Processor - Storage	SSD 1TB	Western Digital	Western Digital WD Blue SN750 NVMe 1TB	0010-00000000000000000000000000000000	Processor	Western Digital	3500 MB/s



*And many other excels...*

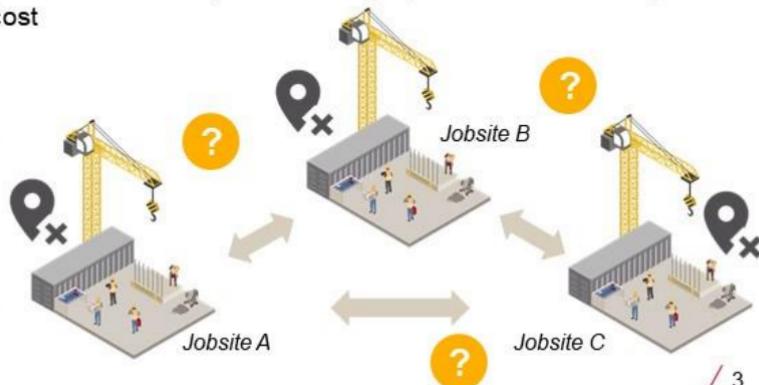
## Excel 1

Plant and L4 Summary													
Type	Current Customer	Next Period No	Customer	Next Period's shipment date	Mode	Serial No.	Customer's ship date	First 2 Shipped	Expiry Date	First 3 Shipped	Expiry Date	First 4 Shipped	Expiry Date
BRSL	CG0001	01-05-20	LUMINAR	2023-05-01	LSH001	101025	-	SAI	29-Feb-23	SAI	29-Feb-23	SAI	29-Feb-23
BRSL	CG0002	02-05-20	LUMINAR	2023-05-02	LSH001	101042	-	SAI	04-Mar-23	SAI	04-Mar-23	SAI	04-Mar-23
BRSL	CG0003	03-05-20	LUMINAR	2023-05-03	LSH001	101041	-	SAI	10-Mar-23	SAI	10-Mar-23	SAI	10-Mar-23
BRSL	CG0004	04-05-20	KOBLENZ	2023-05-04	LSH001	J001-000285	-	SAI	17-Mar-23	SAI	17-Mar-23	SAI	17-Mar-23
BRSL	CG0005	05-05-20	LUMINAR	2023-05-05	LSH001	101015	-	SAI	22-Mar-23	SAI	22-Mar-23	SAI	22-Mar-23

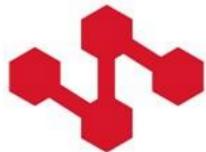
## Identifying the real time location of expired LG

**Challenges:** Unable to locate the exact location of expired LG, as LG can move around different jobsite and LG of same model looks identical. Workers fail to transfer asset in the system to report last updated jobsite of the LALG

**Impact:** The location of LALG can be wrong in report. Contractors might have to inspect all LG of the same model at the same time even just a few LG are expired. Causing high labour cost and inspection cost



# UTILISE SSSS SOLUTION (ON!TRACK SOLUTION) TO MANAGE LALG DIGITALLY TO OVERCOME CHALLENGES



ON!Track



Proactive Tracking with Smart Tag Solution



Smart Site Safety System through integrated asset management

Smart tagged LALG asset



Install gateway in LA



Training to key stakeholders



# UTILISE SSSS SOLUTION (ON!TRACK SOLUTION) TO MANAGE LALG DIGITALLY TO OVERCOME CHALLENGES



ON!Track

## One stop platform



## Real time location tracking



## Service alert and management



- ✓ Cloud based server to manage all LALG in one platform.
- ✓ Real time update and aligned information
- ✓ Real time tracking of geolocation of LALG
- ✓ No manual management of LALG location required, minimize human error from data input
- ✓ Use mobile to track the exact location of LALG to search expired asset in jobsite

- ✓ Service alert will be sent to user in apps / by email when certificate is going to expired / already expired
- ✓ Stored all historic certificates in apps / webpage for future reference and inspection

# HILTI ON!TRACK IS IN CITF PRE-APPROVED LIST UNDER SSSS IN CATEGORY 2



The image shows the front cover of the CITF DIGEST magazine for March 2023, Issue 15. The cover features a green and blue geometric logo for 'CITF DIGEST'. At the top, it says 'HILTI ON!TRACK IS IN CITF PRE-APPROVED LIST UNDER SSSS IN CATEGORY 2'. Below that is the CITF logo with the text '建造業 制造香港 WE INNOVATE, WE BUILD'. The main headline on the cover is '安全智慧工地系統 Smart Site Safety System'. It highlights that over 50 pre-approved SSSS products are available for selection. A large graphic shows a construction site with various safety icons like a hard hat, a wrench, and a shield. A button on the right says 'APPLY NOW 立即申請'.

