knowledge17

WORK at LIGHTSPEED

Service Metrics and Quality Management at CERN

DAVID MARTIN CLAVO
SOFTWARE ENGINEER AND SERVICENOW TEAM LEADER
IT Department
CERN

© 2017 ServiceNow All Rights Reserved

servicenow

Agenda

1. About CERN
2. Ticket Feedback
3. SLAs and OLAs
4. Quality Management
5. Conclusion

© 2017 ServiceNow All Rights Reserved

Speaker Introduction



NAME: David Martin Clavo

TITLE: Software Engineer and ServiceNow Team Leader

FUNCTION: IT Department

COMPANY: CERN

EXPERIENCE: 2 years as main responsible for the ServiceNow service at CERN, and coordinating the ServiceNow dev/admin team. 2 years as Senior Technical Consultant in Aspediens (now Fruition Partners Europe). 3 years as ServiceNow dev/admin at CERN. 2 years as software/web engineer at CERN

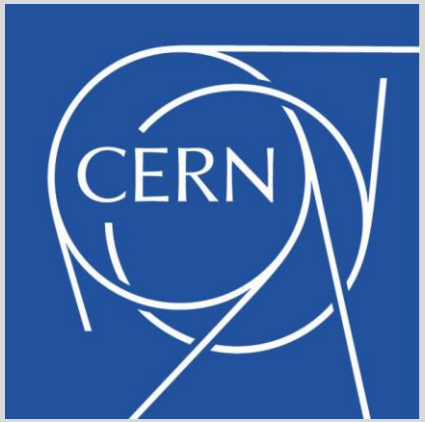
EXPERTISE: ServiceNow, web engineering

ACHIEVEMENTS: Innovation of the Year at K11 Frankfurt : CERN Service Portal

CURRENT PROJECTS: ServiceNow test automation. Service Portal. Outage notification system. Support rota automation. CMDB improvements for the CERN IT Department

© 2017 ServiceNow All Rights Reserved

My Company



NAME: CERN

TYPE: International Organization, publicly funded, non-profit

INDUSTRY: Fundamental Research

MARKET FOCUS: Particle Physics

COMPANY'S PRIMARY PRODUCTS/SOLUTIONS: Particle collisions at lightspeed, Antimatter (billionths of grams), Data (50 petabytes / year)

COMPANY-WIDE INITIATIVES: Building the world's most powerful particle accelerator, Pushing the limits of human knowledge, Reducing costs and improving the quality of its services

© 2017 ServiceNow All Rights Reserved

Session Overview



Objectives

- Measuring service quality
- Measuring the compliance of your service contractors
- Managing the performance of your service contractors



What You Will Learn

- The CERN Quality Management processes
- Lessons learnt at CERN about getting feedback from users
- CERN's KPIs for its service support contractors

© 2017 ServiceNow All Rights Reserved

1. About CERN

2. Ticket Feedback
3. SLAs and OLAs
4. Quality Management
5. Conclusion

© 2017 ServiceNow All Rights Reserved

CERN… What is it?



http://home.cern/about

© 2017 ServiceNow All Rights Reserved

What does « CERN » stand for?

European

Organization for

Nuclear

Research

1954



© 2017 ServiceNow All Rights Reserved

Nuclear?





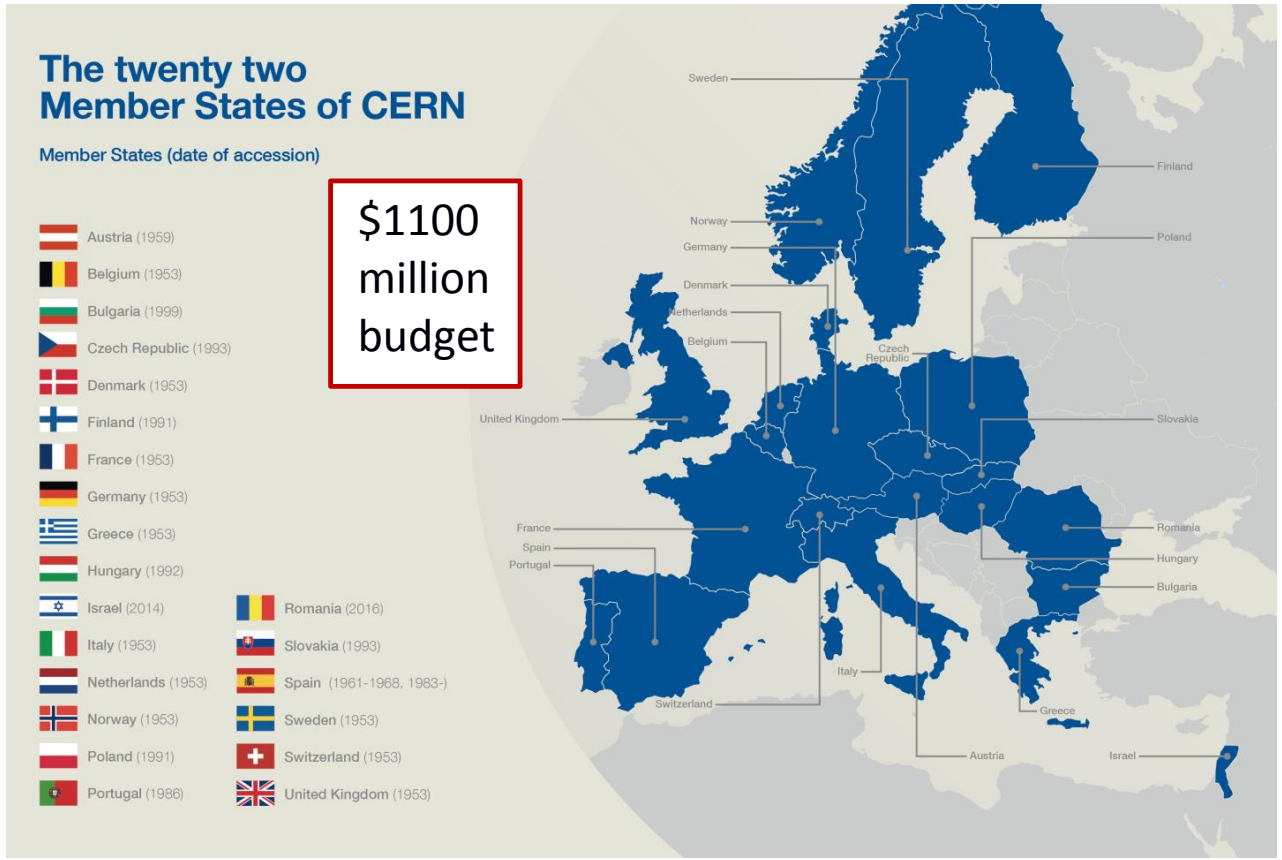


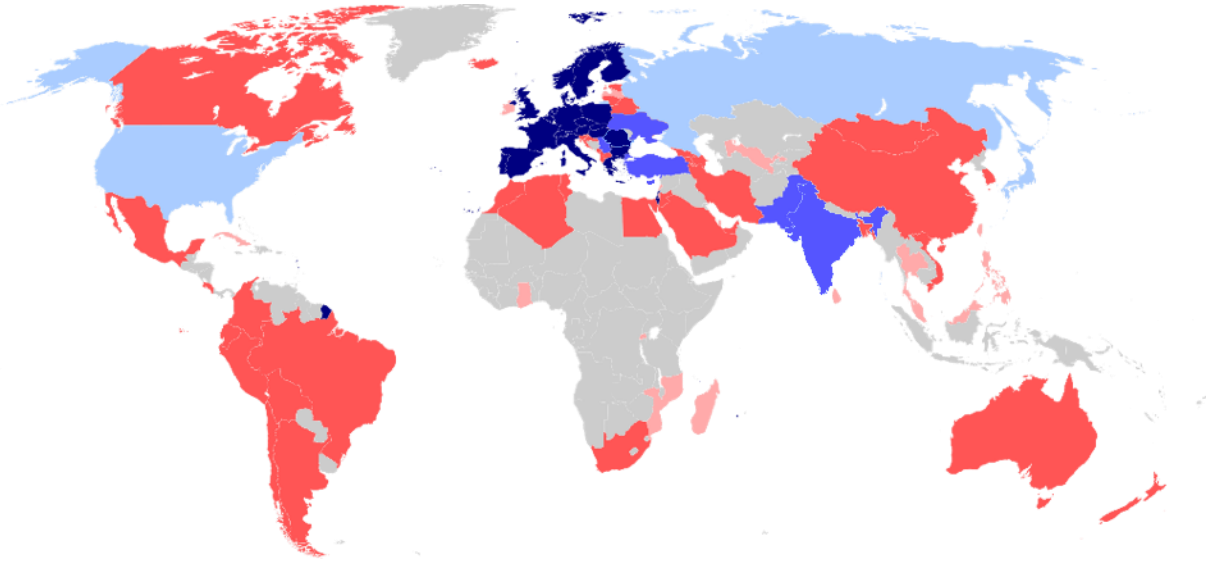
European Laboratory for Particle Physics

© 2017 ServiceNow All Rights Reserved

22 Member States

And a world collaboration





Associates

Cooperation agreements

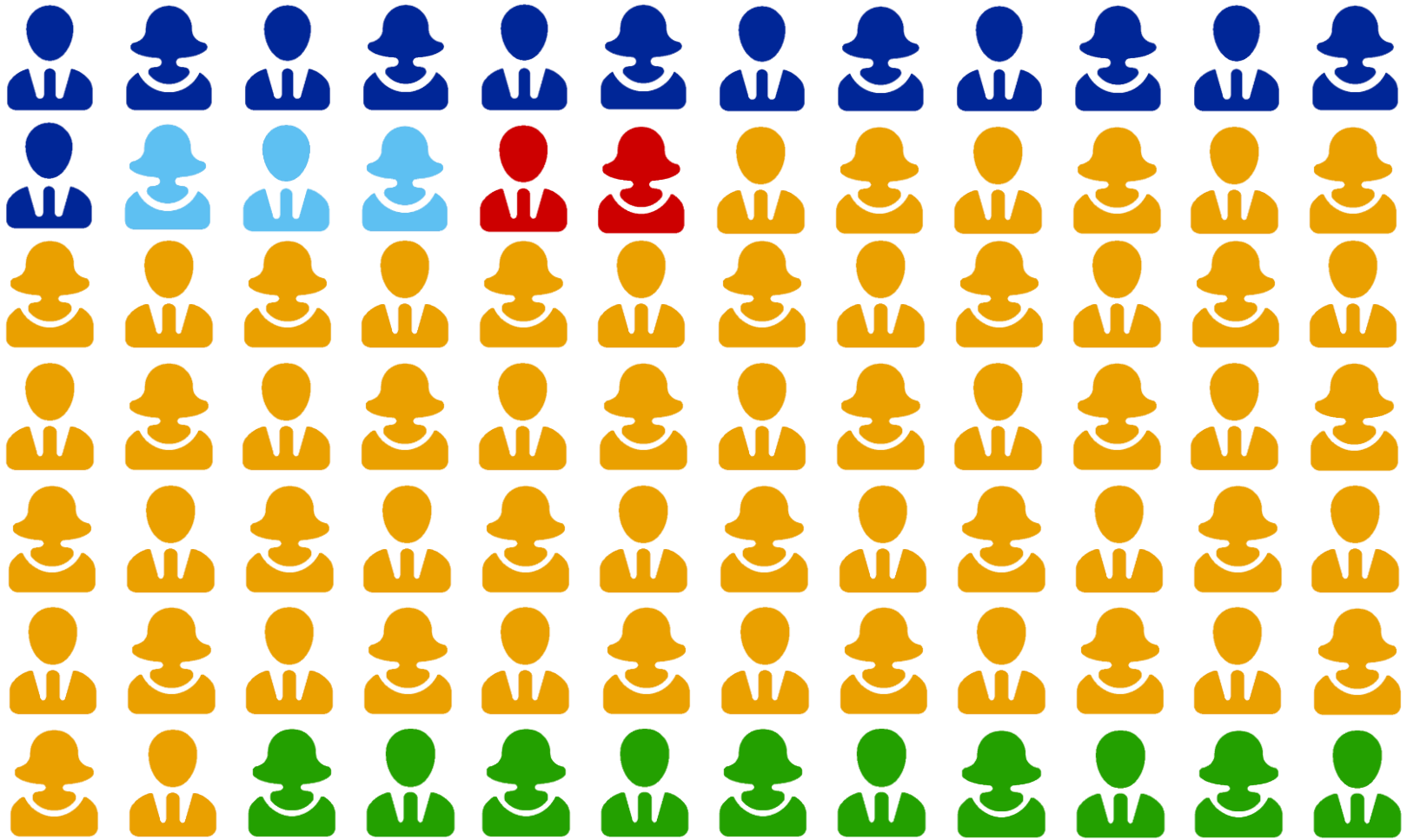
Observers

Scientific contacts

© 2017 ServiceNow All Rights Reserved

How many people?

+15,000!



