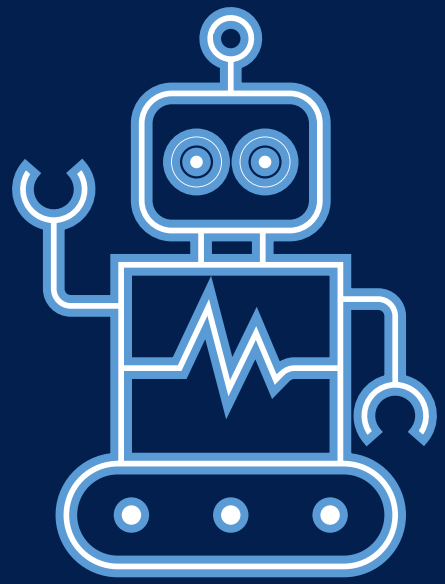
Automate for an excellent service …delivered by your contractors!



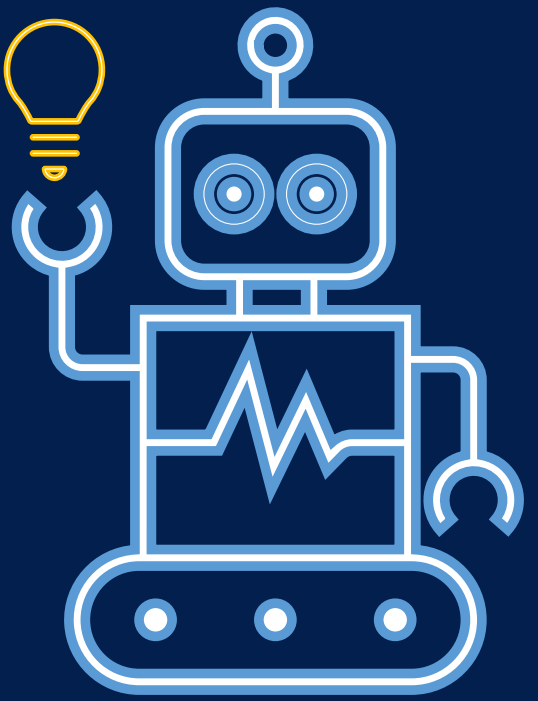
Site and Civil Engineering Department
Technical Seminar

CERN, 1st July 2024

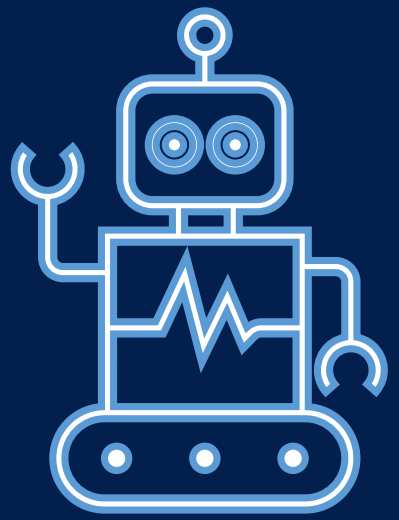
SCE
Site and Civil Engineering

Agenda

- **Introduction**
  Gyorgy BALAZS (SCE-SMS)
- **Managing network field support using only ServiceNow**
  Daniele POMPONI (IT-CS)
- **Integrated process across systems for Electrical&HVAC interventions** Andrea FERRUS PICO, Guillaume ROUGE (SCE-SAM-IN)
- **Building components of accelerators using a well orchestrated workflow** Wim WETERINGS (SY-AR)
- **(New!) ServiceNow + InforLN to manage external jobs and billing efficiently** David MOLINER REYERO (SCE-SMS)
- **Q & A**



Managing network field support using only ServiceNow



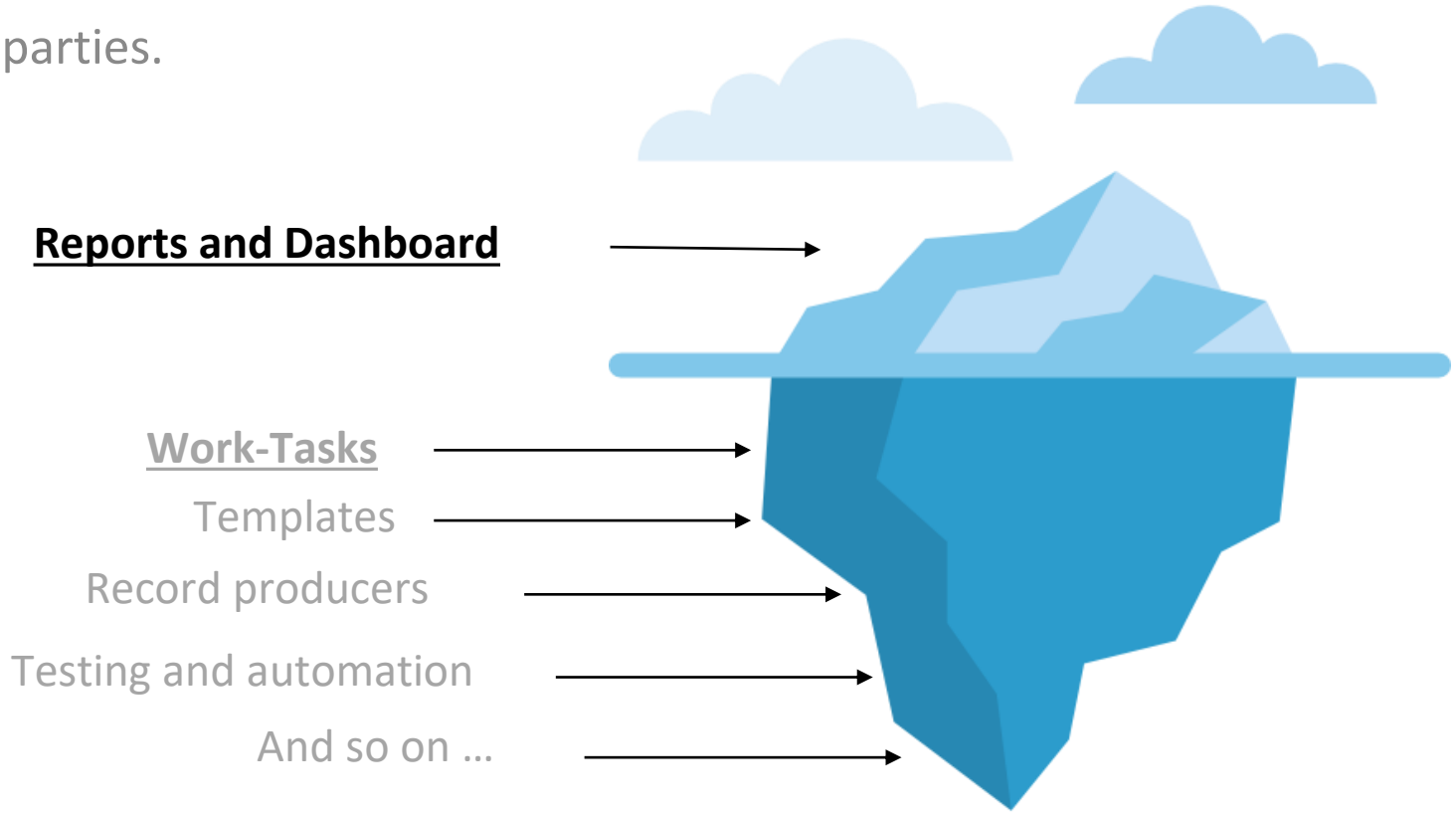
Daniele POMPONI (IT-CS)
01-07-2024

ServiceNow Work-Tasks Reports and Dashboard

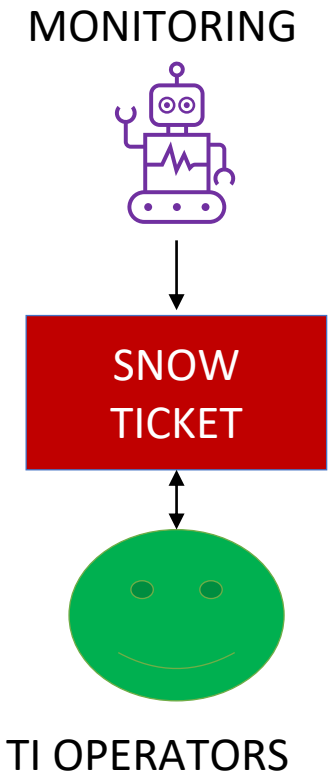
More granularity on the tasks carried out by the contractor.
Easy and transparent billing life-cycle for both parties.

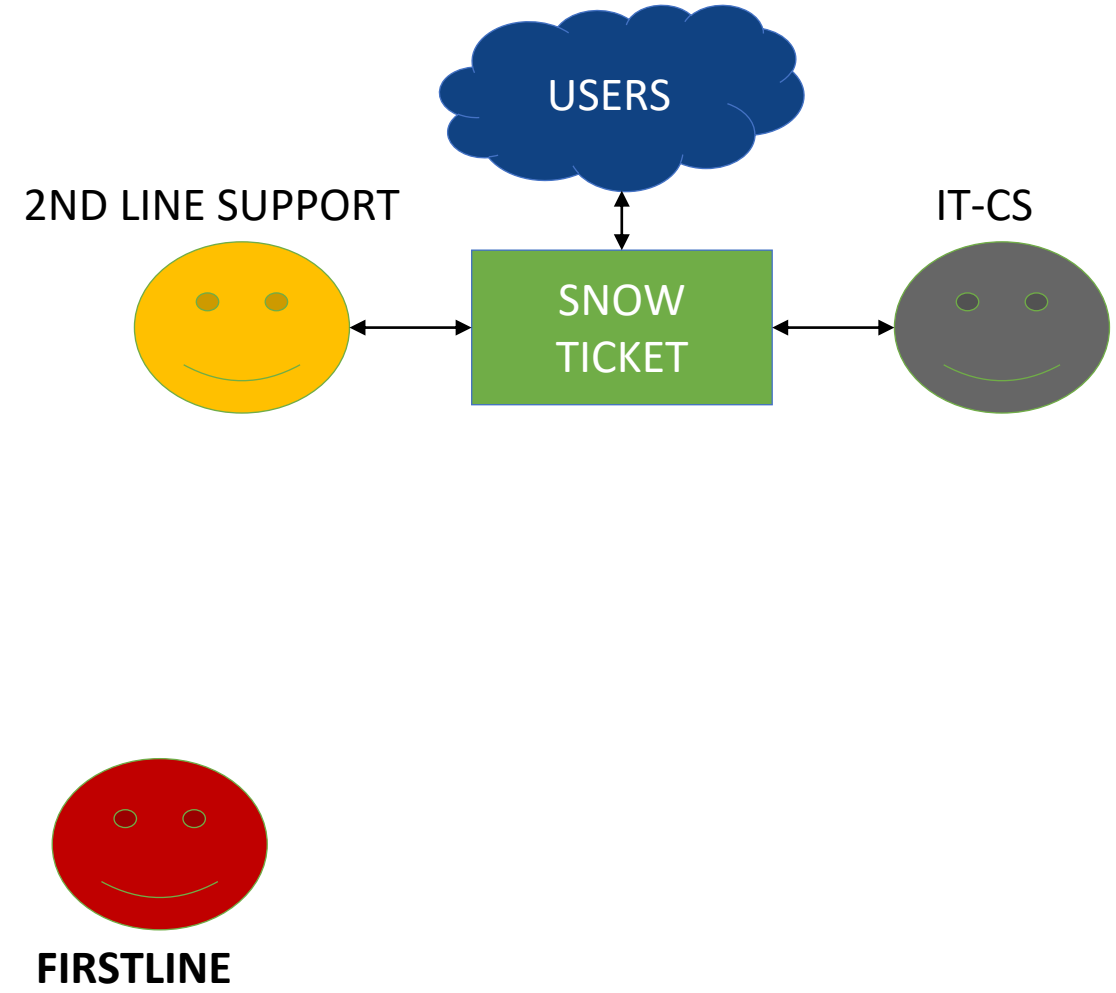
Firstline contract background:

- Based on standard tasks
- A team of 12 technicians
- Installation and maintenance of network and telephony equipment at CERN
- 24/7 support for critical IP and telephony networks