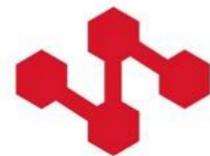
## PA19-025 | ON!Track

此產品是一個專為建造業而設的數碼化資產  
管理解決方案，有關資產資料透過網站和手  
機應用程式存取在雲端上。

用戶可以在資產上附加耐用的二維條碼/二  
維碼作識別用途，並通過掃描來查閱資料，  
資料包括圖片、文件、位置、採購資訊、保  
養到期日及預定服務。

ON!track is a digitalised asset management solution designed for construction industry. It uses cloud-based server for information storage and can be retrieved or updated with two interfaces which are web portal and mobile app.

User can attach a robust 2-D barcode/QR code on the asset for unique identification purpose and the information can be retrieved by scanning. Asset information includes pictures, documents, locations, purchase information, warranty expiration dates and scheduled services.



## ON!Track

### 安全智慧工地系統10個主要類別 10 Main Categories of SSSS Products :

1 中央管理平台 Centralised Management Platform	6 天秤吊運區域的不安全行為/危險情況警報 Unsafe acts / dangerous situation alert for tower crane lifting zone
2 數碼化追蹤系統 (工地機械, 電動工具及梯架) Digitised tracking system for site plants, powered tools and ladders	7 前線工人智能監控設備 Smart monitoring devices for workers and frontline site personnel
3 數碼化工作許可系統 (高風險工作) Digitalised permit-to-work system for high risk activities	8 人工智能安全監督系統 Safety Monitoring System using Artificial Intelligence
4 危險區域進出管制 (電子鎖系統) Hazardous areas access control by electronic lock and key system	9 窪閉空間監控系統 Confined Space Monitoring System
5 運動設備操作區域的不安全行為/危險情況警報 Unsafe acts / dangerous situation alert for mobile plant operation danger zone	10 虛擬實境安全培訓 Safety Training with Virtual Reality Technology



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類別  
Cat. 2

Hilti (Hong Kong)  
Limited



Smart Site Safety System through integrated asset management

This is a clip from the 31 July 2024 recording of the  
Hong Kong Housing Authority  
"Safety Forum 2024 for Works and Property Management Services"

The speaker on stage is Mr Ivan Sou  
Head of Tool Services Marketing, Hilti (Hong Kong) Limited  
His topic is

"Smart Site Safety System Through Integrated Asset Management"

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(00:27)

Hello everyone, I am Ivan Sou from Hilti  
Today I will share  
how software technology can help improve site safety  
I believe everyone's first impression of Hilti  
is electric tools or anchor bolts  
However, we have also done a lot in software development  
Let me start by sharing some background about the company  
We have developed software for asset management  
On many common construction sites  
there are often numerous identical lifting gears  
sometimes over a thousand of lifting gears  
For example, chain slings that all look the same

As mentioned earlier  
Some accidents are caused by falling objects from heights  
often due to worn chains  
When they become damaged, it can lead to failures  
Therefore, filling out Form 7 regularly  
ensure they still meet the safety standards for use

However, using traditional methods on-site

presents significant challenges

I have also discussed with peers in the industry

and they usually manage these lifting gears

through spreadsheets for tracking and record-keeping

However, different sites use various spreadsheet formats

often resulting in one site having ten different spreadsheets

If one spreadsheet is updated

the others may not be linked

leading to a lack of synchronisation across the board

I believe the biggest challenge is the second point

which is the lifting gears look identical

and are often used across different sites

or in various locations on-site

After six months, when it is time for inspection

it becomes nearly impossible to locate a specific gear

It is because their positions are unknown

as all the lifting gears look exactly the same

I have discussed this with others in the industry

and they also struggle to locate specific lifting gears

To proceed the checking

they have to inspect every lifting gear on site

to ensure that all certificates are up to date

which is very time consuming

Hilti's solution

is to implement a tracking system

that uses smart labels on the lifting gears and installs network connectors on heavy machinery

This enables the system to report the lifting gears' locations

We also install network connectors on heavy machinery

to cover the entire site

and we train the key stakeholders

especially the safety officers

because we hope most of the work can be handled from the office

The fewer frontline workers involved, the better

Full automation is ideal

The result is that

we can manage everything within a single platform

allowing for real-time monitoring of these lifting gears

The system provides

the exact global positioning of each gear

When maintenance is required

it sends an alert to the system

Through the central platform

the client will be informed about which lifting gears need maintenance service

With a quick check, you will know which site it is on

and roughly which crane it is near

Then you can take appropriate action

Lastly, this "ON!Track" system

is a software approved under the Construction Innovation and Technology Fund

So if anyone wants

to apply this software to private projects

They can apply for funding through the Construction Innovation and Technology Fund platform

That is all for my sharing today

If you want to learn more

please visit our booth in the exhibition hall

Thank you

Thank you for watching

(03:58)