2,500 staff

600 fellows & apprentices

500 students

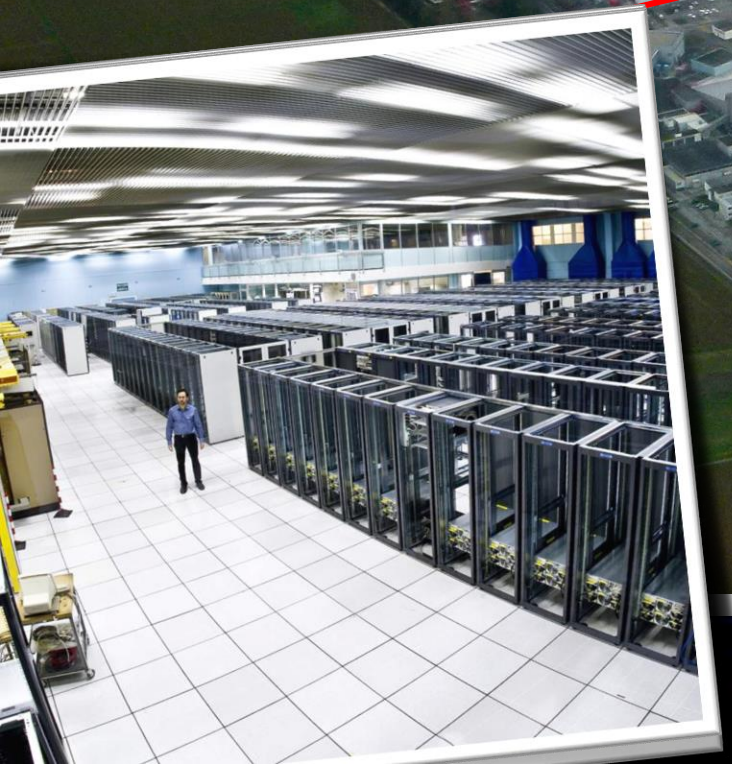
11,000 users

2,000 from external companies

© 2017 ServiceNow All Rights Reserved

Like a small town

Bank, Post Office,



CERN… What for?



© 2017 ServiceNow All Rights Reserved

Bringing people and nations *together*

Over 10,000 scientists
From 100+ countries



© 2017 ServiceNow All Rights Reserved

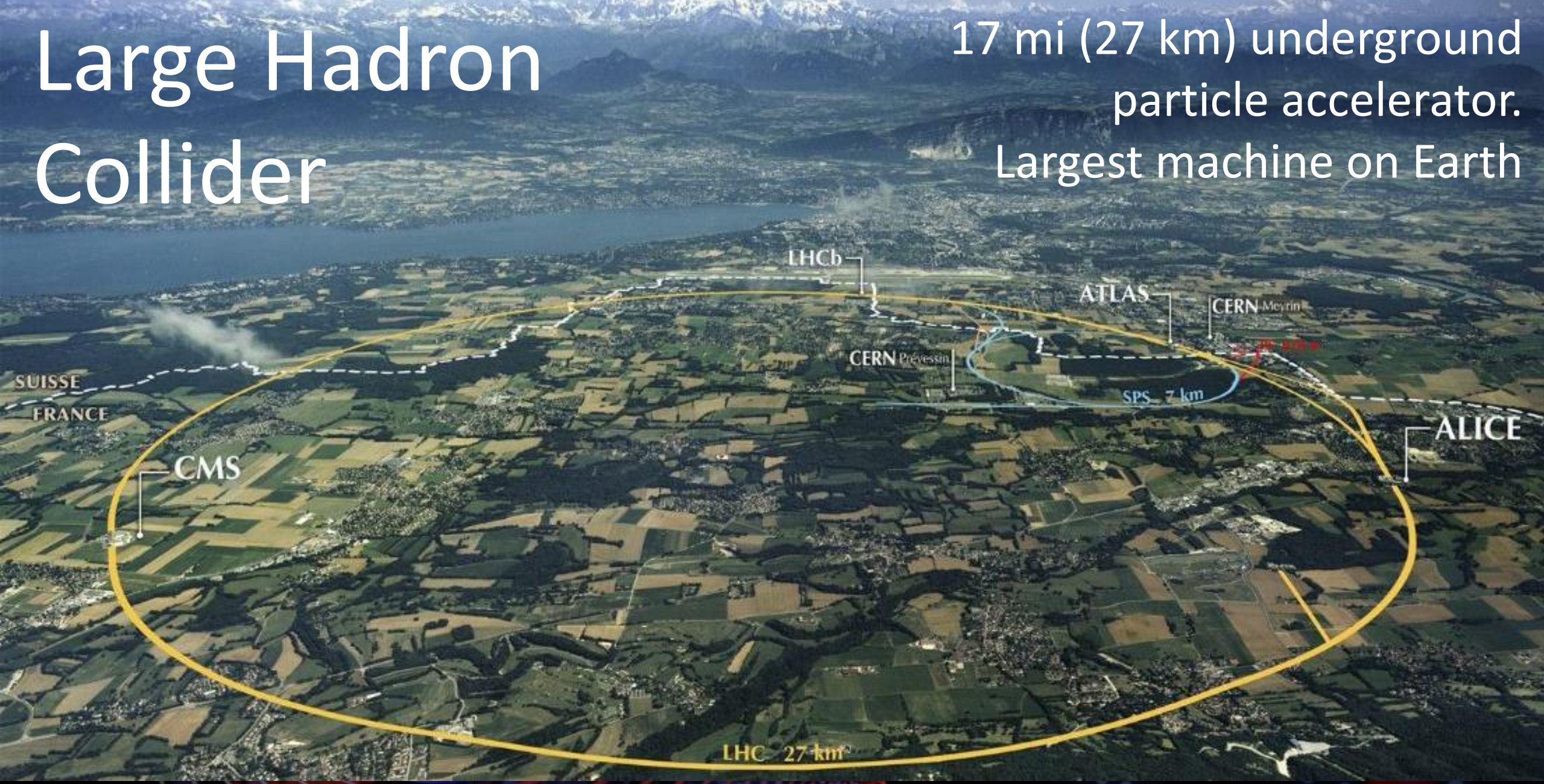
CERN… How does it work?



© 2017 ServiceNow All Rights Reserved

Large Hadron Collider

17 mi (27 km) underground particle accelerator.
Largest machine on Earth



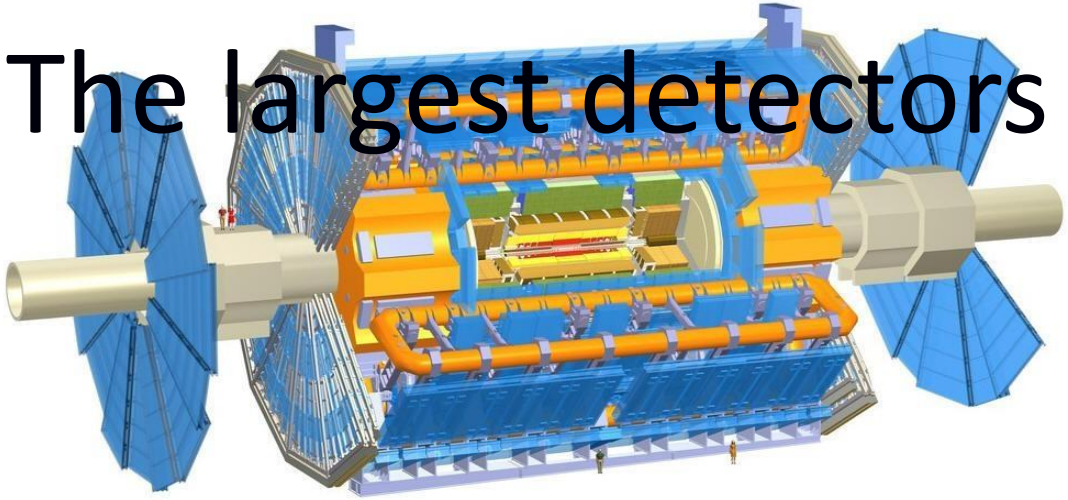
© 2017 ServiceNow All Rights Reserved

The most powerful magnets

The highest vacuum

The coldest temperature

The largest detectors



© 2017 ServiceNow All Rights Reserved

CERN: Not only fundamental science

Medical applications:
Antiproton therapy

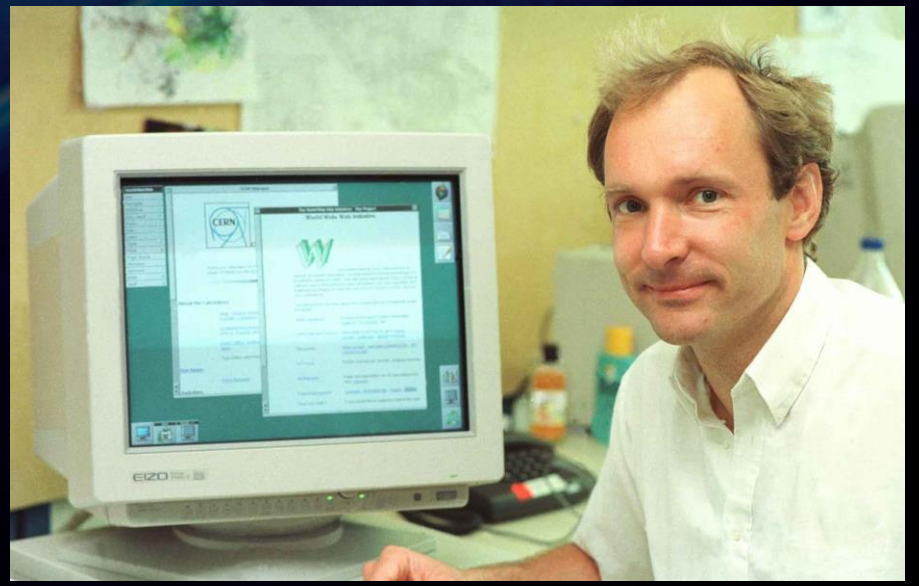


CERN openlab

Collaboration with ICT Companies
http://openlab.cern

New materials:
Lead tungstate crystals

Invention of the World Wide Web in 1989
Sir Tim Berners-Lee
(Turing Award)



© 2017 ServiceNow All Rights Reserved

CERN… Service Management



© 2017 ServiceNow All Rights Reserved

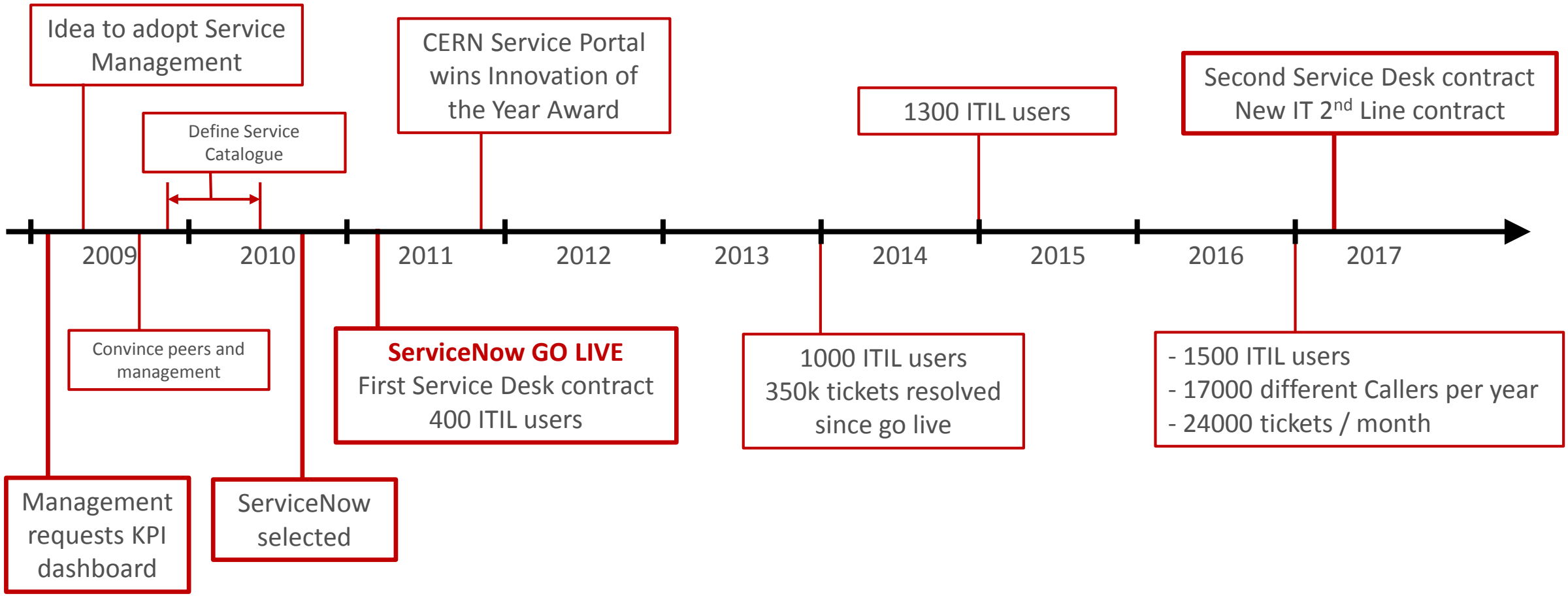
Service Management at CERN: goals

1. Simplify end users' and supporters' life by providing for all services:
   - One point of contact: one , one URL, one place
   - One process
   - One tool (ServiceNow)
   - One Service Catalogue and one Knowledge Base
2. Optimize efficiency and effectiveness
   - Align with good practices (ITIL)
   - High level of automation
   - Enable continuous improvement
3. Improve monitoring and control for management