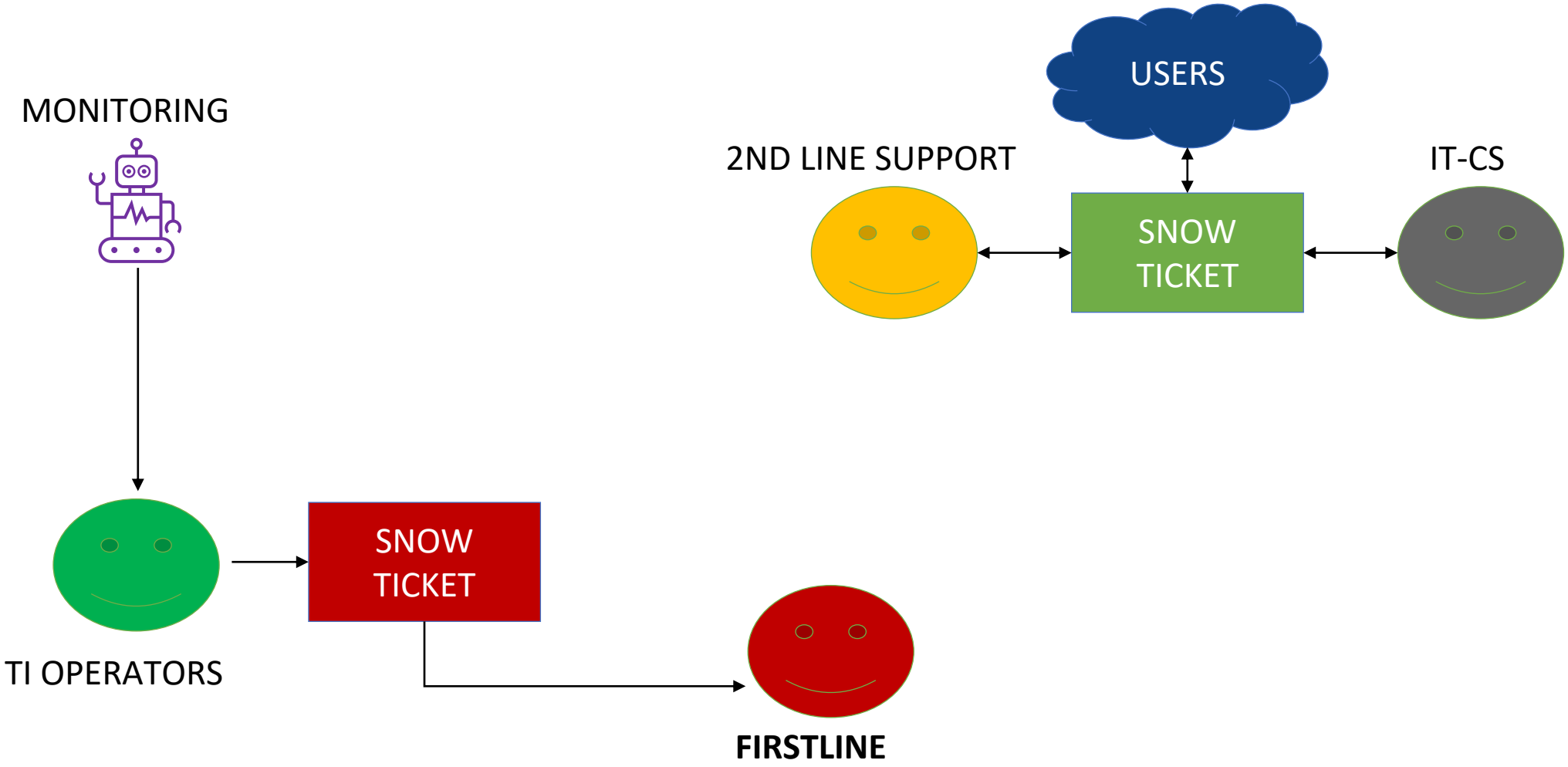


How the Firstline interacts with ServiceNow

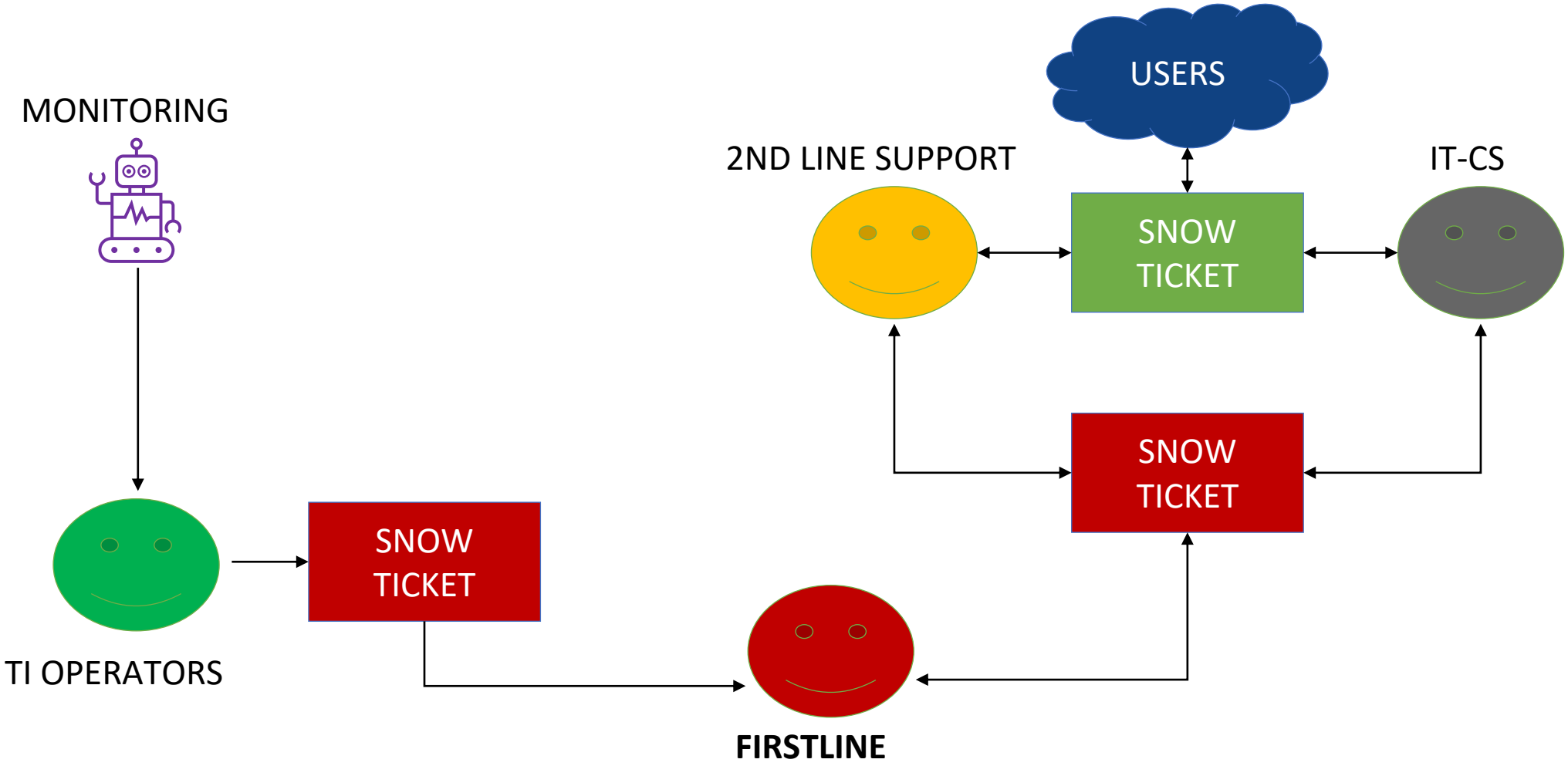




How the Firstline interacts with ServiceNow

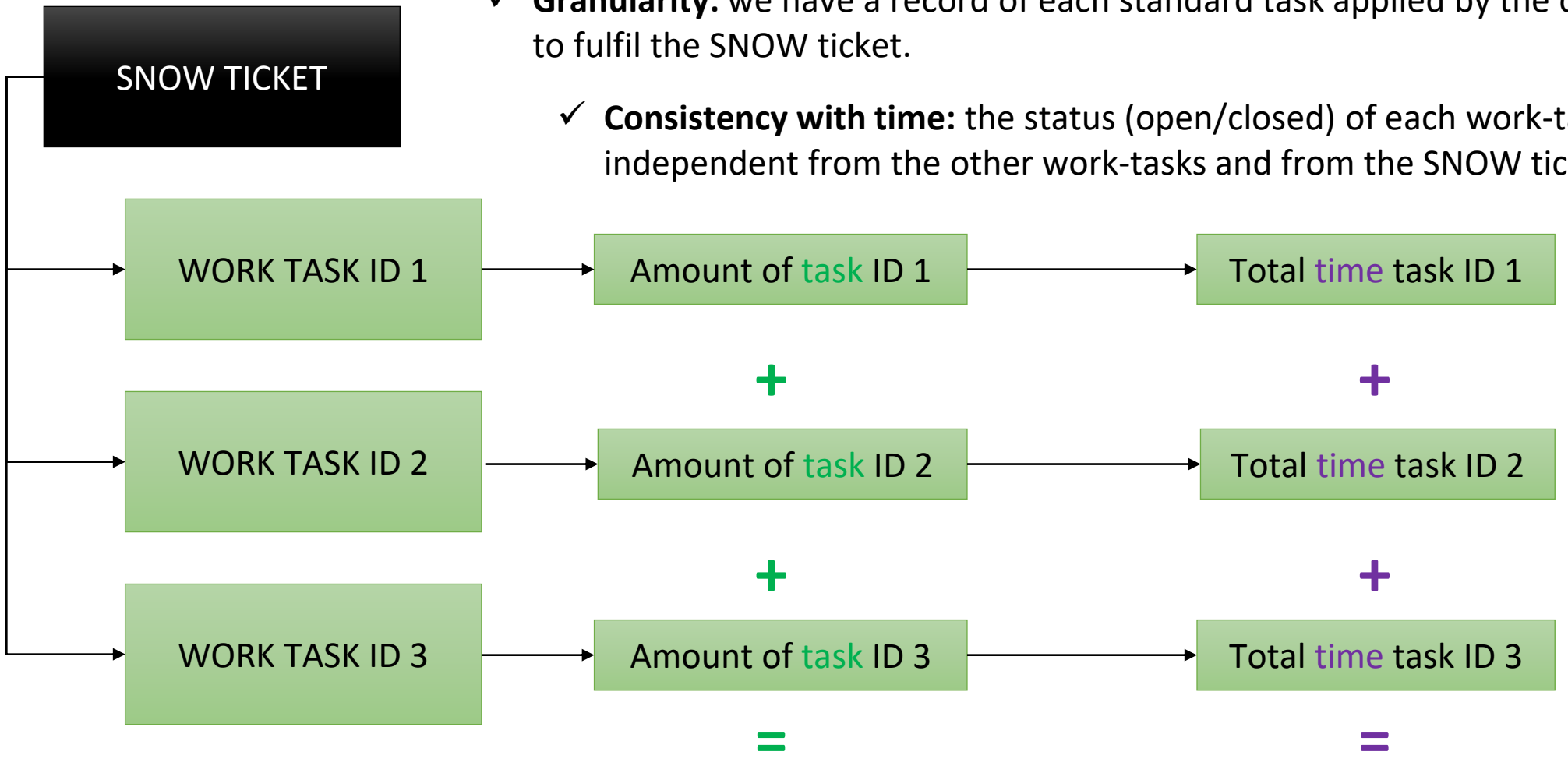


How the Firstline interacts with ServiceNow



Why Service-Now Work-Tasks?

- ✓ **Granularity:** we have a record of each standard task applied by the contractor to fulfil the SNOW ticket.
- ✓ **Consistency with time:** the status (open/closed) of each work-task it is independent from the other work-tasks and from the SNOW ticket itself.



- ✓ **Transparency:** total task / time claimed by the contractor to fulfil the SNOW Ticket

Real example: SNOW request to install, cable, configure and label 7 network switches in the computer centre.

Task SLAs (1) | Work Tasks (4) | Detail Requests

Work Tasks — Search: for text — Search — 1 to 4 of 4

Parent Task = RQF2278676 **1**

Number **2**	Functional Category **3**	Short Description	Assignment group	Assigned to	State **4**	Amount **5**	Actual duration **6**	Exclude from statistics **7**
WT0903135	N10	Network equipment, outlets or fibres relabelling	IT/CS Technicians 3rd Line Support	Mattia Ponziani	Closed Complete	1	1 Hour	false
WT0903134	N4	Creation or removal of fibre optic links (without intermediate connections)	IT/CS Technicians 3rd Line Support	Mattia Ponziani	Closed Complete	7	8 Hours 45 Minutes	false
WT0903133	N5	Creation or removal of fibre optic links (with intermediate connections)	IT/CS Technicians 3rd Line Support	Mattia Ponziani	Closed Complete	1	2 Hours 15 Minutes	false
WT0903131	N18	Installation or replacement of up to 5 network equipment	IT/CS Technicians 3rd Line Support	Mattia Ponziani	Closed Complete	2	10 Hours	false
						Sum	22 Hours	

1 RQF2278676: main SNOW

2 Work-task for each different standard task applied to fulfil SNOW request

3 Standard-task defined in the contract S268

4 Standalone state (open/closed) for each work-task linked to the parent ticket

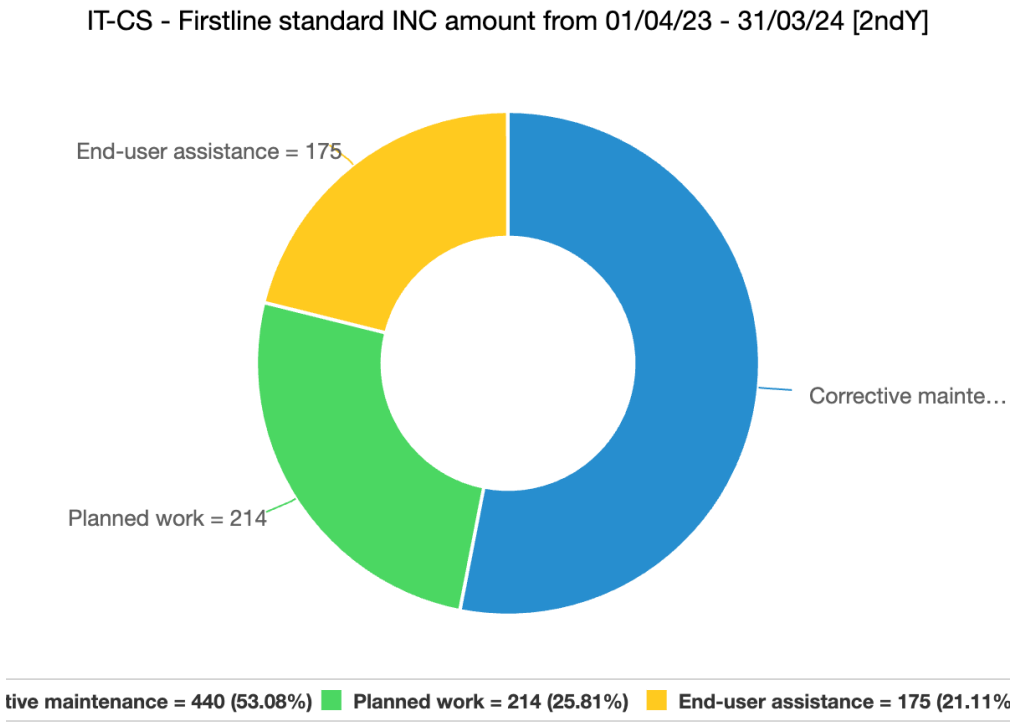
5 Amount of time that a given standard task has been applied

6 Time of the corresponding standard-task defined in the contract S268, multiplied by the amount of time that the given task has been applied to fulfil the request

7 Excluded from statistics flag used in case of human mistake during the creation of WT: allowed only to FE functional managers

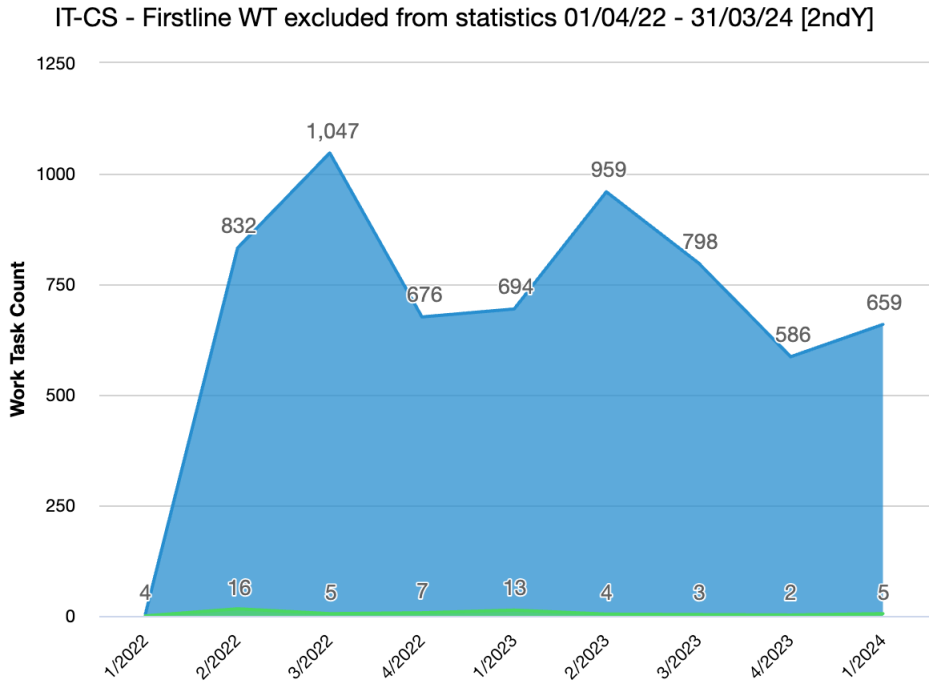
Work-task automation and data validation

✓ The creation of work-tasks can be automated for tickets generated through a record producer.