© 2017 ServiceNow All Rights Reserved

Service Management at CERN: a long history



© 2017 ServiceNow All Rights Reserved

April 2017 : new support contracts

New Service Desk contract and team

- New contract
- **New** people
- New metrics, quality management, penalties

New IT Second Line contract

- New contract
- **Same** people
- New metrics, quality management, penalties

© 2017 ServiceNow All Rights Reserved

The 3 KPIs for service contractors

1. % of tickets with end user dissatisfied feedback
   - Detailed in the next section: **2. Ticket Feedback**

2. % of tickets with a breached OLAs
   - The various OLAs are detailed in section: **3. SLAs and OLAs**

3. % of tickets with a non-compliance report
   - Explained in the last section: **4. Quality Management**

© 2017 ServiceNow All Rights Reserved

1. About CERN

2. Ticket Feedback

3. SLAs and OLAs
4. Quality Management
5. Conclusion

© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback

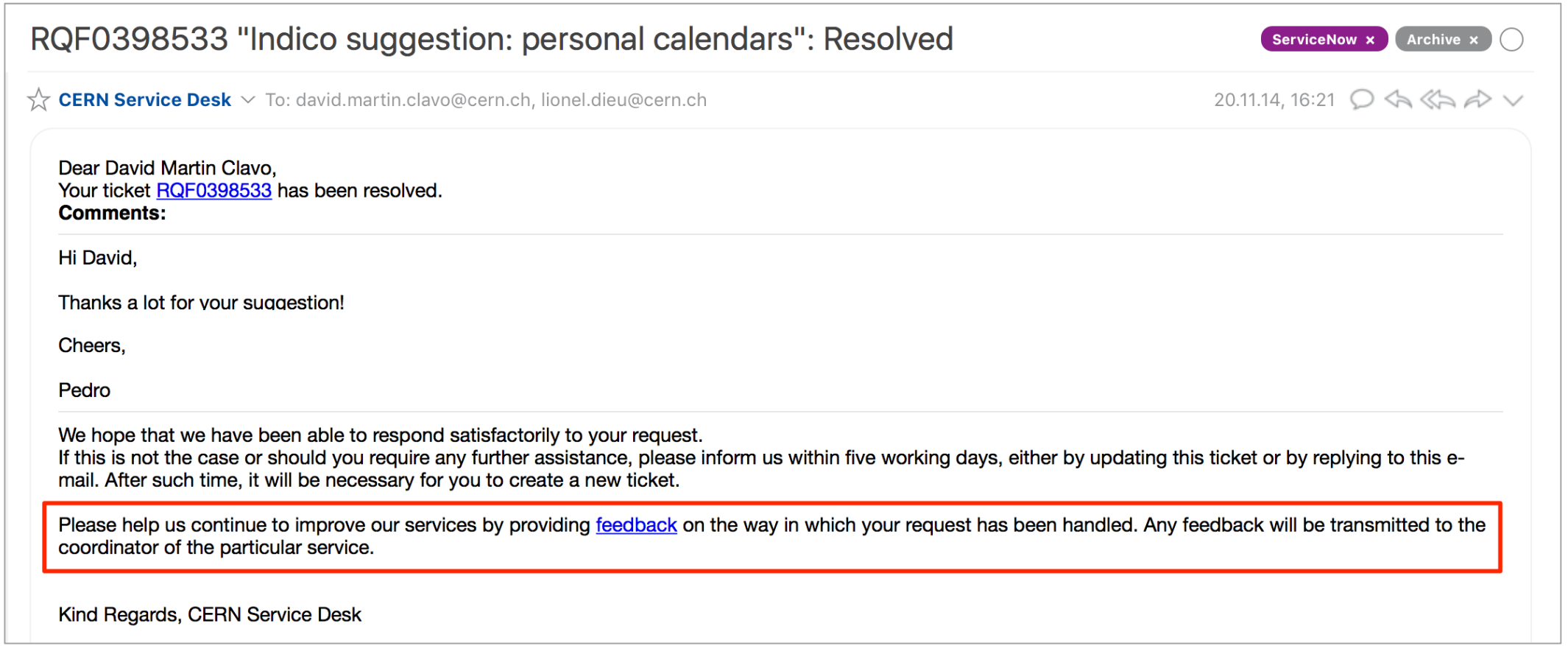
Process goal

- The Ticket Feedback process aims to enable users to give feedback about how their incidents or requests were handled by the supporter, and what they think about the service.
- It also enables the supporters and Functional Managers (responsible for service operation) to receive that feedback, in order to:
  - Improve the level / quality of the service
  - Take corrective actions if needed
- Feedback can be given by the Caller of a ticket at any time
- Feedback is encouraged when the ticket is resolved
- Feedback can be given on any ticket: not only on those handled by contractors, but also on those handled by CERN personnel.

© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback implementation : until 2015

Text and small link in email



RQF0398533 "Indico suggestion: personal calendars": Resolved

ServiceNow × Archive ×

CERN Service Desk To: david.martin.clavo@cern.ch, lionel.dieu@cern.ch 20.11.14, 16:21

Dear David Martin Clavo,
Your ticket RQF0398533 has been resolved.
Comments:

Hi David,

Thanks a lot for your suggestion!

Cheers,

Pedro

We hope that we have been able to respond satisfactorily to your request.
If this is not the case or should you require any further assistance, please inform us within five working days, either by updating this ticket or by replying to this e-mail. After such time, it will be necessary for you to create a new ticket.

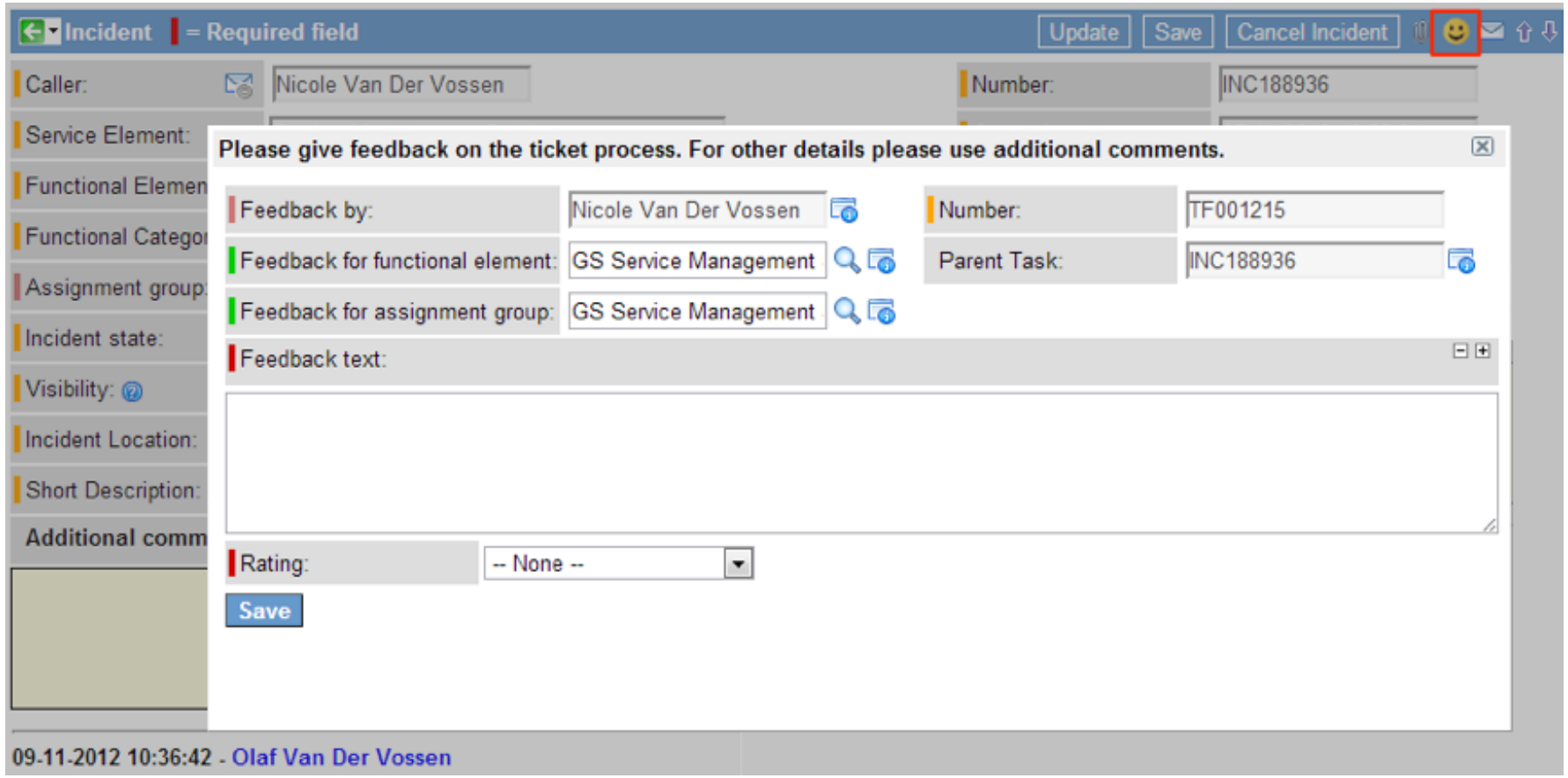
Please help us continue to improve our services by providing feedback on the way in which your request has been handled. Any feedback will be transmitted to the coordinator of the particular service.

Kind Regards, CERN Service Desk

© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback implementation : until 2015

Form-like dialog, small icon button



© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback implementation : from 2016

Graphical buttons in email


RQF0714122 "Visitor card. Arrival:24-02-2017 11:00:00 Garant: David Martin Clavo"

ServiceNow × Archive ×

CERN Service Desk To: david.martin.clavo@cern.ch 23.02.17, 12:07

Dear David,
There is a proposed solution for you.

Ticket No: RQF0714122
Short description: Visitor card. Arrival:24-02-2017 11:00:00Garant: David Martin Clavo
Message from Nathalie Vaudan:

Dear Sir,

The visitor card is available at the reception of the building 33.
Your demand was well taken into account.
We hope to have answered favorably your expectations.
Very cordially.

Should you require any further assistance, please inform us within five working days through the CERN Service Portal, or reply directly to this email. After this time, it will be necessary to create a new ticket.

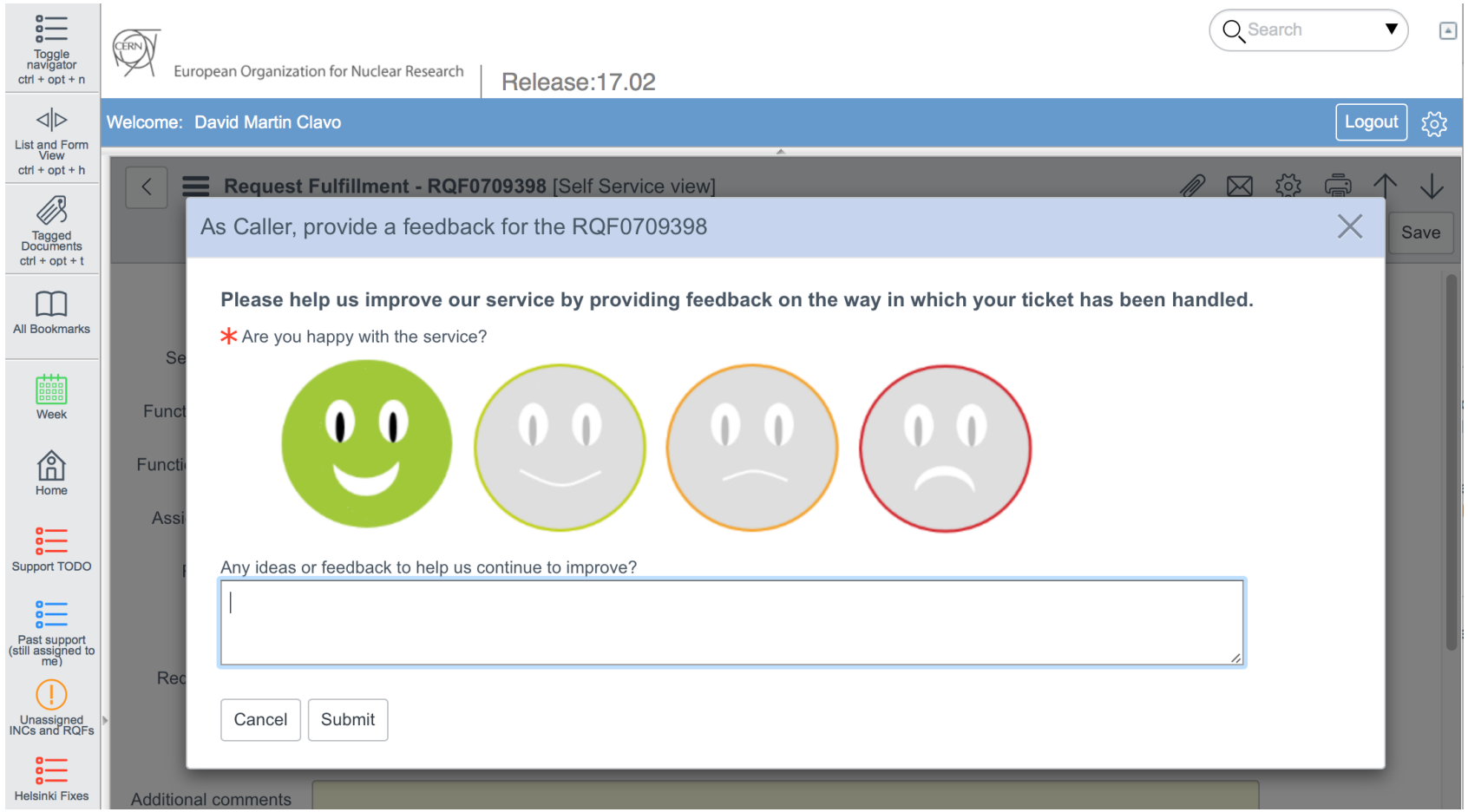
Are you happy with the way that your ticket has been resolved?
(Click on one of the smileys. Please, note that only the Caller of the ticket can provide feedback)