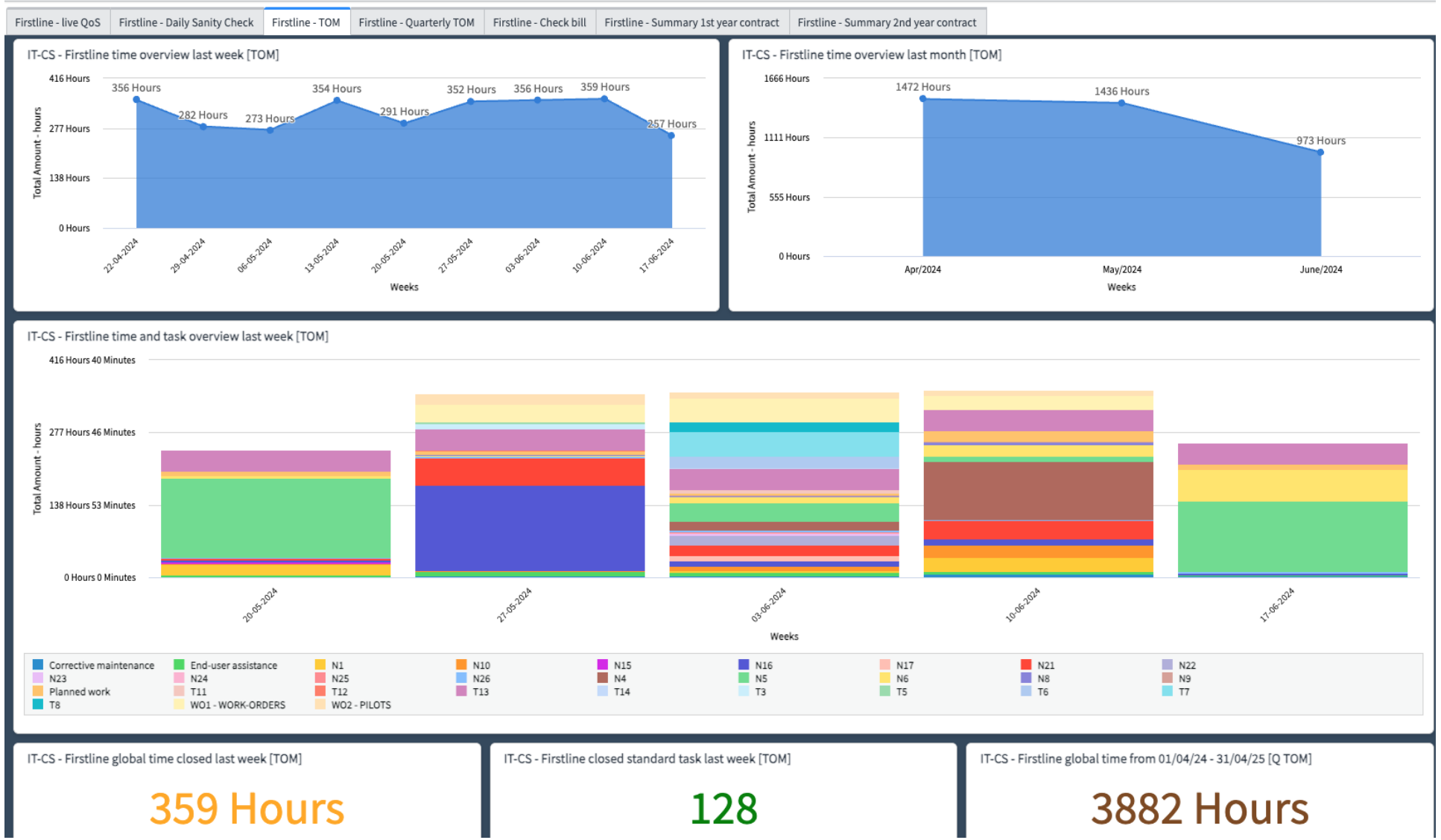
✓ During the second year of contract S268, thanks to this automation **830 WORK-TASKS have been generated automatically** without additional administrative clicks on the contractor side.

✓ Work-tasks can be easily inspected with reports acting as sanity checks.

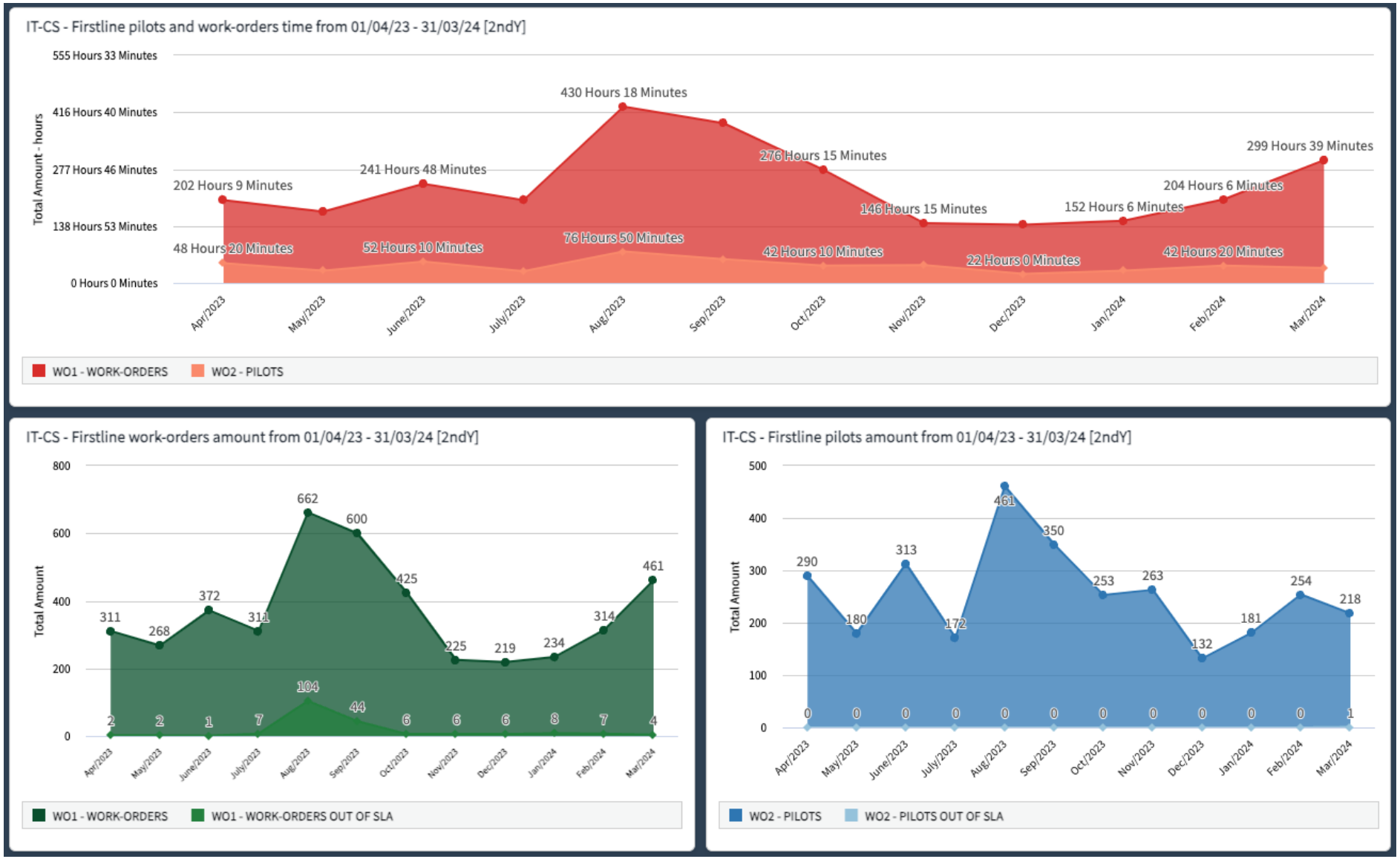


✓ During the first year of contract S268, **only 41 WTs out of 3293** have been flagged as “exclude from statistics” (1.25%) – last year **only 14 WTs out of 3017** (0.46%)

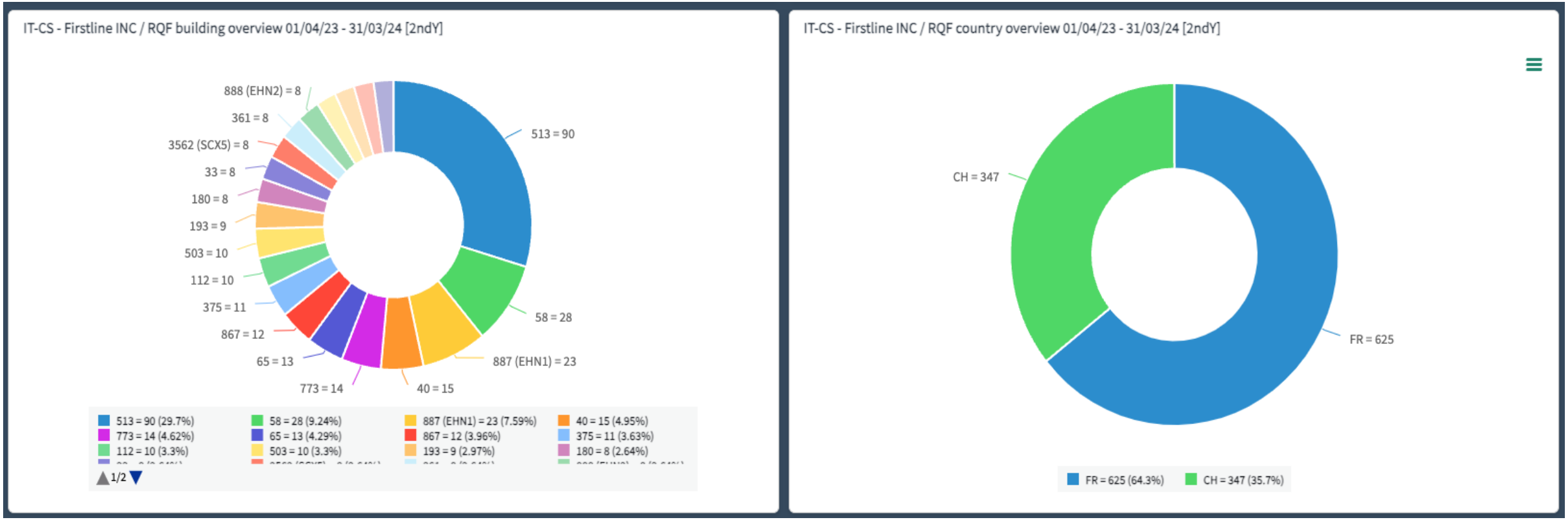
Overall view thanks to ServiceNow Dashboards



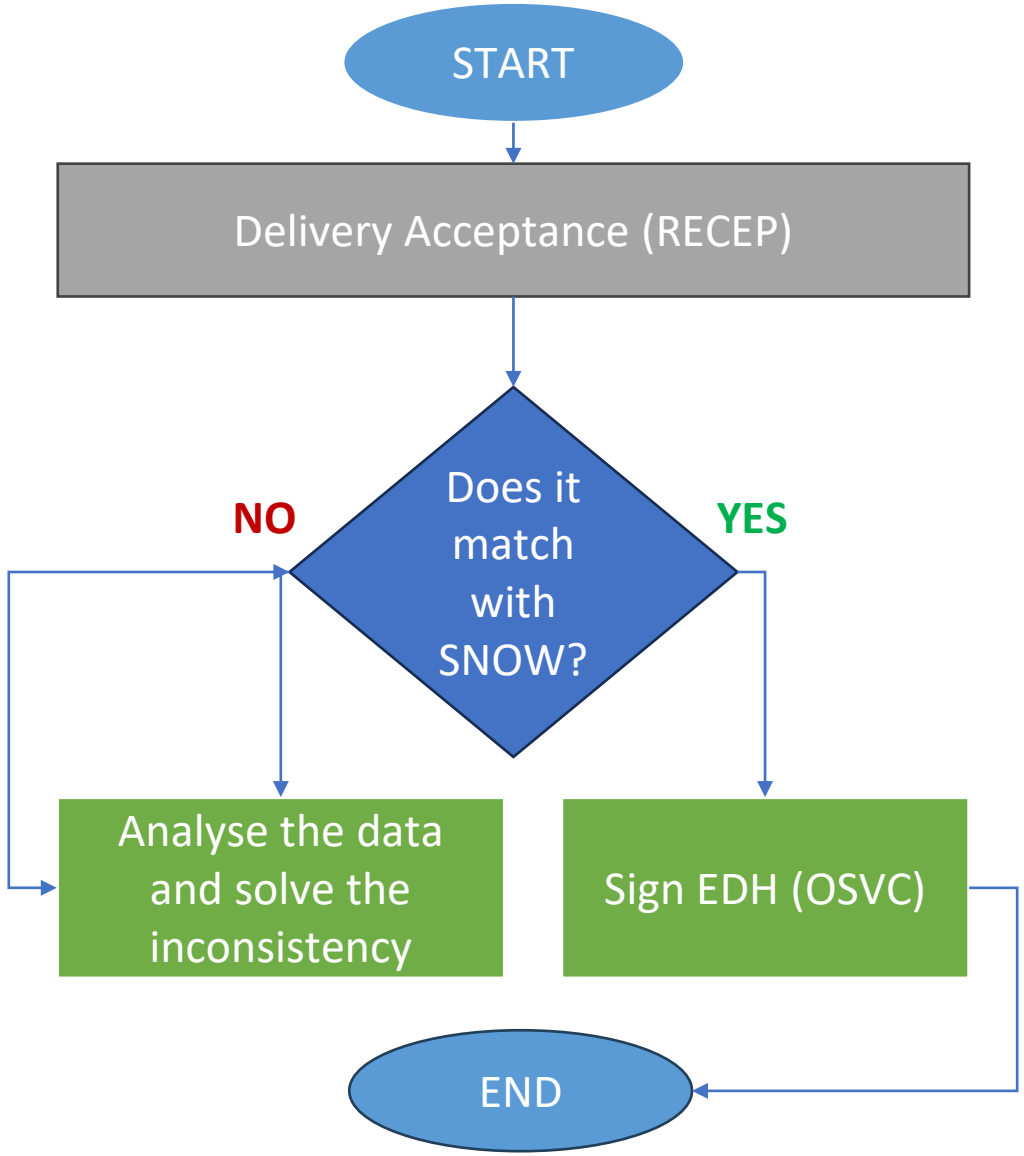
Statistics about connection requests:



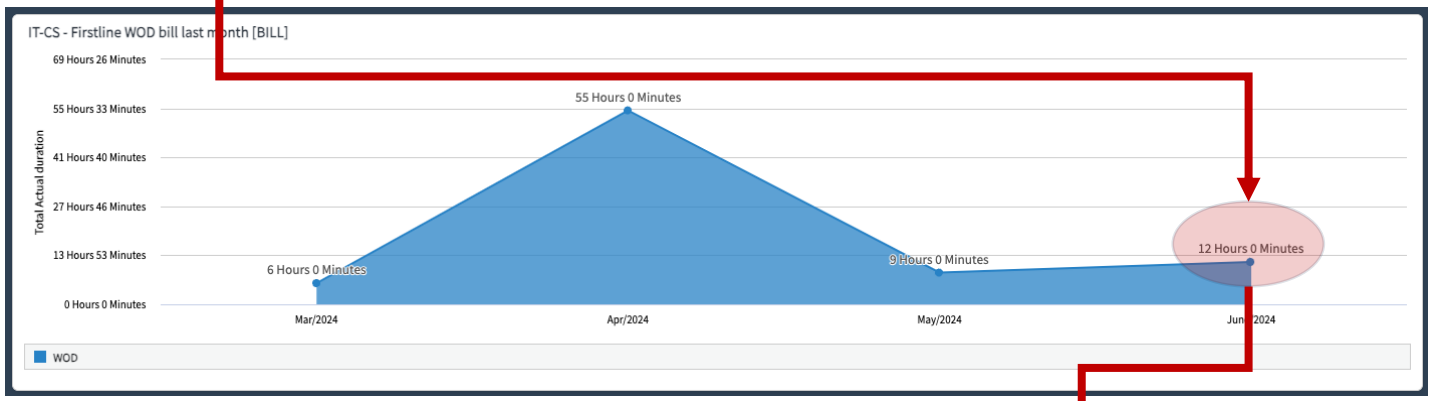
Statistics about locations:



Easy and transparent billing life-cycle for both parties



Monthly bill sent by the contractor claiming for a certain amount of money justified by 12 hours.



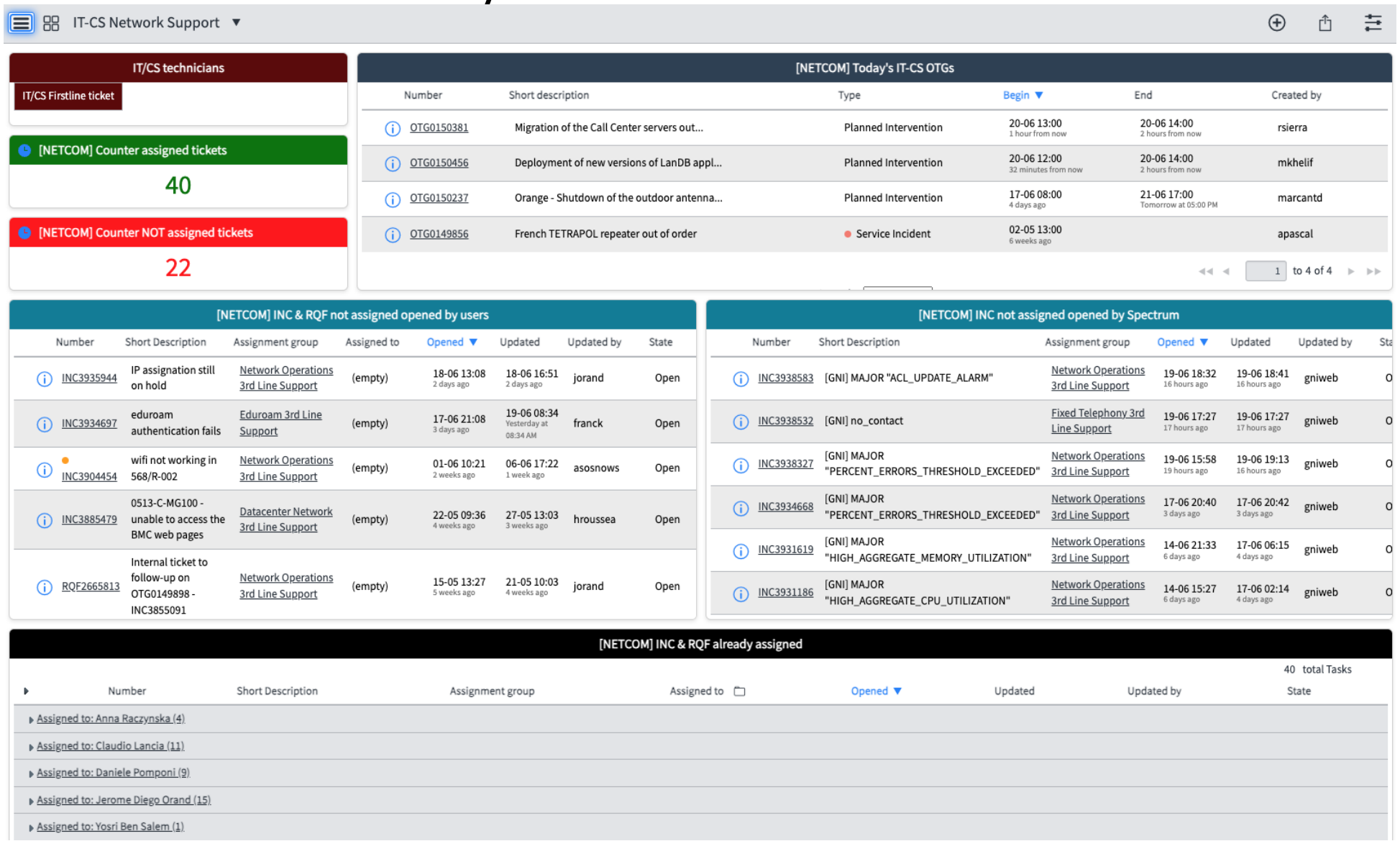
Number	Parent Task	Assigned to	State	Short Description	Actual duration	Exclude from statistics
Search	Search	Search	=Closed Complete	Search	Search	!=true
WT1054430	RQF2706638	Eva Trabal Masnou	Closed Complete	Work on demand - activity not covered by standard tasks	1 Hour	false
WT1052655	RQF2695740	Jerome Grospelly	Closed Complete	Work on demand - activity not covered by standard tasks	1 Hour	false
WT1052652	RQF2684390	Jerome Grospelly	Closed Complete	Work on demand - activity not covered by standard tasks	1 Hour	false
WT1049996	RQF2692023	Jose David Areosa Naya	Closed Complete	Work on demand - activity not covered by standard tasks	2 Hours	false
WT1049631	RQF2624339	Eduardo Tarrio Santiago	Closed Complete	Work on demand - activity not covered by standard tasks	4 Hours	false
WT1049628	RQF2690521	Eduardo Tarrio Santiago	Closed Complete	Work on demand - activity not covered by standard tasks	2 Hours	false
WT1048781	RQF2690095	Eva Trabal Masnou	Closed Complete	Work on demand - activity not covered by standard tasks	1 Hour	false

= 12

Our opinion after two years

- ✓ Work-tasks have proven to be a perfect solution to have the right granularity where a ticket requires multiple tasks to be fulfilled, and the administrative part remains easily manageable.
- ✓ Dashboards are user-friendly: easy to build and maintain. With a solid base of data present in SNOW we can keep everything under control efficiently.
- ✓ Dashboards have proven to be an added value for both parties: our group and the contractor. This tool is used daily as a single source of truth to constantly monitor activities and performance from both users (QoS) and contractual point of view (SLAs and Billing life-cycle).
- ✓ We strongly believe that this type of contract management approach will also have a positive impact when defining the requirements for future contractor tenders. We will be able to make predictions on the type of tasks more precisely and consequently optimize costs and management.

Dashboards: not only to monitor contractors!



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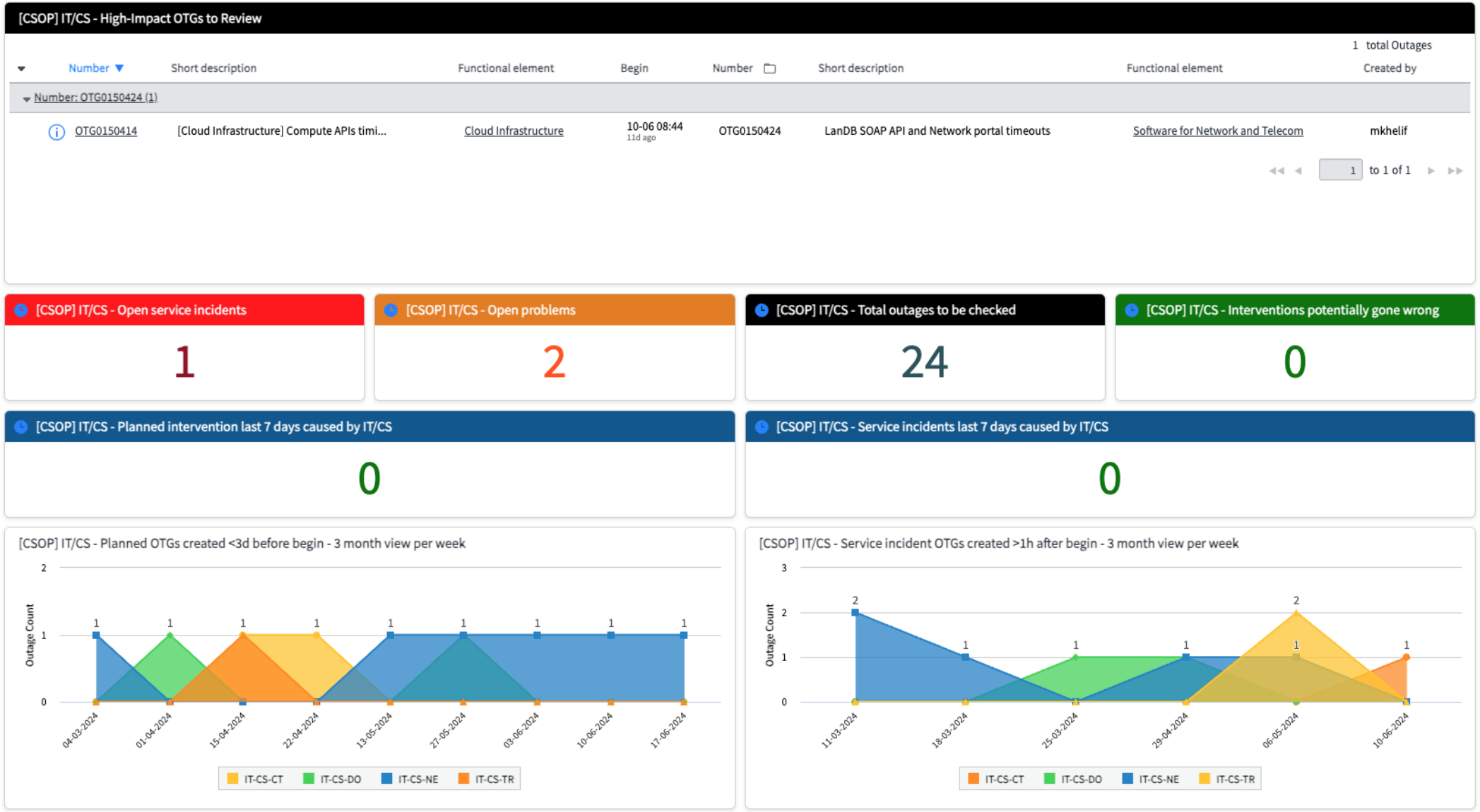
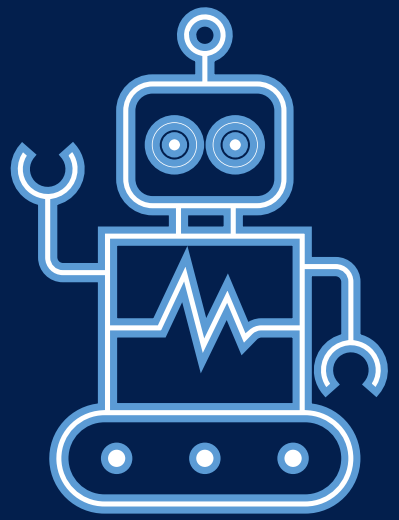


Thanks for your attention!

Thanks to:
G. Blazas (SCE-SMS)
N. Kane (IT-TD-SM)
F. Trevisani (IT-TD-SM)

Integrated process across systems for Electrical & HVAC interventions



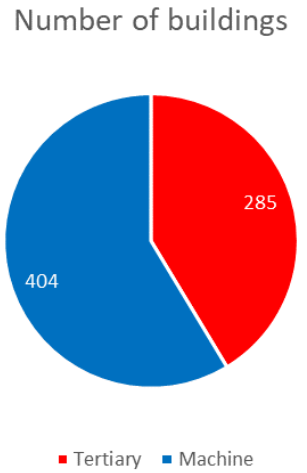
Guillaume Fernand Rouge (SCE-SAM-IN), Andrea Ferrus Pico (SCE-SAM-IN)

01/07/2024

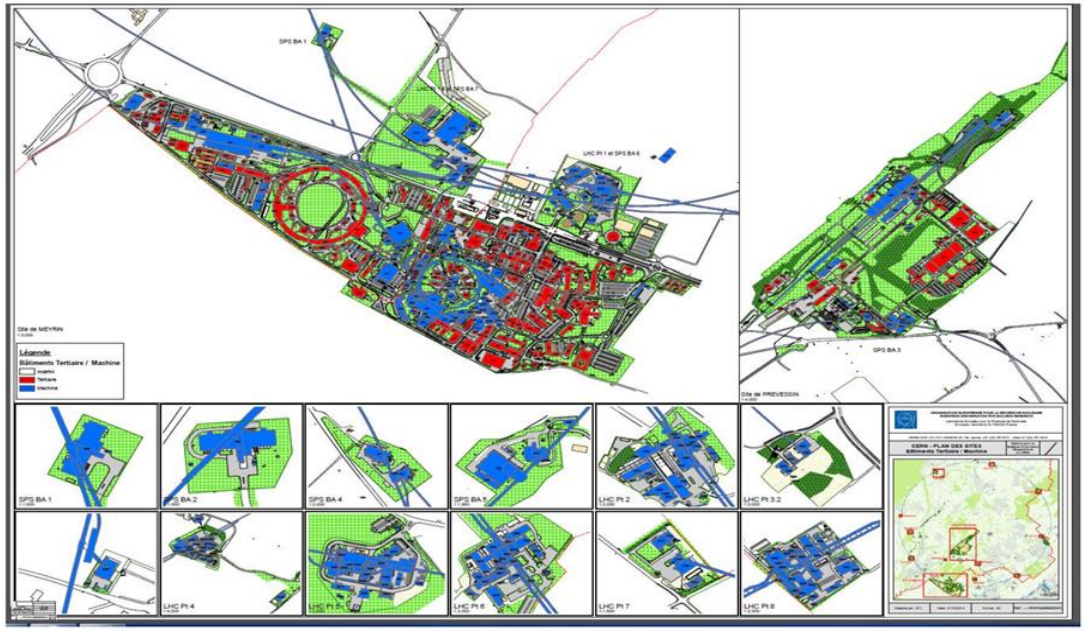
Mandate

SCE-SAM-IN section is in charge of the **design**, **specification**, **tendering**, **works follow up**, **tests**, **acceptance**, **operation**, **and maintenance,** in the following fields:

- **HVAC** (Heating, Ventilation, Cooling, air conditioning, specific extraction)
- **Fluids** (water cooling, compressed air, gas, fire fighting, filling)
- **Electricity** (power distribution, lighting, machine powering)
- **Sanitary** (drinking water, domestic water, solar panels, water fountains, safety)



For CERN «**tertiary**» buildings



HVAC, SANITARY & ELECTRICAL Domains

- Heating plants, district heating and heating circuits,
- Chilled water productions and a/c units,
- Ventilation systems,
- Compressed air distribution,
- Hot domestic water production,
- Water distribution, sanitary devices, solar panels,
- Electrical power and control boards and plcs,
- Indoor lighting and public lighting,
- Electrical power systems and sockets.