Kind Regards,
CERN Visitor's card/Cartes Visiteurs

© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback implementation : from 2016

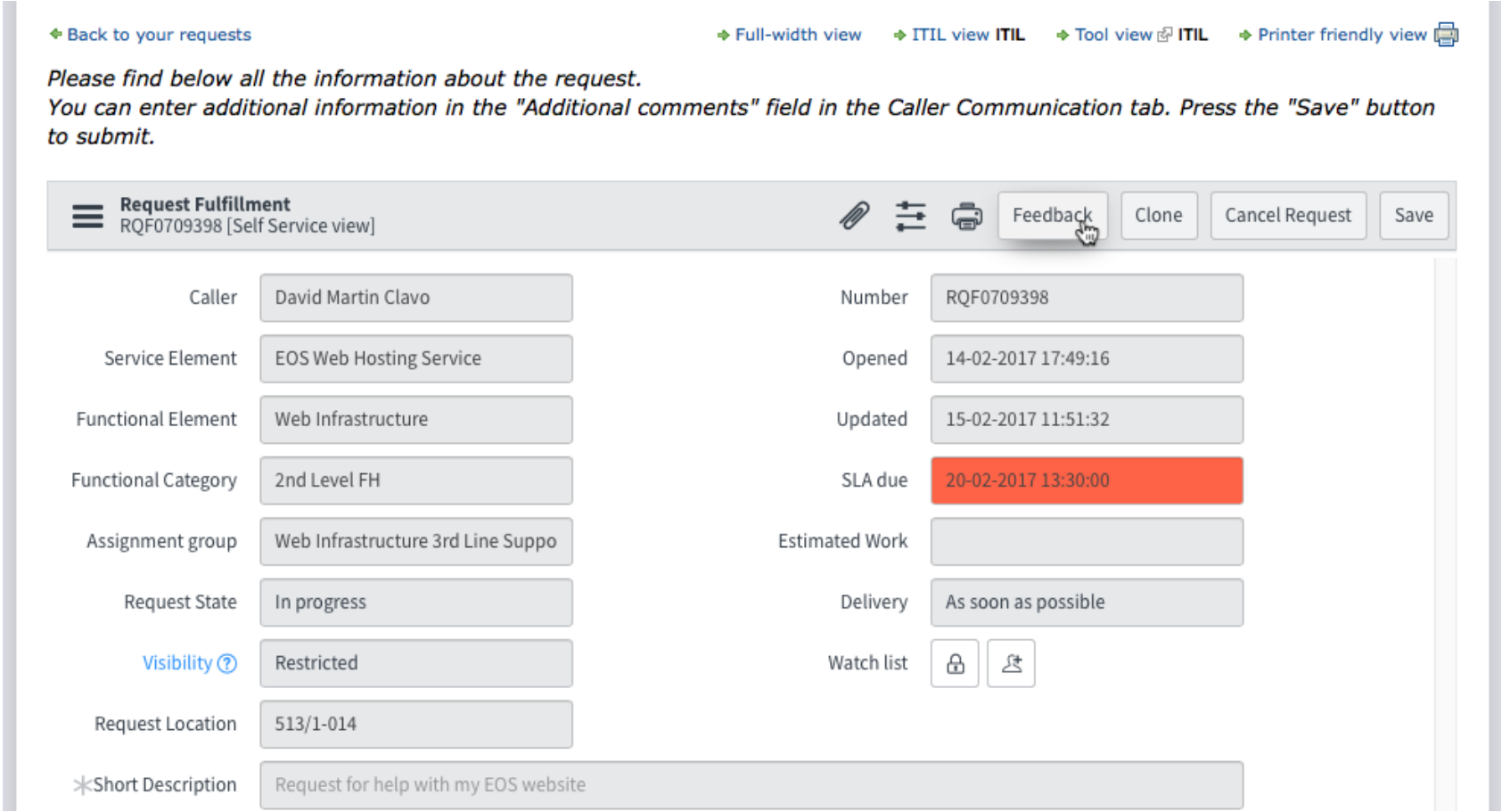
Easier and more usable dialog



© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback implementation : from 2016

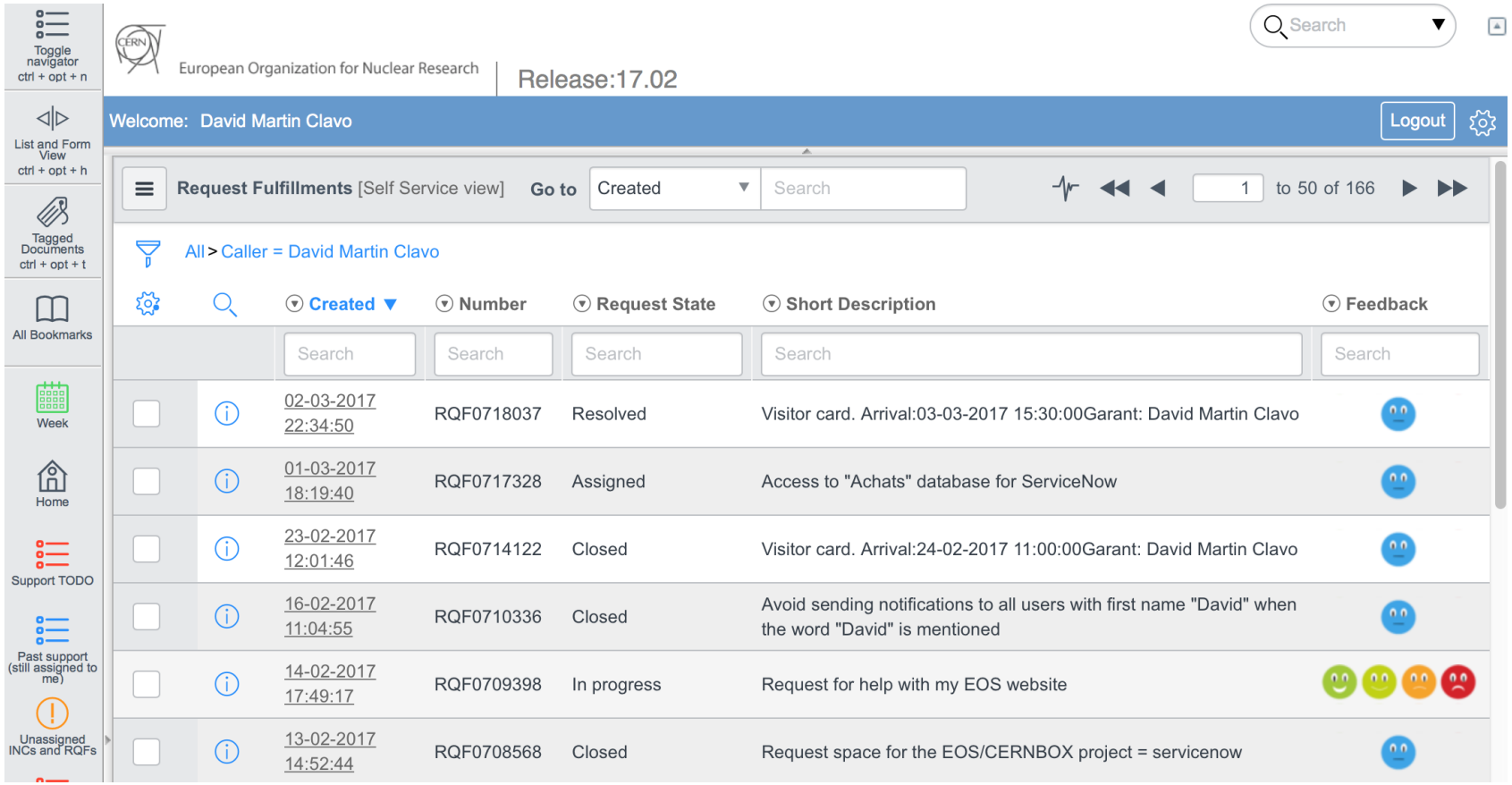
More usable and clear button in form



© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback implementation : from 2016

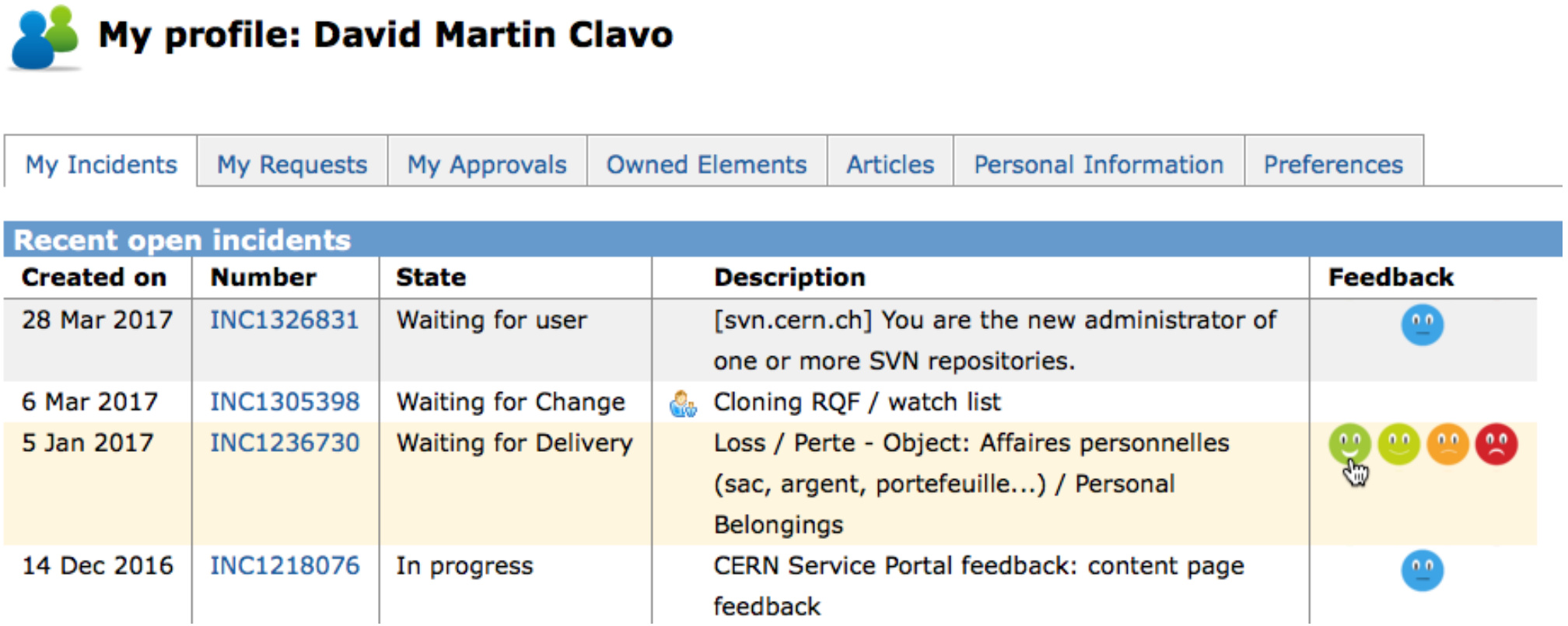
Buttons in ticket lists



© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback implementation : from 2016

Buttons in our CMS ticket list

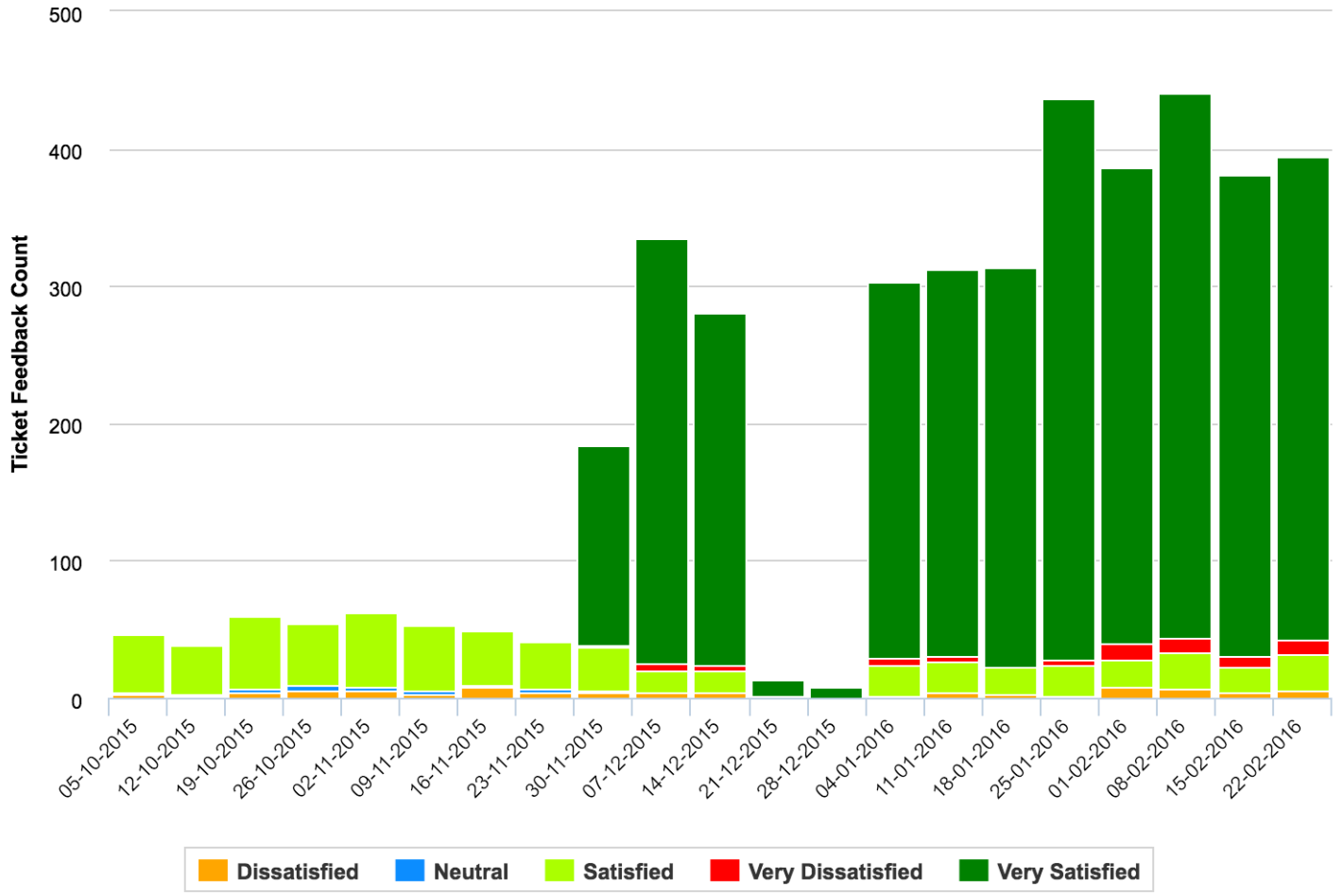


© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback: effect of change

Before and after:

- 10x more user feedbacks
- 20% of users give feedback on tickets.



© 2017 ServiceNow All Rights Reserved

CERN Ticket Feedback: follow-up

- The Service Management team contacts the user and Functional Manager and mediate.
- Report to the IT management and Site Management and Buildings management.
- Outcomes:
  - Improve the relationship between end users and supporters (ITIL users)
  - Improve Knowledge Base, processes, usage of ServiceNow by the supporters.

© 2017 ServiceNow All Rights Reserved

1. About CERN
2. Ticket Feedback

3. SLAs and OLAs

4. Quality Management
5. Conclusion

© 2017 ServiceNow All Rights Reserved

SLAs and OLAs: introduction

Process goal

- SLAs measure the time to resolve from the point of view of the end user
  - SLA = Service Level Agreement
  - Time from creation to resolution
  - Target time to resolve depends on the Service and the Priority
- OLAs measure time for internal actions and groups
  - OLA = Operational Level Agreement
  - Internal : the end user does not care
  - Actions measured: time to take in progress + time to resolve or escalate, only for certain groups

© 2017 ServiceNow All Rights Reserved

SLAs and OLAs: introduction

Duration depending on Action + Contract + Category + Others

- Examples for Incident tickets

Contract	Time to Take In Progress	Work Effort
Service Desk	10 min	-
IT 2nd Line : ICT	2h	4h
IT 2nd Line : Telecom	10 min for high urgency 1h for normal urgency	3h
IT 2nd Line : Audiovisual	5 min for Live Event 2h for others	30 min for Live Event 4h for others

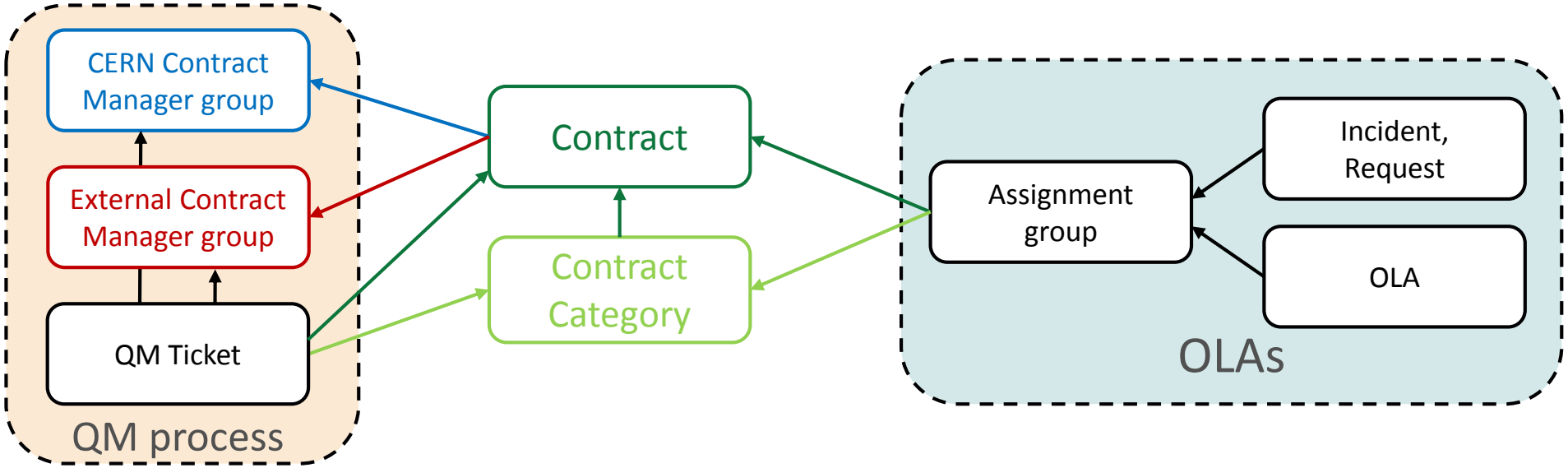
→ We need various OLA definitions depending on those factors

© 2017 ServiceNow All Rights Reserved

Contract table

Drives OLAs and the Quality Management process

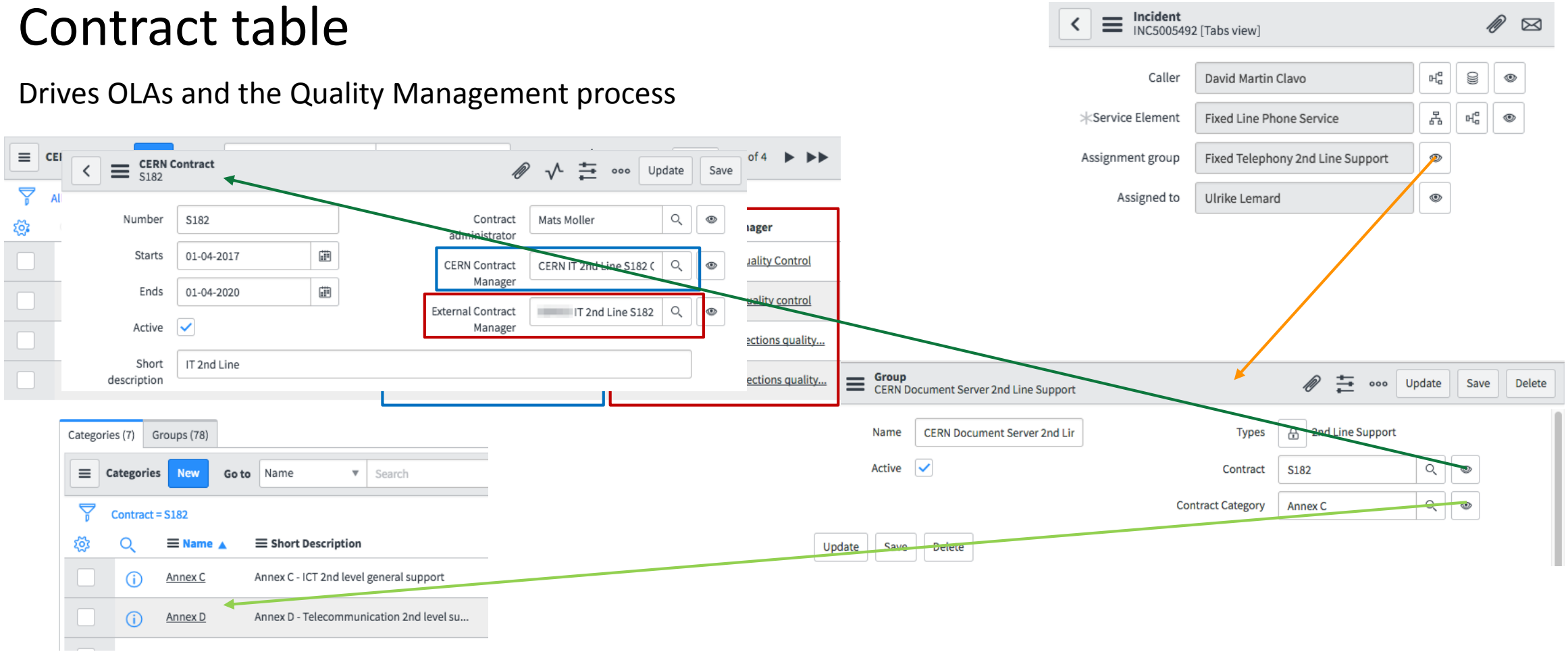
- List of contracts with external companies
  - Some contracts have categories for different groups of services
- Used by OLAs: contracts and categories referenced by assignment groups of Incidents and Requests.
- Used by Quality Management process : Contracts have a CERN Contract Manager group and an External Contract Manager group, used in Quality Management (cf. next section)