350 structures and baraques,

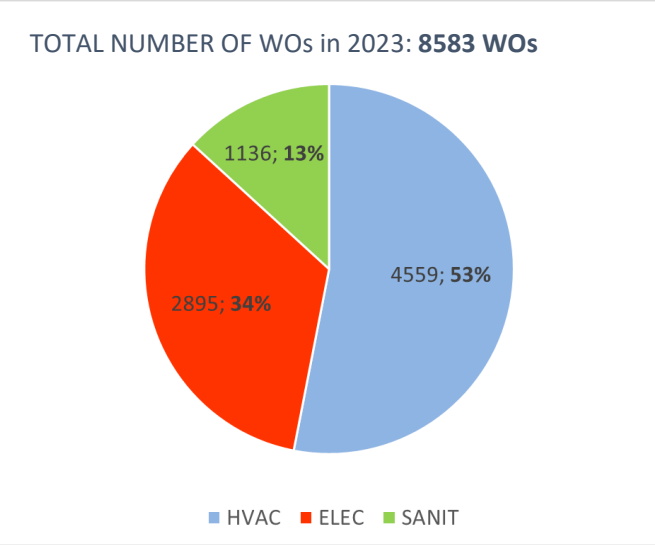
1 children school, 3 restaurants, 3 hotels (495 rooms) 150 meeting & conference rooms
100 workshops, 400 labs
30 clean rooms, 20 RP areas and source labs.

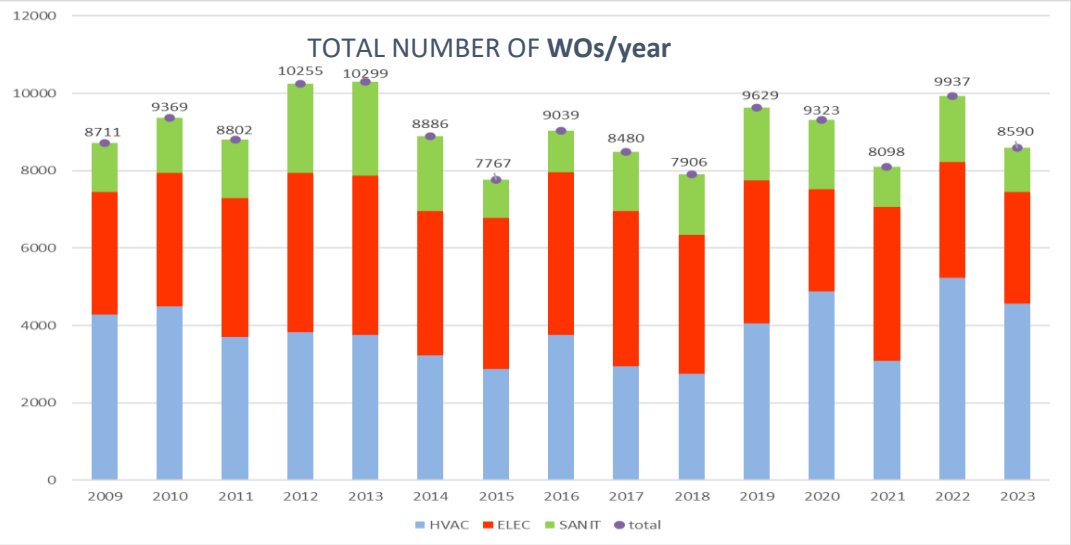
2 heating plants, 6 boilers.
27 km district heating.

100 heating sub-stations
200 domestic hot water productions

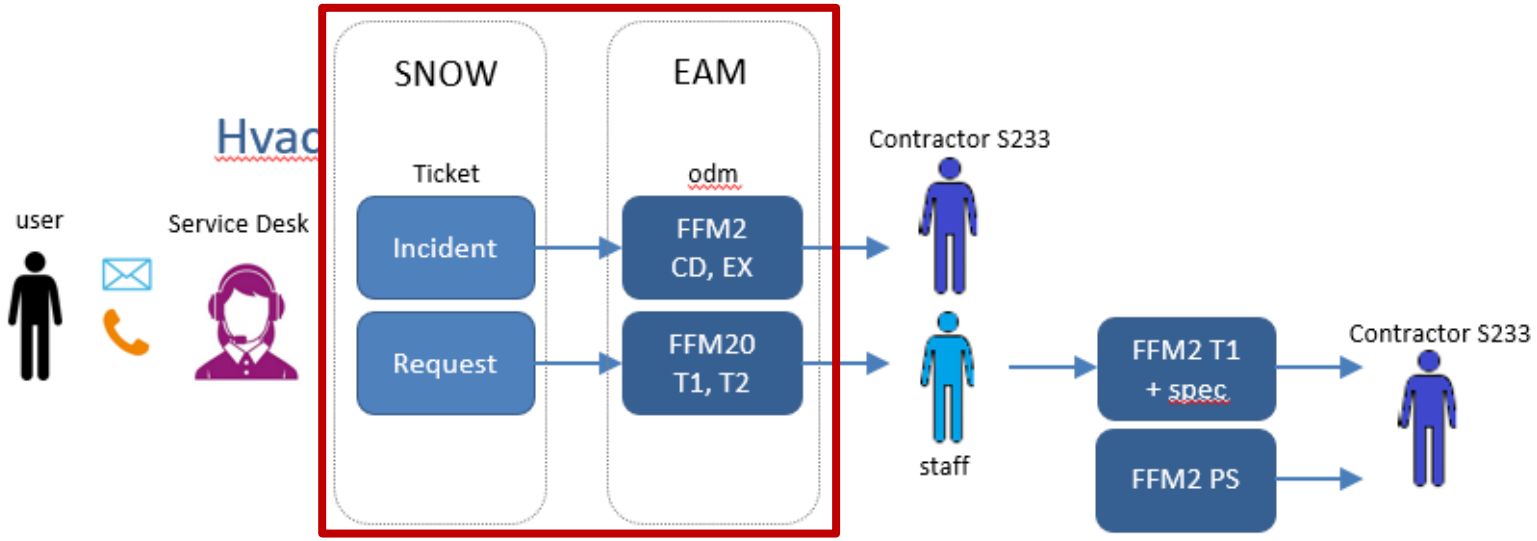
100 000 lighting points
500 AHUs, 350 extraction fans
70 chillers, 500 split systems
1000 electric boards.

Service: number of ODMs (<> tickets)

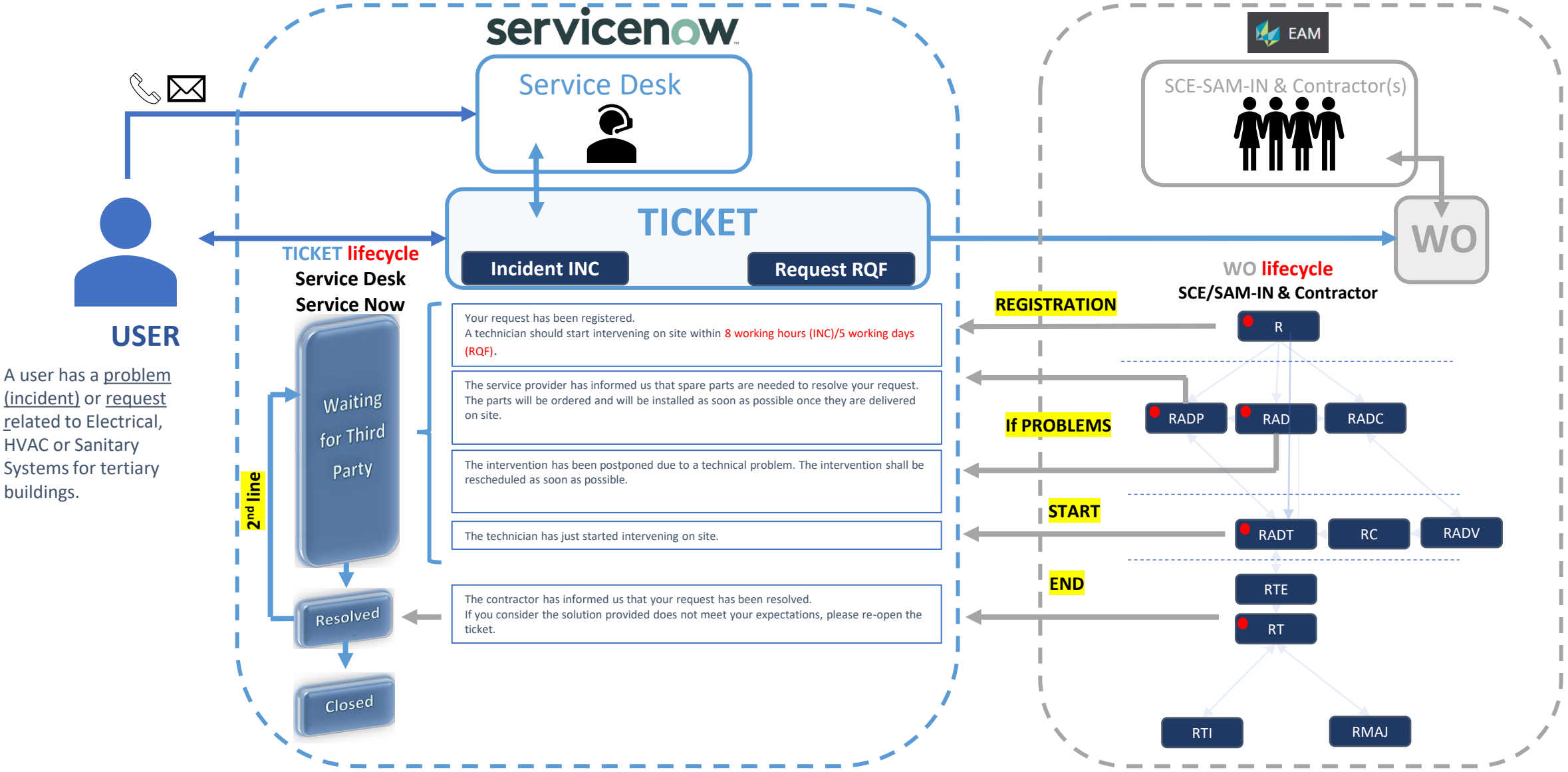




- Incidents
- Request
- Preventive maintenance
- Works and modifications
- Consolidation
- Projects, new buildings



Workflow tickets and WOs with automated messages



Pros, Cons and their future actions

Improved responsiveness and keep fluent communication with the requester.

Reduction in communication errors.

Traceability.

Complex process.

ACTION

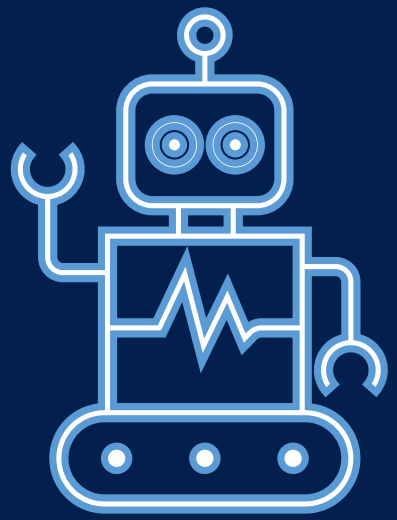
Documentation, revision and process maintenance.

Loss of visibility in the second line.

ACTION

To improve the 2nd line management process.