© 2017 ServiceNow All Rights Reserved

Contract table

Drives OLAs and the Quality Management process

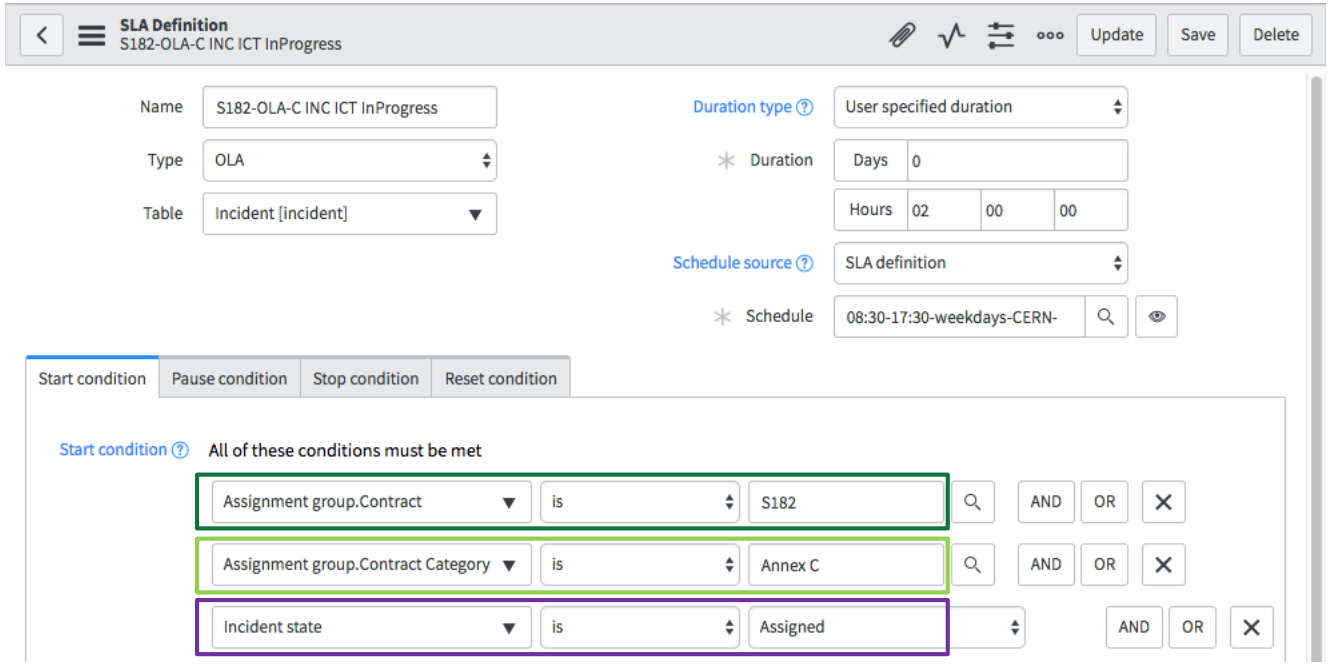


© 2017 ServiceNow All Rights Reserved

SLAs and OLAs: examples

Example OLA definition 1: Time to Take in Progress

- Measures time between:
  - Start : Ticket arriving to contractor group
  - End:
    - The state changes to “In Progress”, or
    - The ticket goes to a non-contractor group, or
    - The ticket goes to another contractor group with a different Contract Category
- Condition uses:
  - Contract
  - Contract category
  - State

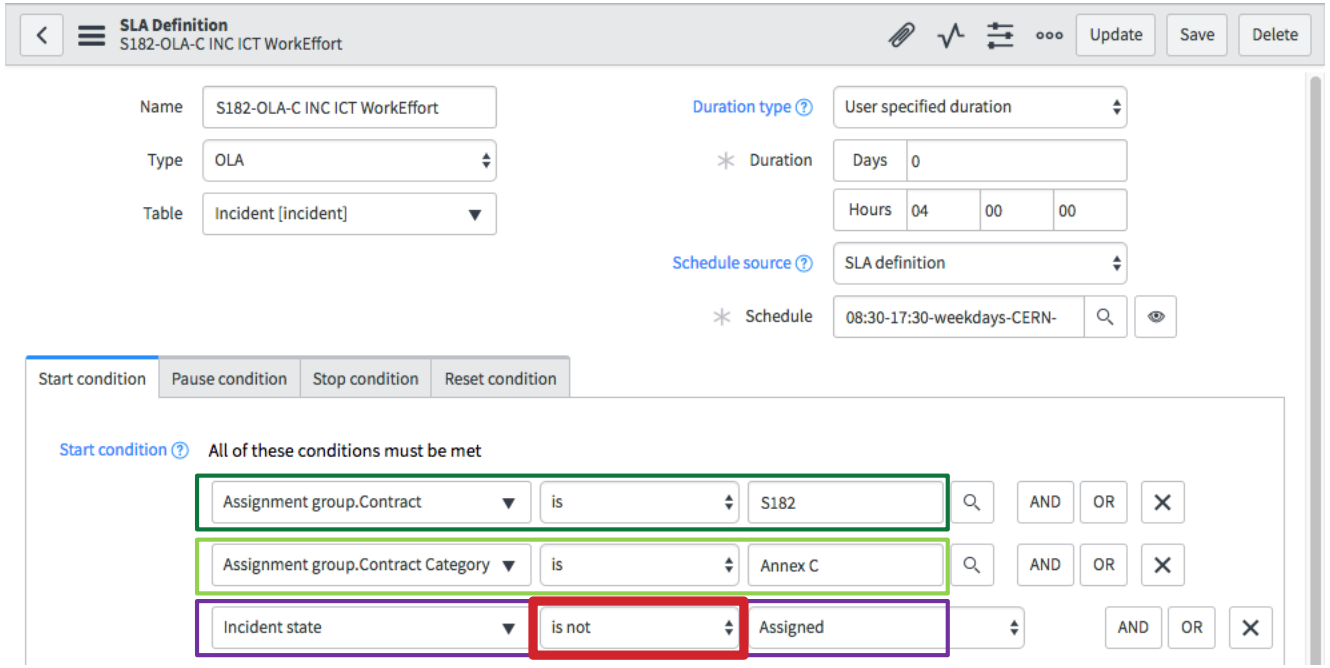


© 2017 ServiceNow All Rights Reserved

SLAs and OLAs: examples

Example OLA definition 2: Work Effort

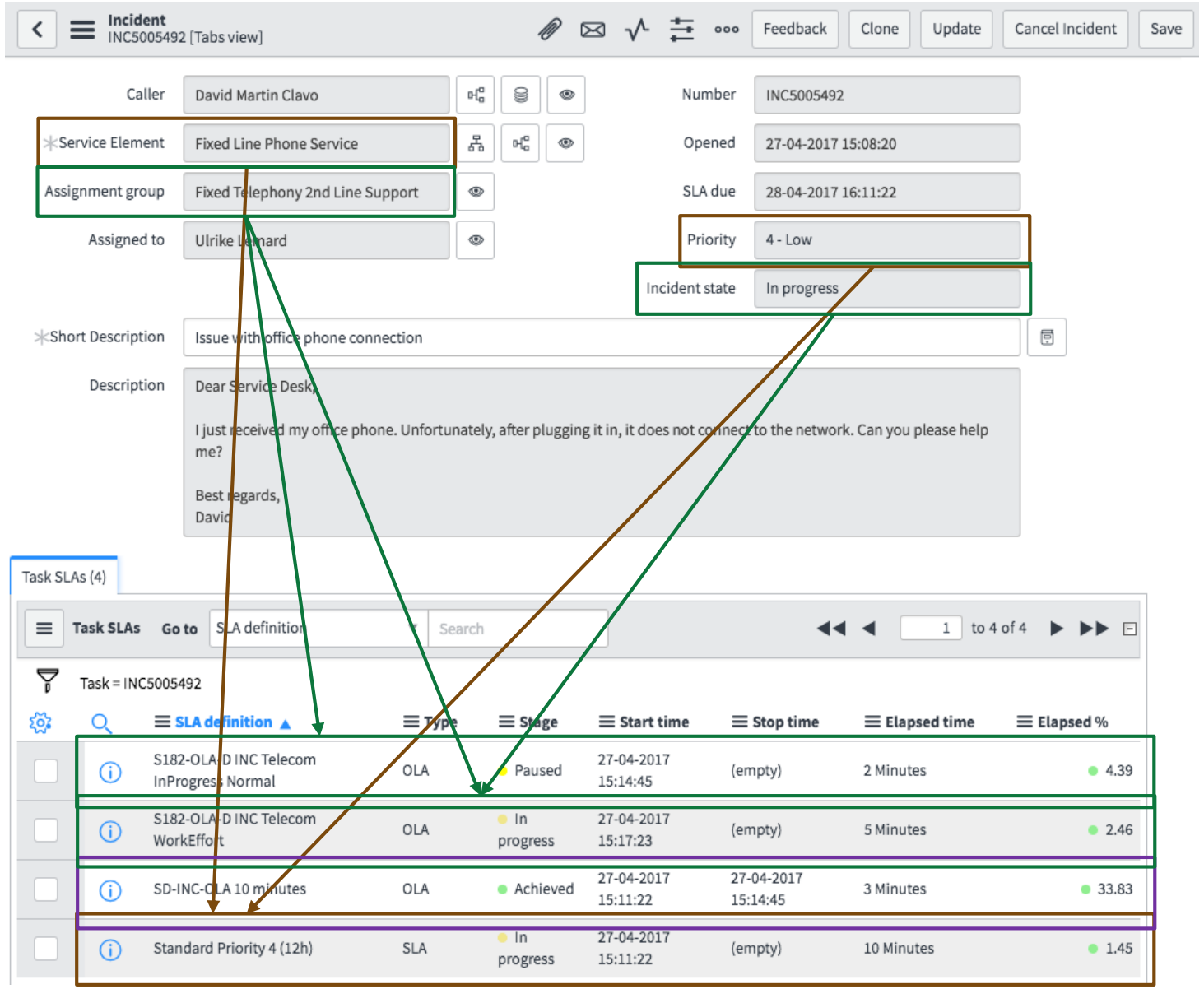
- Measures time between:
  - Start : Ticket arriving to contractor group and taken In Progress
  - End:
    - The ticket is Closed (definitely), or
    - The ticket goes to a non-contractor group, or
    - The ticket goes to another contractor group with a different OLA time “contract category”
- Condition uses:
  - Contract
  - Contract category
  - State



© 2017 ServiceNow All Rights Reserved

SLAs and OLAs

View inside ticket



© 2017 ServiceNow All Rights Reserved

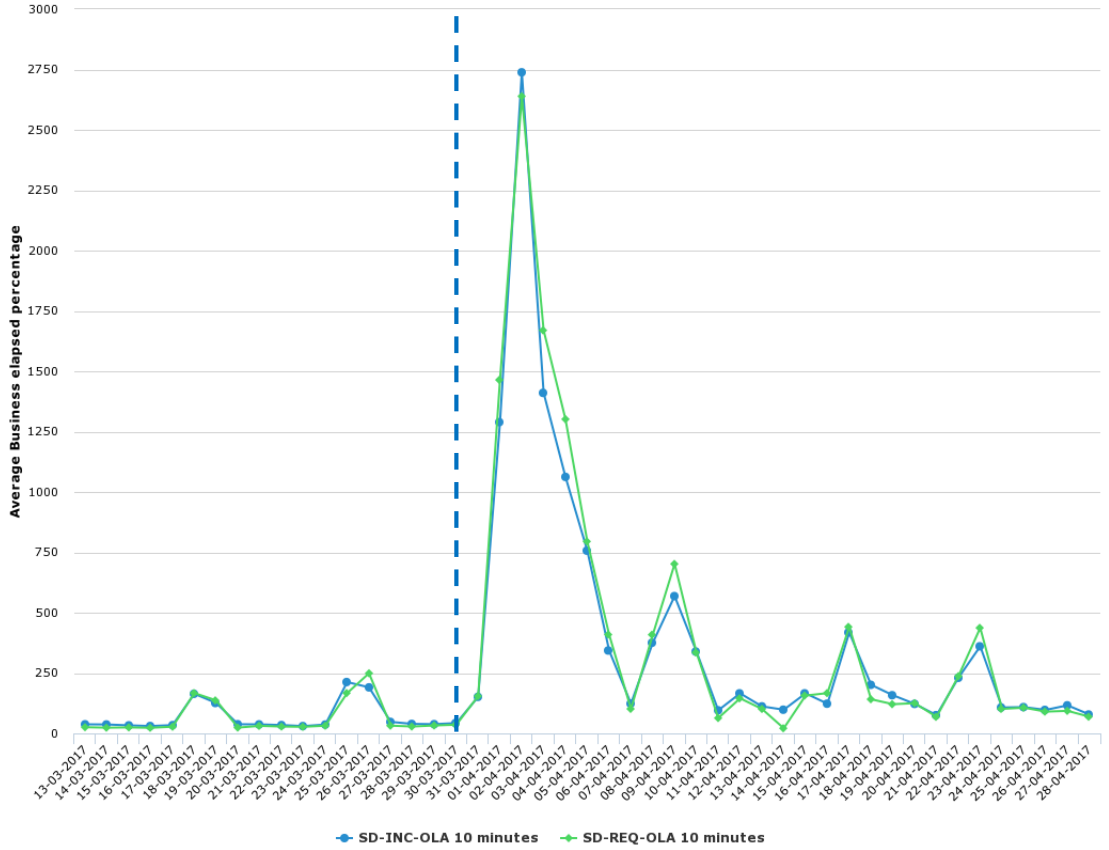
SLAs and OLAs: reports

Effect of new Service Desk team transition (short term)

Take In Progress OLA : Breached vs Non breached



Take In Progress OLA : time elapsed (100% = 10min)