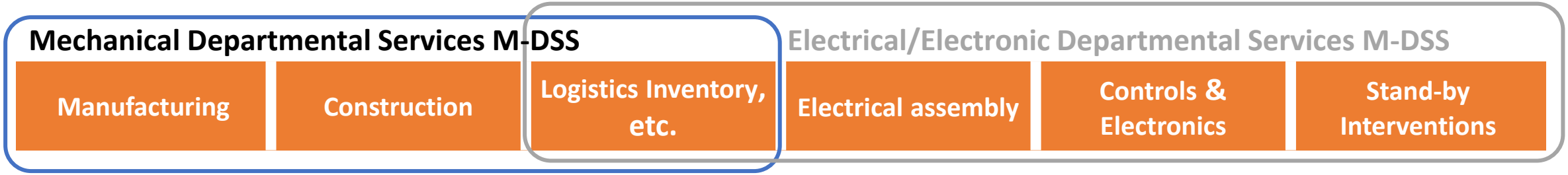
SY Departmental Service Support



Wim WETERINGS (SY-AR)
01-07-2024

SY Departmental Service Support (DSS)

- The DSS S264/SY contract started in July 2022
- With Services divided into 2 distinct Competencies:



- **DSS workforce grouped by Competency and execute the requested Services within the whole SY department.**
- **Each DSS Service has a specific hourly rate and DSS personnel is invoiced on performed Services and not qualification (as was for FSU).**

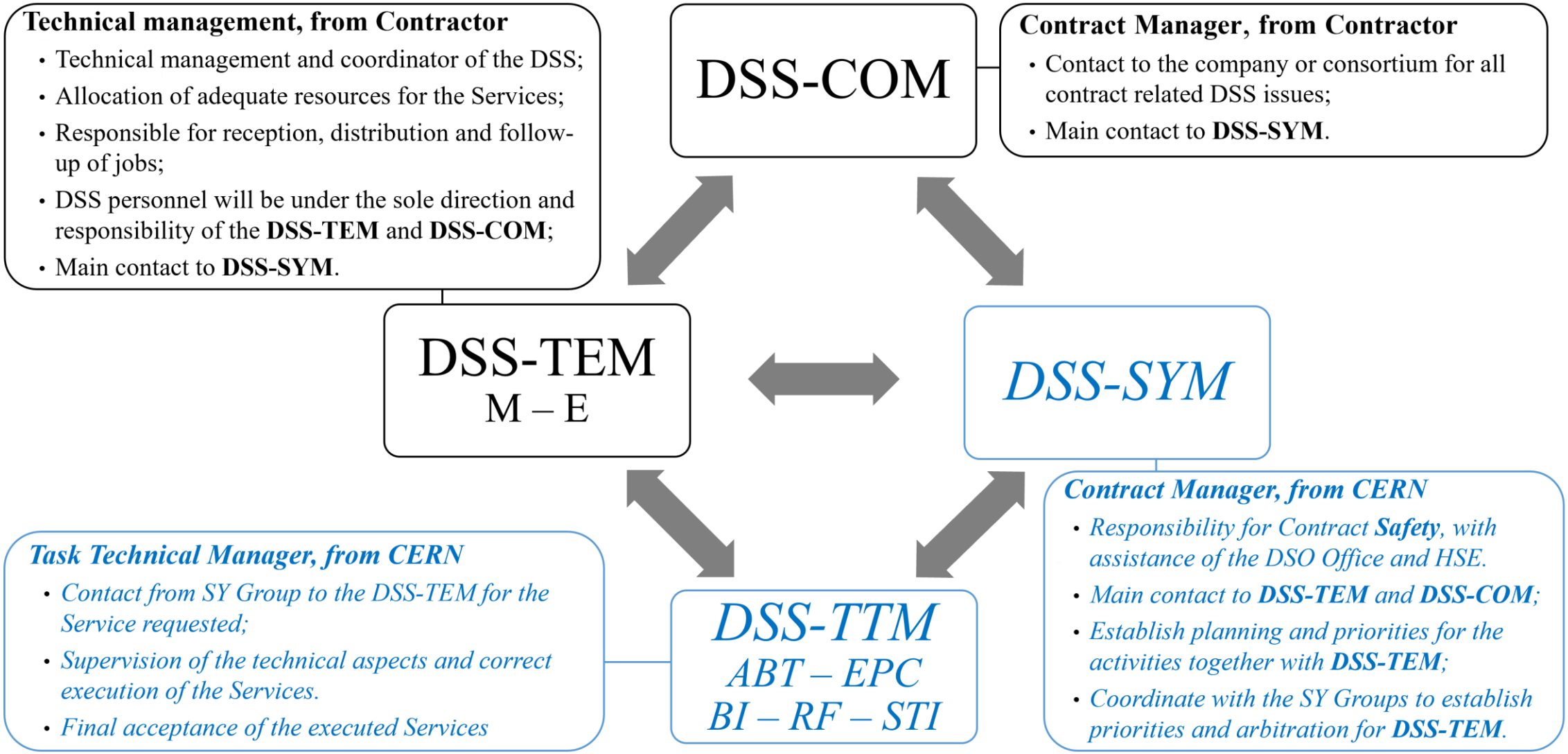
Mechanical Departmental Service Support (M-DSS)

Activities	Services	Description
Manufacturing machining, turning and milling with traditional and CNC machines, sheet metal work, welding and fitting of (stainless) steel, copper, brass and non-metallic materials	MM1	Conventional Machining
	MM2	Non-Conventional Machining
	MM3	Sheet Metal Work
	MM4	Joining Techniques
	MM5	Work-shop supervision
Construction assembly, maintenance, and installation of a large variation of accelerator technical systems	MC1	General Assembly
	MC2	Cleanroom Assembly
	MC3	Electro-Mechanical Assembly
Other Activities logistics, inventory, test bench preparation and Ultra High Vacuum (UHV) related activities	MO1	Logistics, Inventory & Storage
	MO2	Test Benches & Instrumentation
	MO3	Vacuum Activities
Supervision	DSS-TEM	Technical management of the DSS

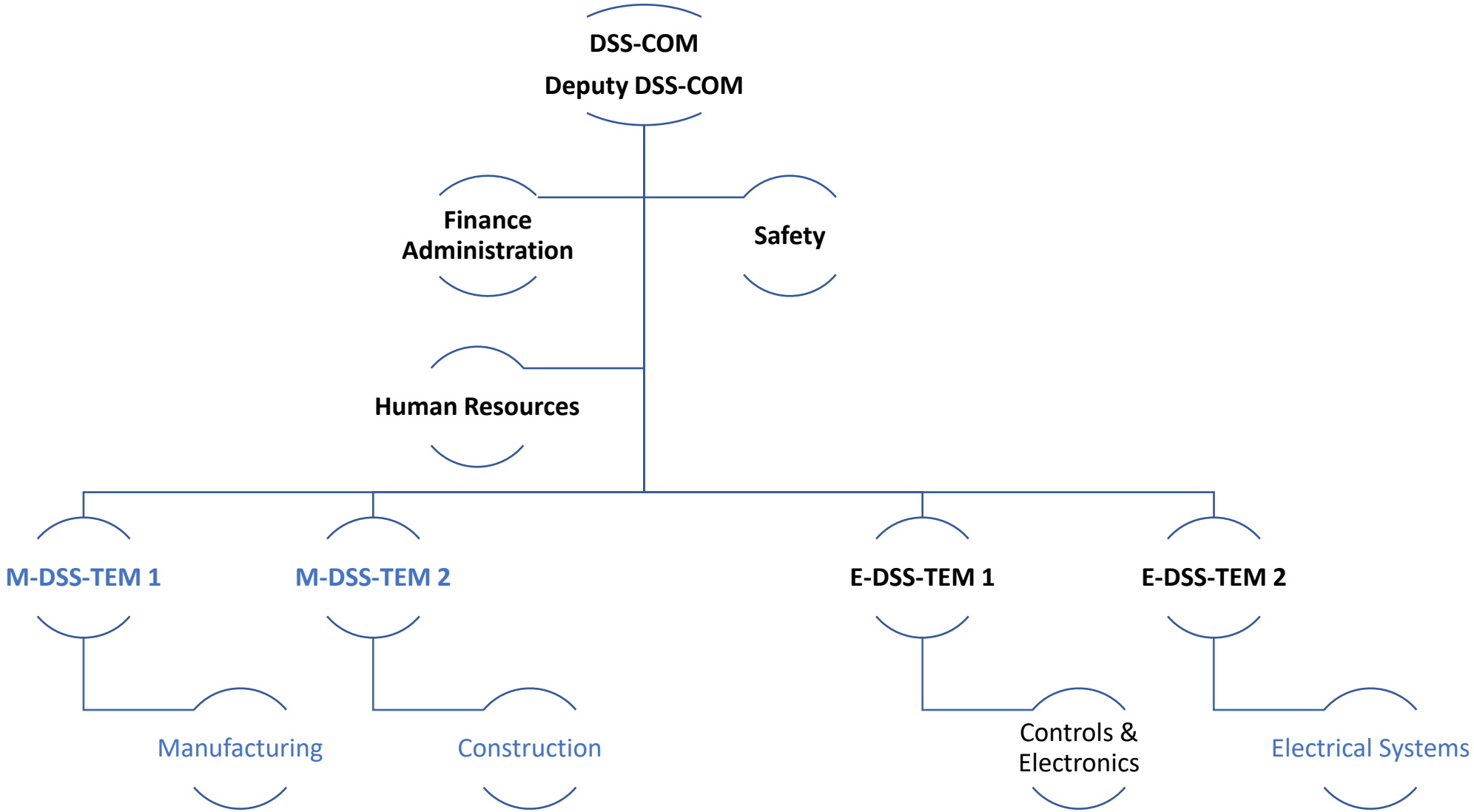
Electrical/Electronic Departmental Service Support (E-DSS)

Activities	Services	Description
Controls & Electrical Assembly assembly, electrical cabling, maintenance and installation of control chassis, racks and electrical installations	EC1	Controls Systems Assembly
	EC2	Controls Systems Wiring
	EC3	Testing and debugging
	EC4	Electrical Assembly
Electronics assembly, maintenance, installation, measurements and testing of electronics components and printed circuit boards	EE1	Acquisition Systems
	EE2	PCB & SMD work
	EE3	Testing and debugging
Interventions lock-in and lock-out procedures and first line intervention of electrical installations	EI0	24/7 Stand-by Servicey of 2 workers
	EI1	Intervention electrical installations
	EI2	Lock-in/out electrical installations
	EI3	Preventive & Corrective Maintenance
	EI4	Reporting
Other Activities logistics, inventory, spare parts management, documentation and test bench preparation	EO1	Logistics, Inventory & Storage
	EO2	Test Benches & Instrumentation
	EO3	Documentation
Supervision	DSS-TEM	Technical management of the DSS

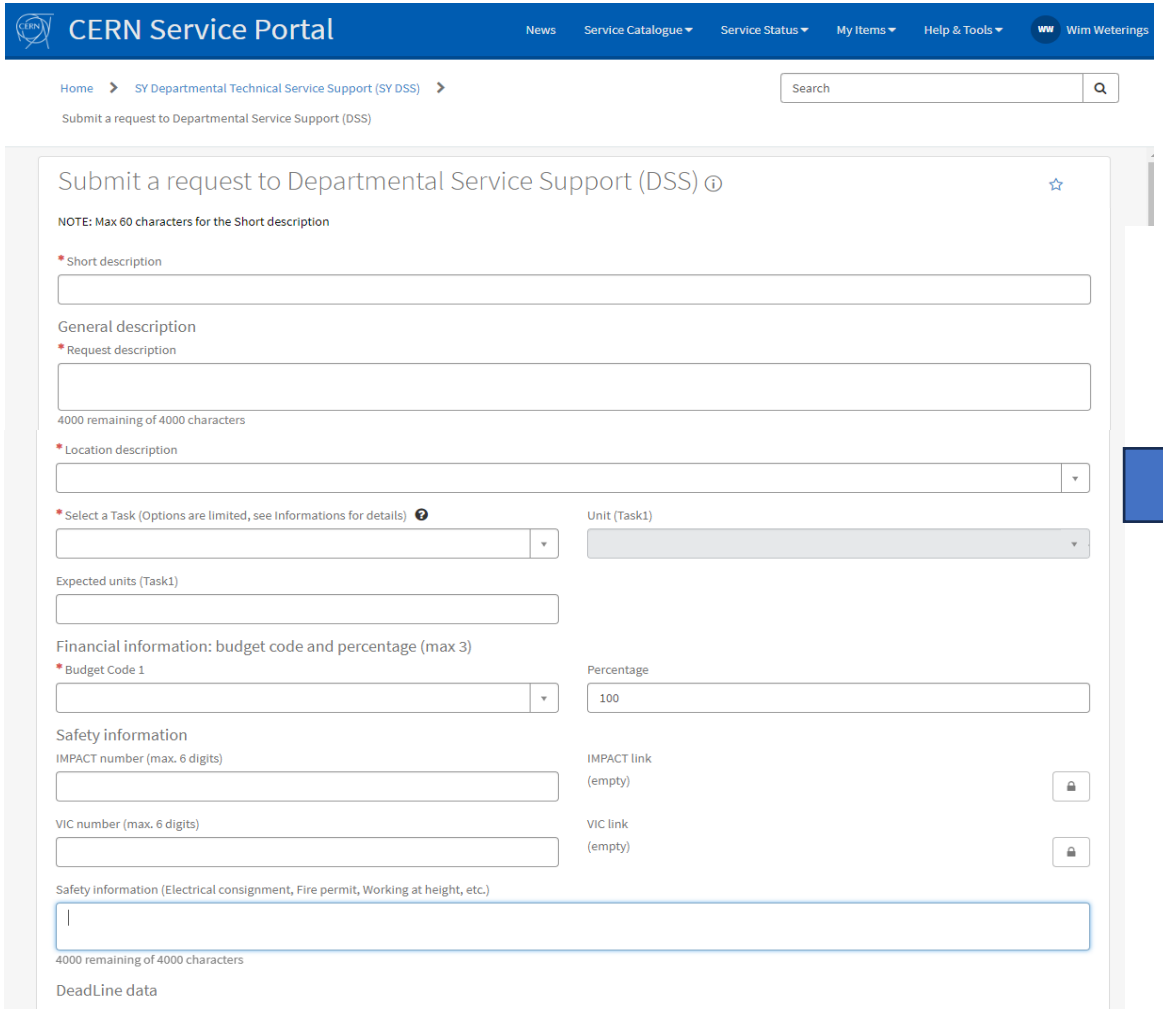
Management and Supervision

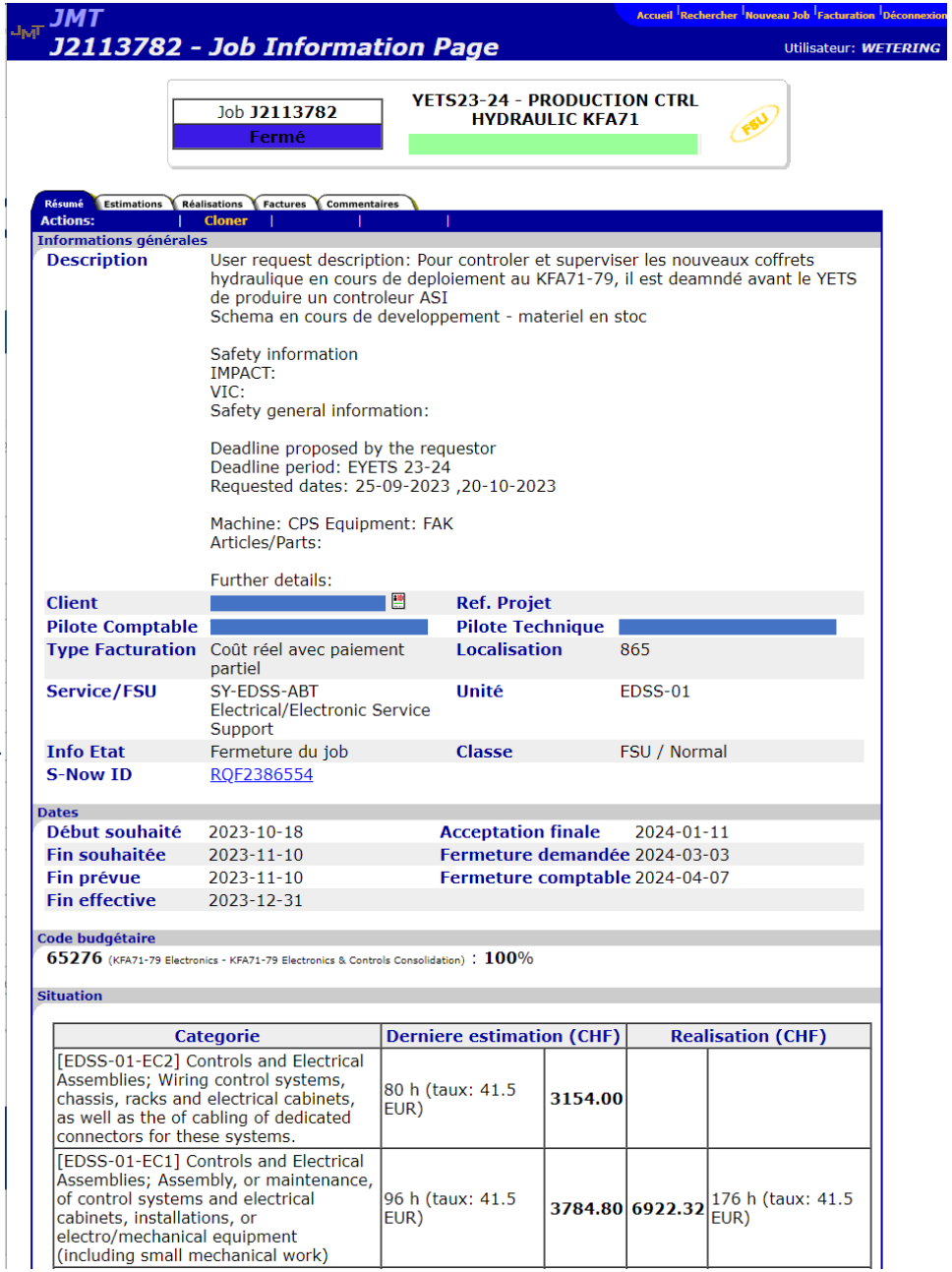


Contractor’s organisation & roles

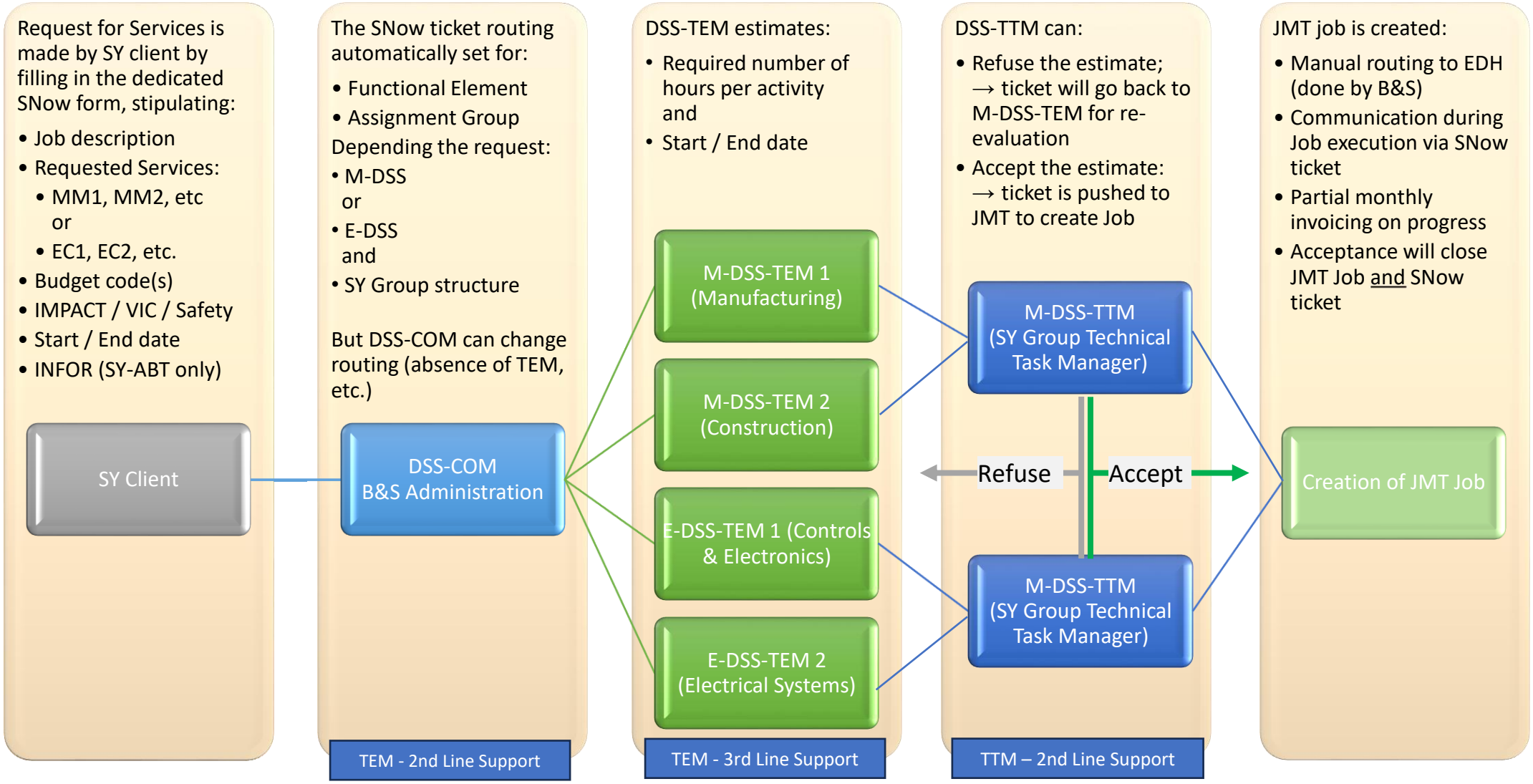


Jobs via SNow to JMT





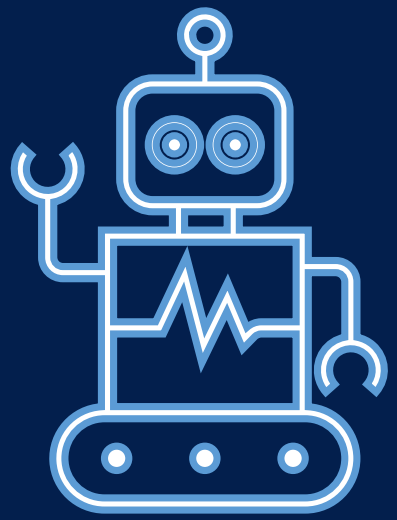
Job request Workflow



Conclusion

- SY department started a new Departmental Service Support (DSS) contract 07/2022
- Replacing the previous FSU contracts in SY
- Services are divided in distinct competencies and linked activities
- SY Clients request services via a SNow Ticket
  - Routing of the ticket depends on requested services and client group
  - Contractor makes the estimate of required hours and planned dates in SNow
  - CERN accepts or declines the estimate in SNow
- Upon acceptance in SNow, a JMT job is automatically created
  - EDH approval, follow-up of executed hours, invoicing, etc. in JMT
  - Client communication in SNow
  - Acceptance of job in JMT closes SNow tickety

ServiceNow ⟷ INFOR LN
to manage external jobs and billing efficiently



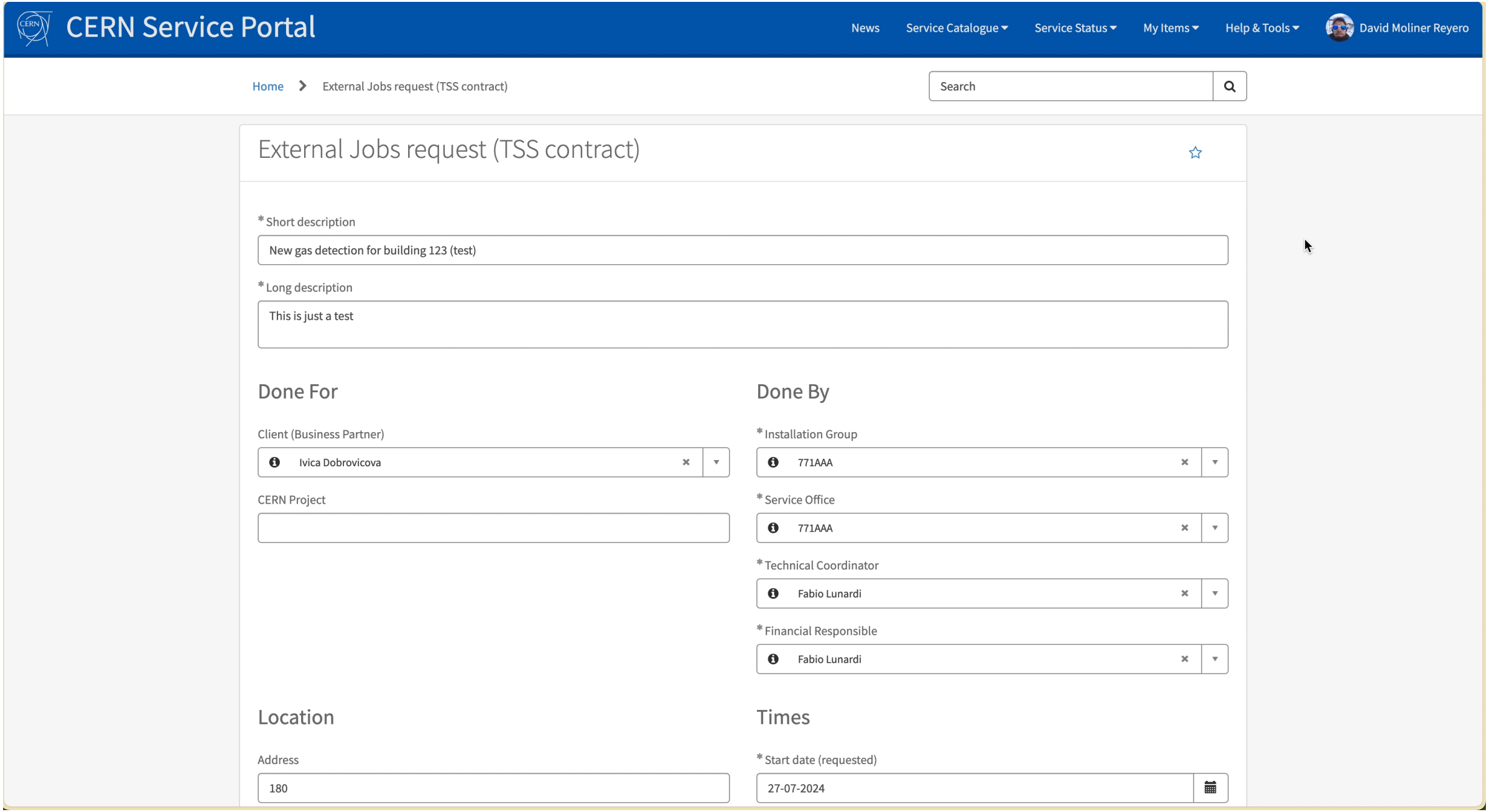
David MOLINER REYERO (SCE-SMS)
01-07-2024

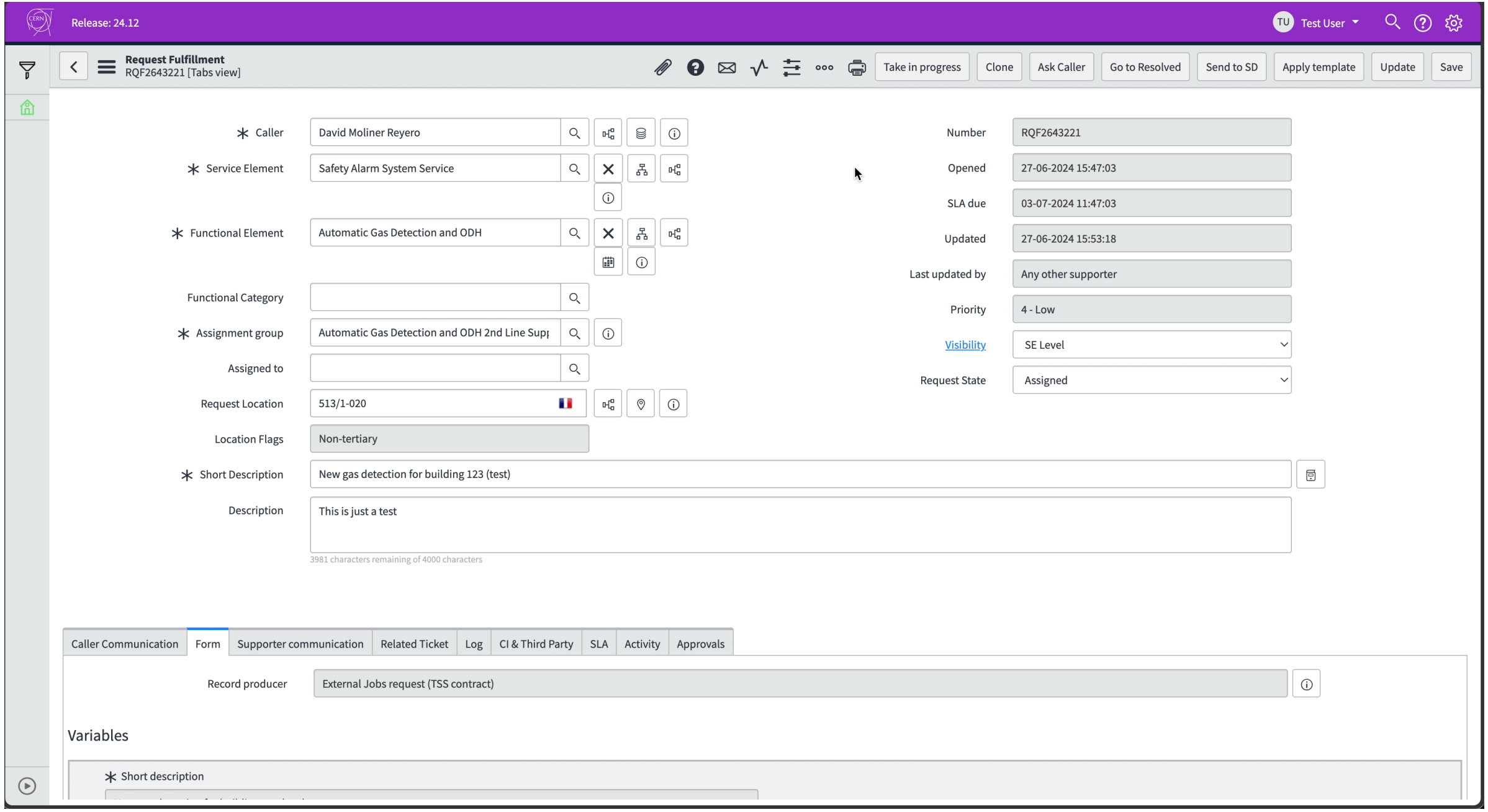
- INFOR LN
- ERP (Enterprise Resource Planning) software developed by Infor
- Used at CERN to manage the supply chain
- Its use is being extended to work with external contractors (replacing JMT)