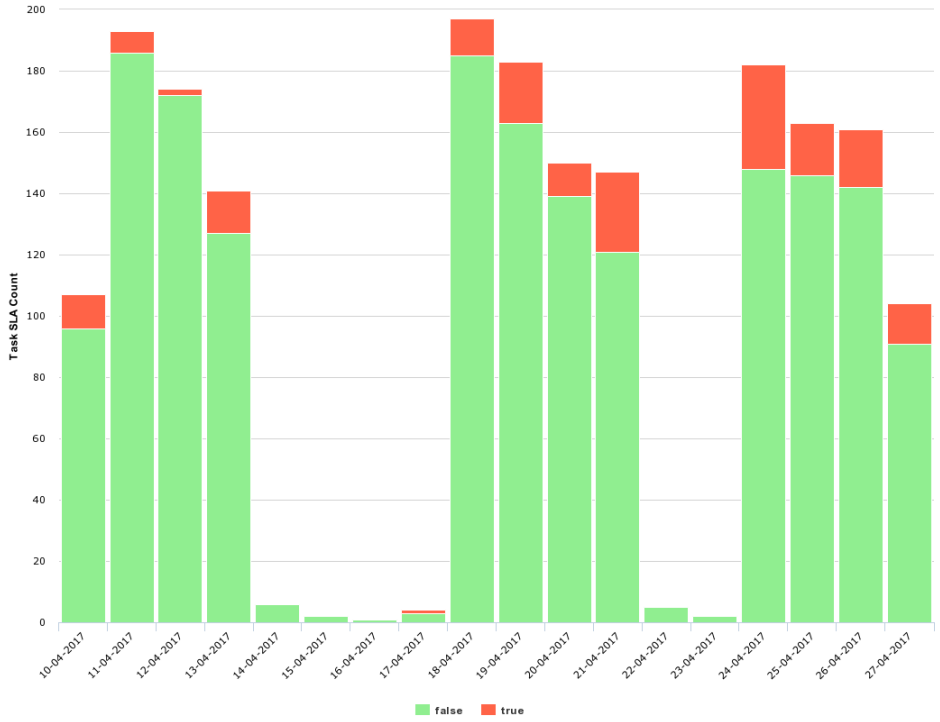


© 2017 ServiceNow All Rights Reserved

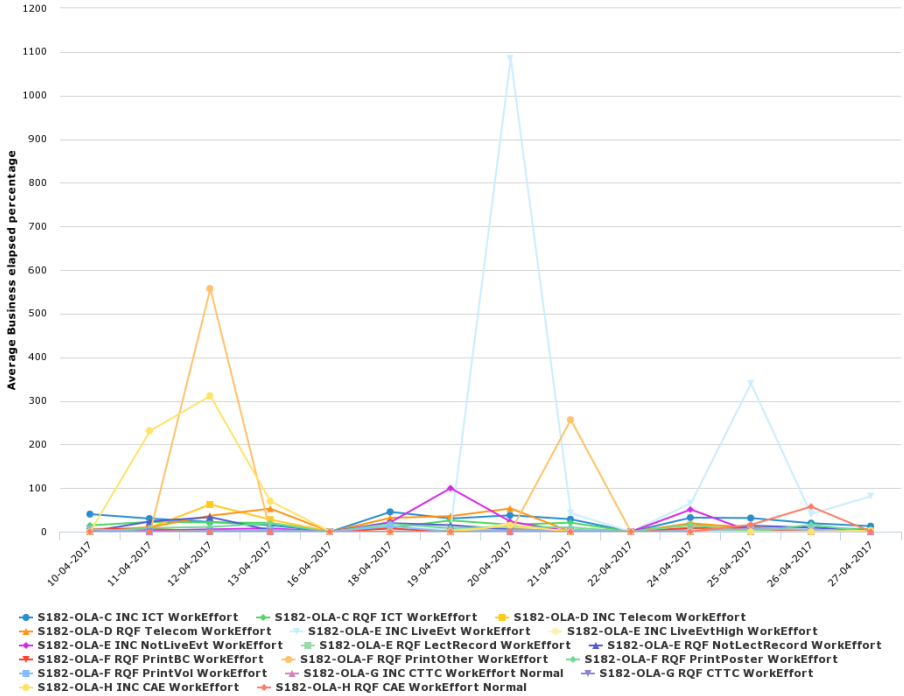
SLAs and OLAs: reports

New IT 2nd Line OLAs

Take In Progress OLA : Breached vs Non breached



Work Effort OLA : time elapsed (100% = 10min)



Take In Progress breaches by OLA

SLA definition	Has breached		
	false	true	Total
S182-OLA-C INC ICT InProgress	749	69	818
S182-OLA-C RQF ICT InProgress	502	14	516
S182-OLA-D INC Telecom InProgress Normal	41	10	51
S182-OLA-D RQF Telecom InProgress	31	15	46
S182-OLA-E INC LiveEvt InProgress	13	69	82
S182-OLA-E INC NotLiveEvt InProgress	66	10	76
S182-OLA-E RQF LectRecord InProgress	145	0	145
S182-OLA-E RQF NotLectRecord InProgress	89	1	90
S182-OLA-F RQF PrintBC InProgress	14	0	14
S182-OLA-F RQF PrintOther InProgress	3	0	3
S182-OLA-F RQF PrintPoster InProgress	24	0	24
S182-OLA-F RQF PrintVol InProgress	33	2	35
S182-OLA-H INC CAE InProgress	11	0	11
S182-OLA-H RQF CAE InProgress Normal	17	0	17
Total	1,738	190	1,928

© 2017 ServiceNow All Rights Reserved

1. About CERN
2. Ticket Feedback
3. SLAs and OLAs

4. Quality Management

5. Conclusion

© 2017 ServiceNow All Rights Reserved

Quality Management

Process goal

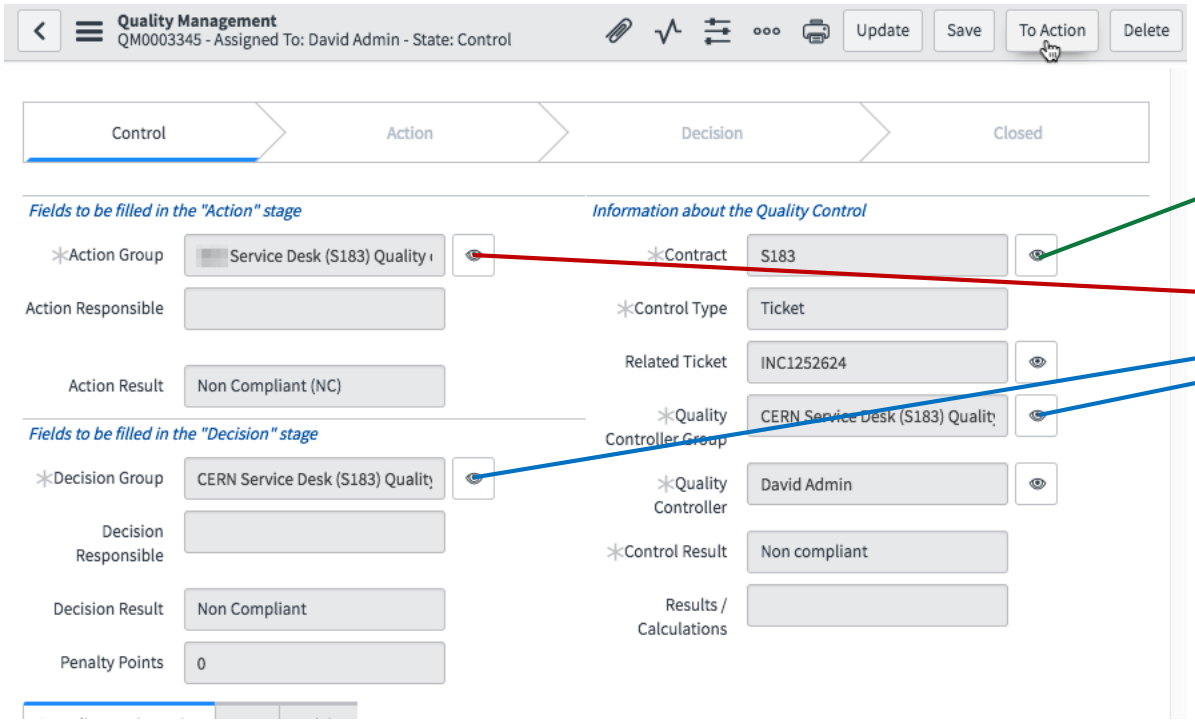
- The Quality Management process aims to ensure that the work done by the contractors is of proper quality:
  - Correct classification : service, support team, impact, urgency…
  - Adequate solution or redirection
  - Timely handling
  - Follow the CERN procedures correctly
  - Good communication : politeness, correct English / French.
  - Proper usage of existing knowledge
- Quality Management (QM) tickets represent a case analysis. The analysis result can be:
  - **Compliance**: all OK; good job!
  - Or **non-compliance**: may result in warning, re-training, penalties, sanction.

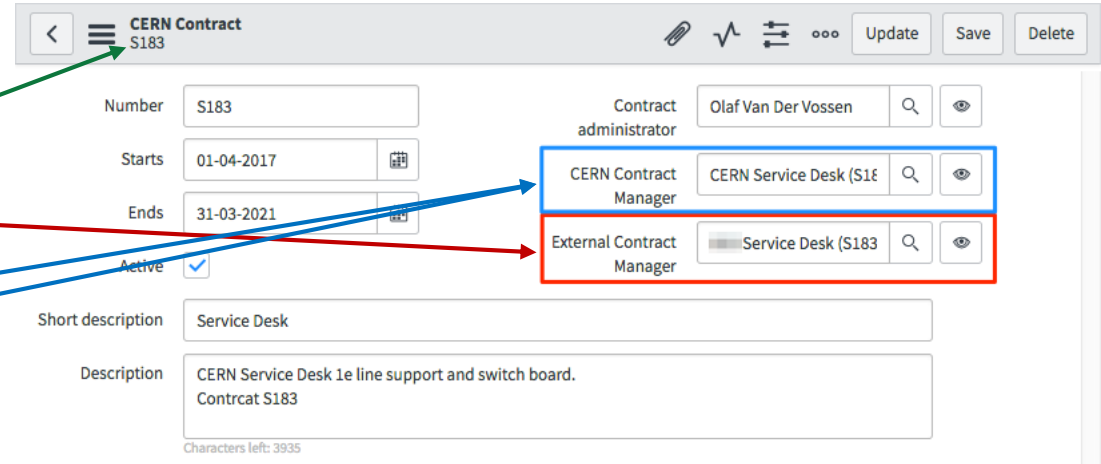
© 2017 ServiceNow All Rights Reserved

Quality Management

Roles involved

- Driven by contract table
  - QM Tickets relate to a Contract
  - Each contract has a CERN Contract Manager and an External Contract Manager which can act on the ticket



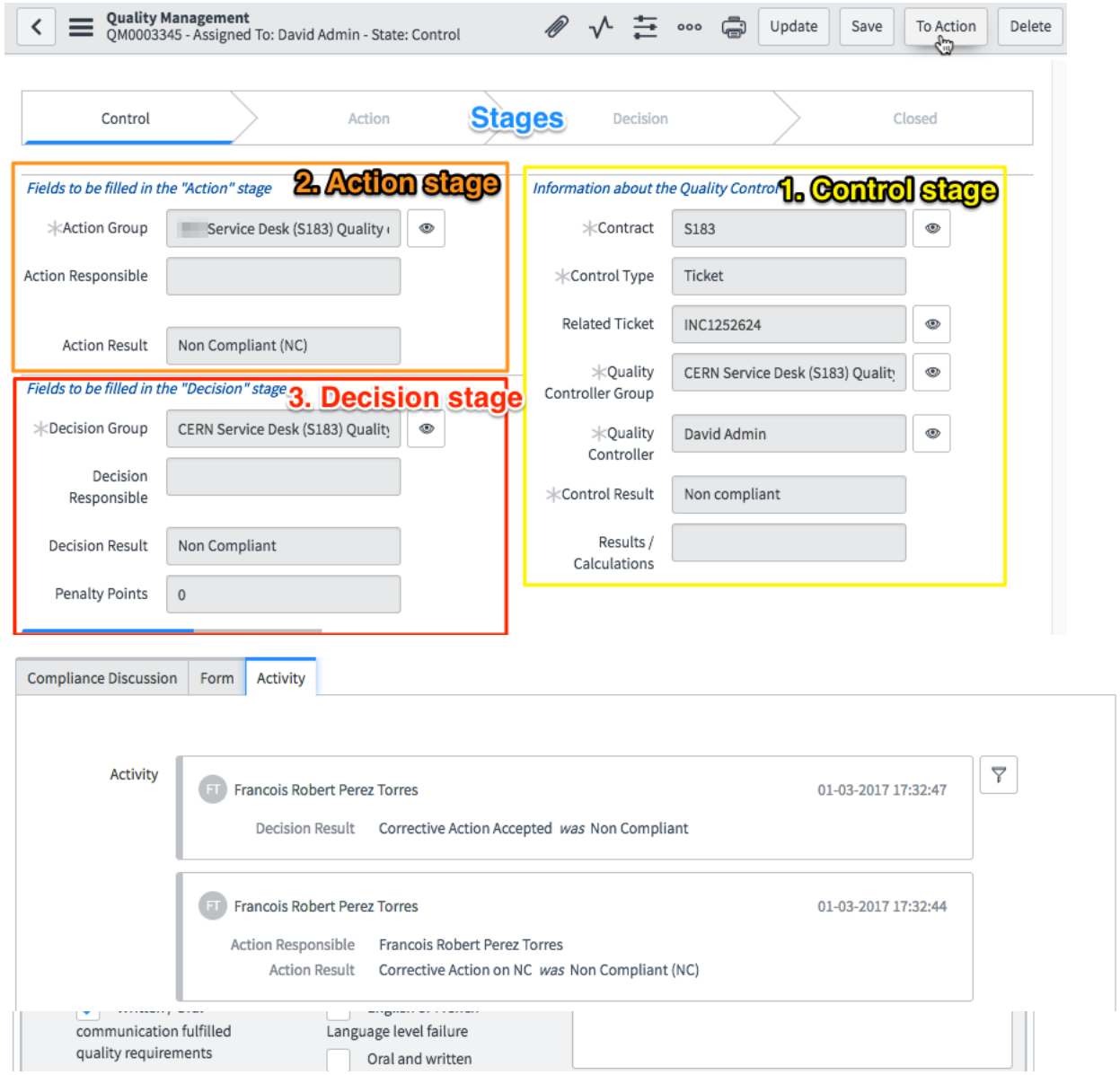


© 2017 ServiceNow All Rights Reserved

Quality Management

Stages and sections

- Stages of a Quality Management ticket
  1. **Creation** via Record Producer:
     by CERN Contract Manager / External Contract Manager
  2. **Control** by
     CERN Contract Manager / External Contract Manager
  3. **Action**: by External Contract Manager always
  4. **Decision**: by CERN Contract Manager always
  5. **Closure**: by CERN Contract Manager always
- Form Sections
  - Discussion
  - Record Producer Variables
  - Activity