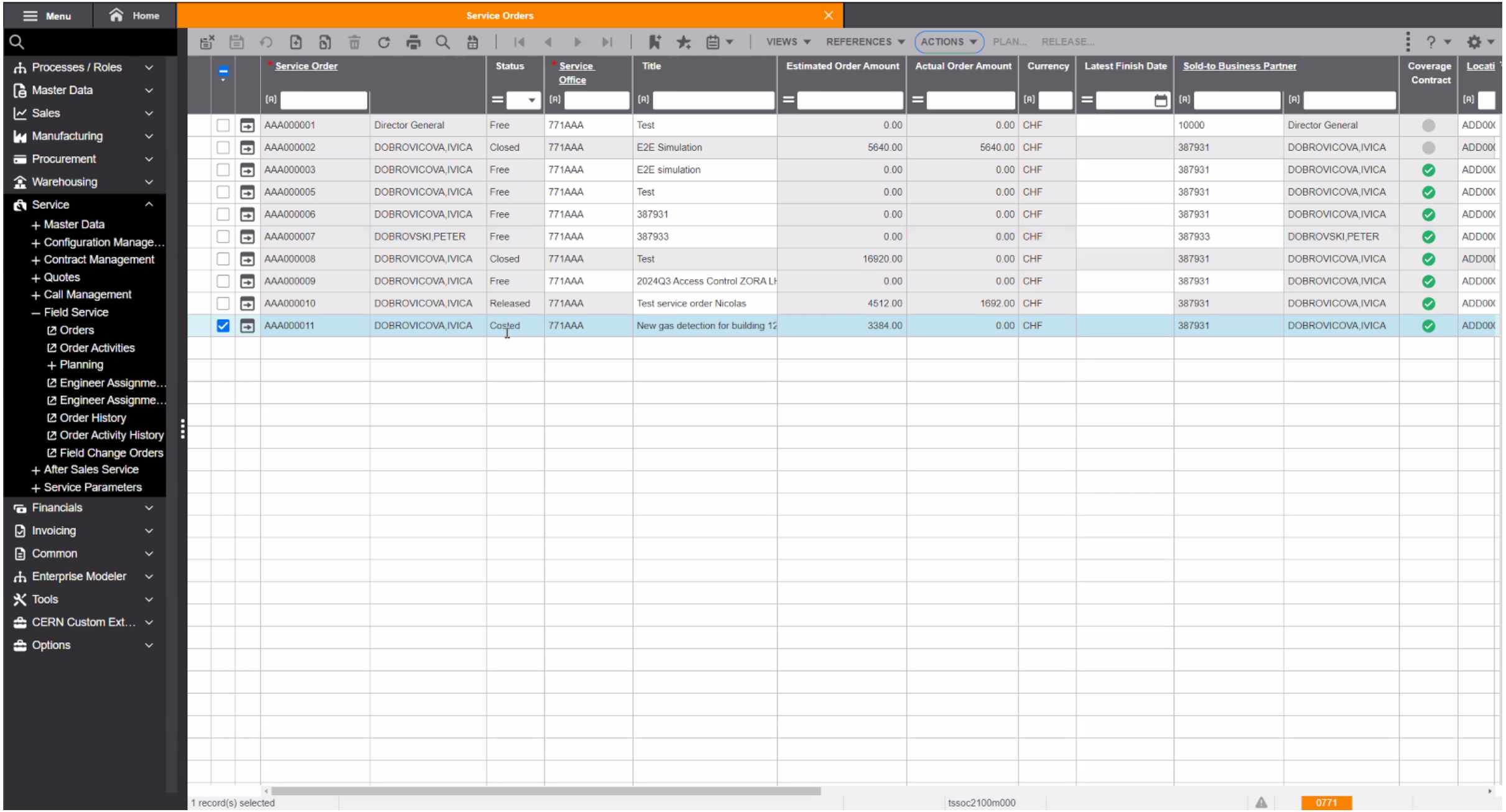
- Use cases
- Creation of Service Orders directly in INFOR LN
- Creation through ServiceNow
  - User does not need to know how to use INFOR LN
  - No need to know all the information required to create a Service Order
    - Communication between the user and the support group
    - Supporters can complete the missing data and automatically send it to INFOR LN

DEMO

- Still under development


CERN Service Portal
News
Service Catalogue
Service Status
My Items
Help & Tools
David Moliner Reyero
Home
External Jobs request (TSS contract)
Search
External Jobs request (TSS contract)
* Short description
New gas detection for building 123 (test)
* Long description
This is just a test
Done For
Client (Business Partner)
Ivica Dobrovicova
CERN Project
Done By
* Installation Group
771AAA
* Service Office
771AAA
* Technical Coordinator
Fabio Lunardi
* Financial Responsible
Fabio Lunardi
Location
Address
180
Times
* Start date (requested)
27-07-2024


Release: 24.12
TU Test User
Request Fulfillment
RQF2643221 [Tabs view]
Take in progress
Clone
Ask Caller
Go to Resolved
Send to SD
Apply template
Update
Save
Caller
David Moliner Reyero
Service Element
Safety Alarm System Service
Functional Element
Automatic Gas Detection and ODH
Functional Category
Assignment group
Automatic Gas Detection and ODH 2nd Line Supp
Assigned to
Request Location
513/1-020
Location Flags
Non-tertiary
Short Description
New gas detection for building 123 (test)
Description
This is just a test
3981 characters remaining of 4000 characters
Number
RQF2643221
Opened
27-06-2024 15:47:03
SLA due
03-07-2024 11:47:03
Updated
27-06-2024 15:53:18
Last updated by
Any other supporter
Priority
4 - Low
Visibility
SE Level
Request State
Assigned
Caller Communication
Form
Supporter communication
Related Ticket
Log
CI & Third Party
SLA
Activity
Approvals
Record producer
External Jobs request (TSS contract)
Variables
Short description


Menu
Home
Service Orders
VIEWS
REFERENCES
ACTIONS
PLAN...
RELEASE...
Processes / Roles
Master Data
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Manufacturing
Procurement
Warehousing
Service
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+ Contract Management
+ Quotes
+ Call Management
– Field Service
Orders
Order Activities
+ Planning
Engineer Assignme...
Engineer Assignme...
Order History
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Field Change Orders
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+ Service Parameters
Financials
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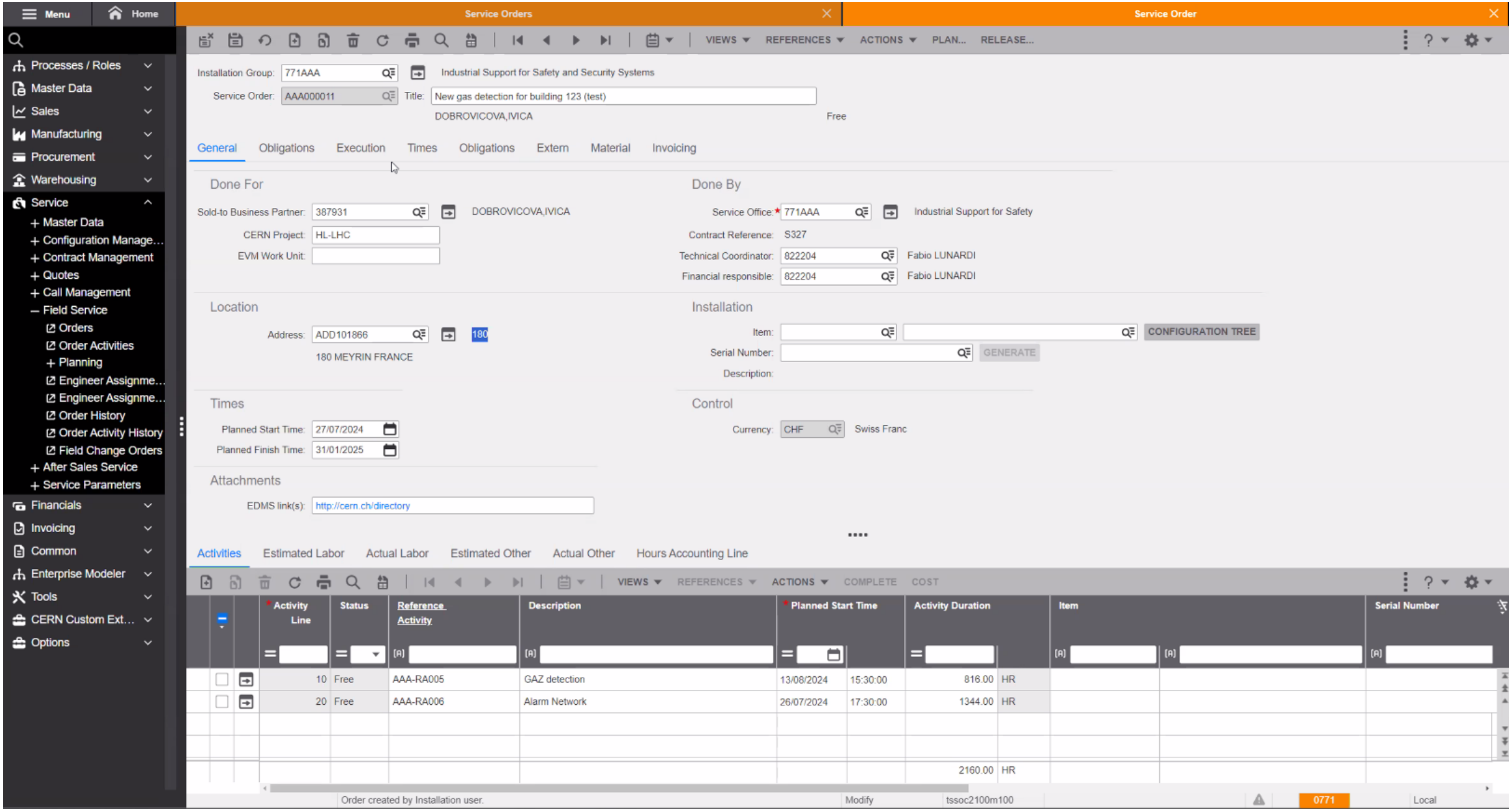
CERN Custom Ext...
Options
Service Order
Status
Service Office
Title
Estimated Order Amount
Actual Order Amount
Currency
Latest Finish Date
Sold-to Business Partner
Coverage Contract
Locati
AAA000001 Director General Free 771AAA Test 0.00 0.00 CHF 10000 Director General ADD00(
AAA000002 DOBROVICOVA,IVICA Closed 771AAA E2E Simulation 5640.00 5640.00 CHF 387931 DOBROVICOVA,IVICA ADD00(
AAA000003 DOBROVICOVA,IVICA Free 771AAA E2E simulation 0.00 0.00 CHF 387931 DOBROVICOVA,IVICA ADD00(
AAA000005 DOBROVICOVA,IVICA Free 771AAA Test 0.00 0.00 CHF 387931 DOBROVICOVA,IVICA ADD00(
AAA000006 DOBROVICOVA,IVICA Free 771AAA 387931 0.00 0.00 CHF 387931 DOBROVICOVA,IVICA ADD00(
AAA000007 DOBROVSKI,PETER Free 771AAA 387933 0.00 0.00 CHF 387933 DOBROVSKI,PETER ADD00(
AAA000008 DOBROVICOVA,IVICA Closed 771AAA Test 16920.00 0.00 CHF 387931 DOBROVICOVA,IVICA ADD00(
AAA000009 DOBROVICOVA,IVICA Free 771AAA 2024Q3 Access Control ZORA LH 0.00 0.00 CHF 387931 DOBROVICOVA,IVICA ADD00(
AAA000010 DOBROVICOVA,IVICA Released 771AAA Test service order Nicolas 4512.00 1692.00 CHF 387931 DOBROVICOVA,IVICA ADD00(
AAA000011 DOBROVICOVA,IVICA Costed 771AAA New gas detection for building 12 3384.00 0.00 CHF 387931 DOBROVICOVA,IVICA ADD00(
1 record(s) selected
tssoc2100m000
0771


Menu
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Procurement
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Master Data
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Contract Management
Quotes
Call Management
Field Service
Orders
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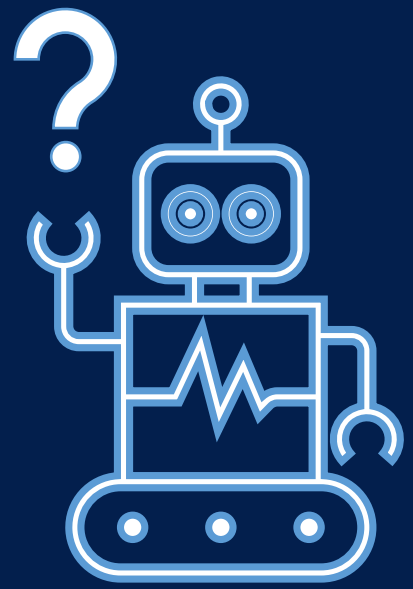
Planning
Engineer Assignme...
Engineer Assignme...
Order History
Order Activity History
Field Change Orders
After Sales Service
Service Parameters
Financials
Invoicing
Common
Enterprise Modeler
Tools
CERN Custom Ext...
Options
Installation Group: 771AAA
Industrial Support for Safety and Security Systems
Service Order: AAA000011
Title: New gas detection for building 123 (test)
DOBROVICOVA,IVICA
Free
General
Obligations
Execution
Times
Obligations
Extern
Material
Invoicing
Done For
Sold-to Business Partner: 387931
DOBROVICOVA,IVICA
CERN Project: HL-LHC
EVM Work Unit:
Done By
Service Office: 771AAA
Industrial Support for Safety
Contract Reference: S327
Technical Coordinator: 822204
Fabio LUNARDI
Financial responsible: 822204
Fabio LUNARDI
Location
Address: ADD101866
180
180 MEYRIN FRANCE
Installation
Item:
CONFIGURATION TREE
Serial Number:
GENERATE
Description:
Times
Planned Start Time: 27/07/2024
Planned Finish Time: 31/01/2025
Control
Currency: CHF
Swiss Franc
Attachments
EDMS link(s): http://cern.ch/directory
Activities
Estimated Labor
Actual Labor
Estimated Other
Actual Other
Hours Accounting Line
VIEWS
REFERENCES
ACTIONS
COMPLETE
COST
Activity Line
Status
Reference Activity
Description
Planned Start Time
Activity Duration
Item
Serial Number
10 Free AAA-RA005 GAZ detection 13/08/2024 15:30:00 816.00 HR
20 Free AAA-RA006 Alarm Network 26/07/2024 17:30:00 1344.00 HR
2160.00 HR
Order created by Installation user.
Modify
tssoc2100m100
0771
Local

Q  A