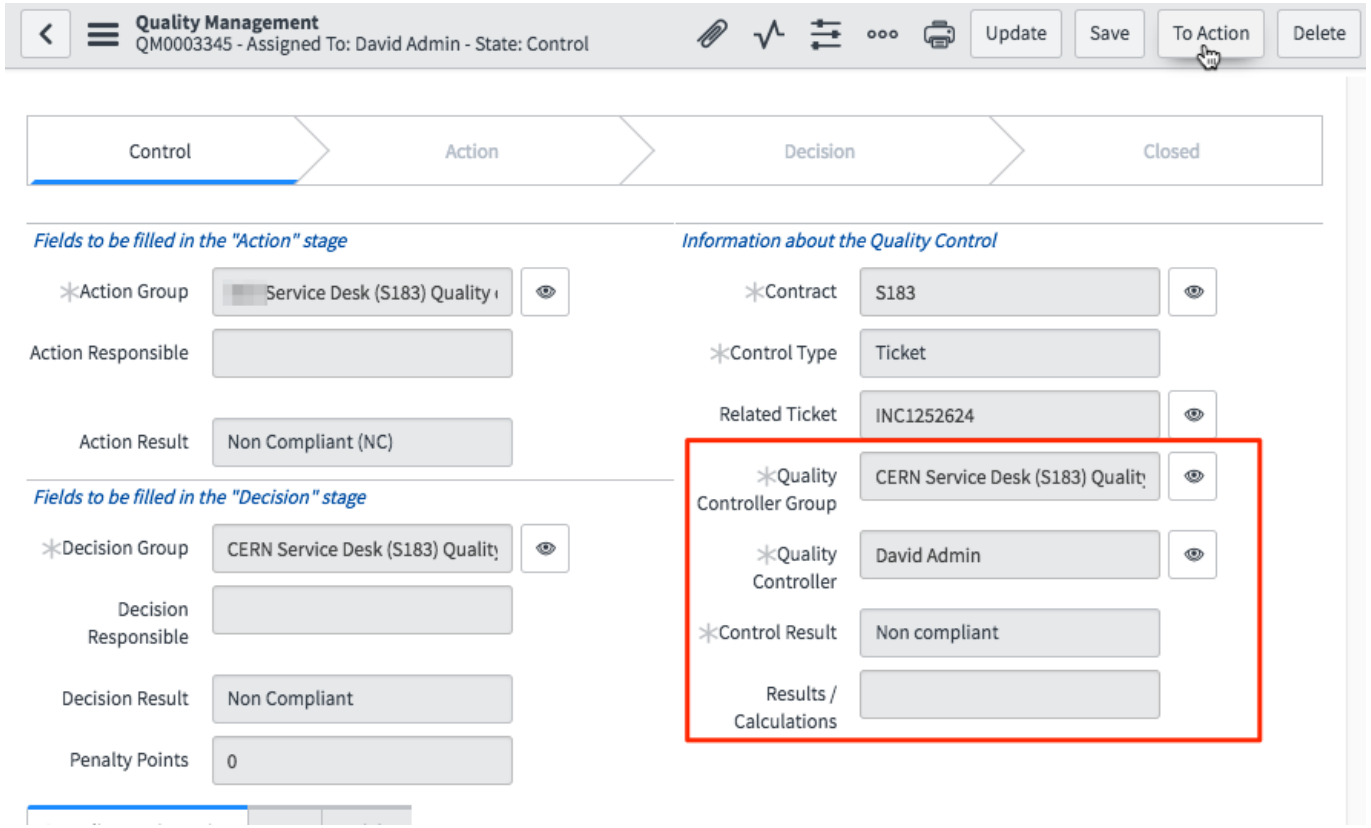


© 2017 ServiceNow All Rights Reserved

Quality Management

Control stage

- Responsible: External Contract Manager (standard process) or CERN Contract Manager (reactive process)
- Result is pre-calculated by the Record Producer
- Any additional comments can be added in the **Compliance Discussion** tab.
- **To Action** button sends ticket to Action Stage

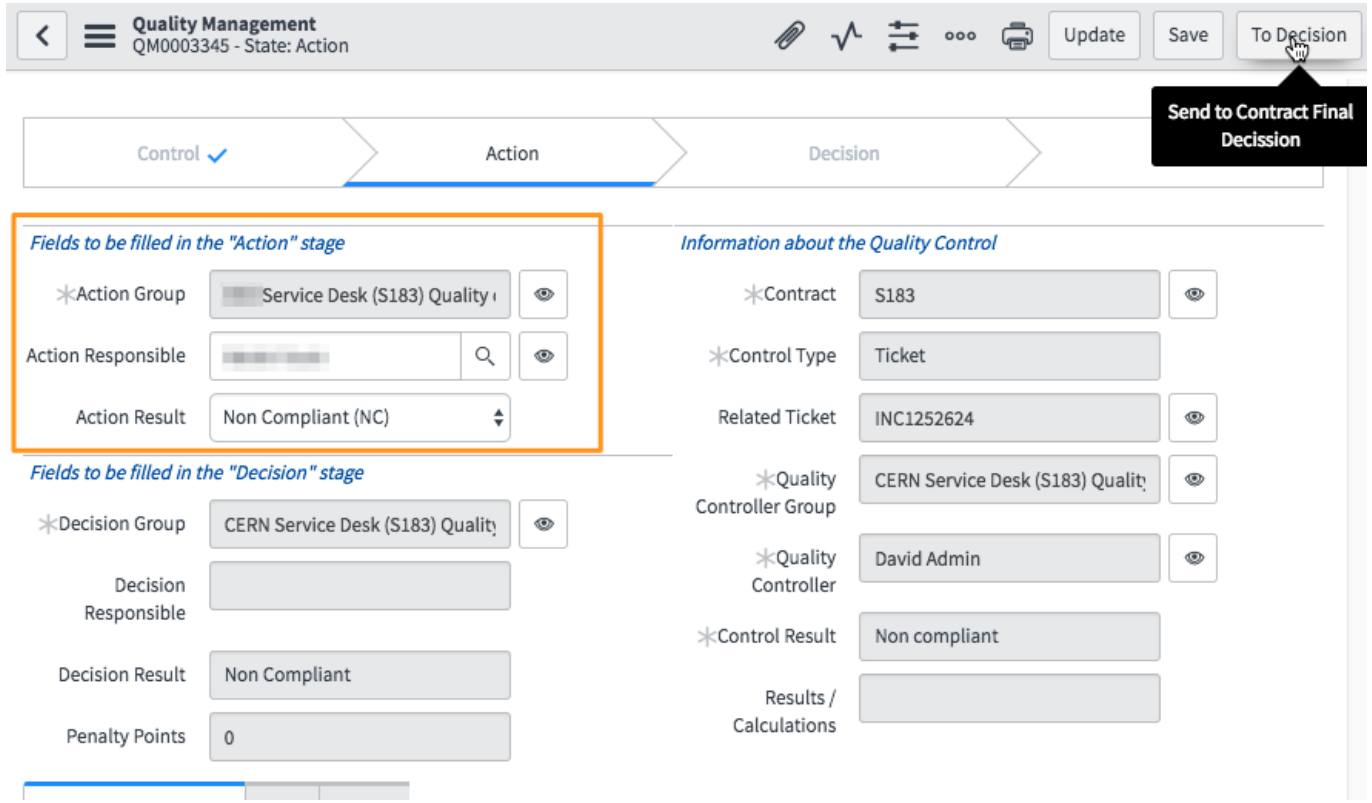


© 2017 ServiceNow All Rights Reserved

Quality Management

Action stage

- Responsible: always the External Contract Manager , no matter the process type
- The External Contract Manager may take any needed **corrective action** offline, such as:
  - Agent re-training
  - Warning, sanction
- Any additional comments can be added in the **Compliance Discussion** tab.
- **To Decision** button sends ticket to Decision Stage

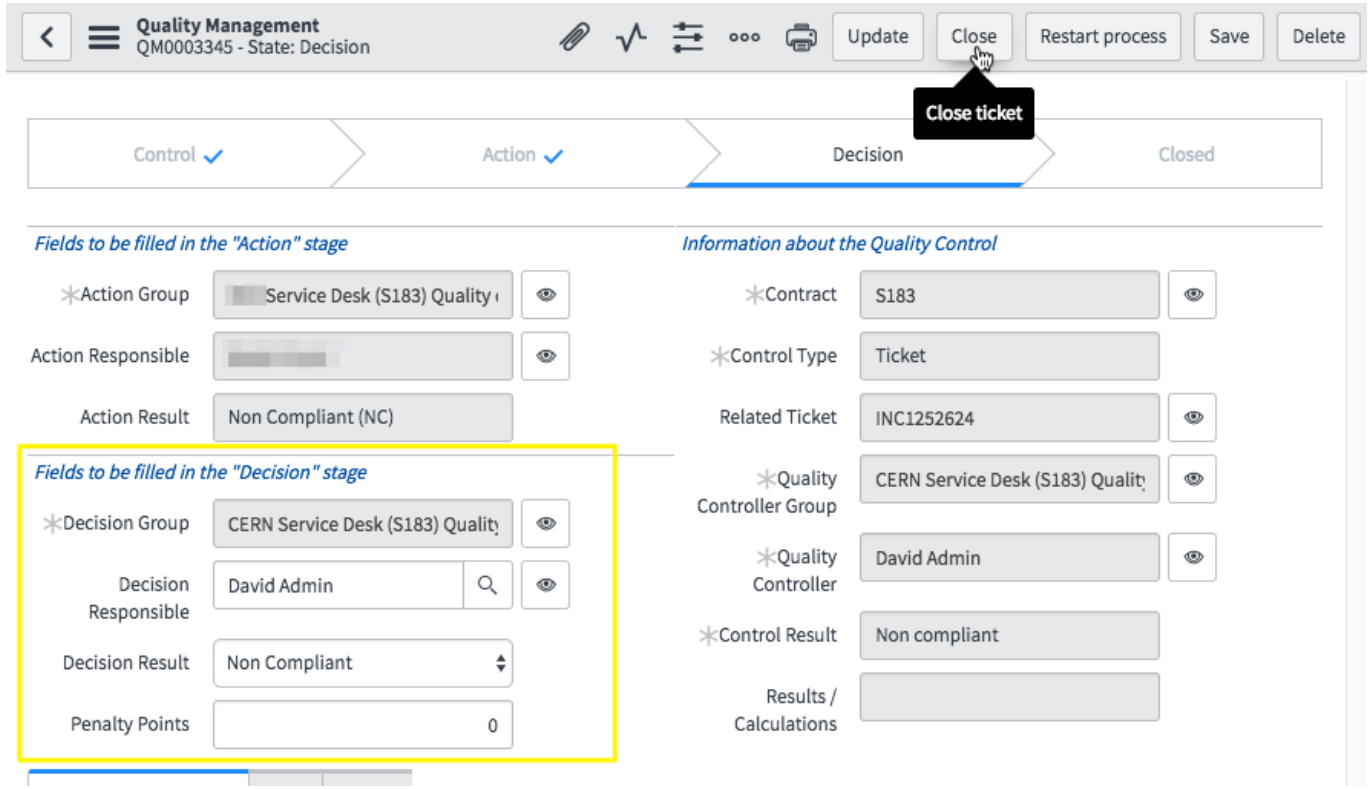


© 2017 ServiceNow All Rights Reserved

Quality Management

Decision stage

- Responsible: always the CERN Contract Manager, no matter the process type
- The CERN Contract Manager reviews the whole quality assessment and takes the final decision on whether the related incident / request handling was compliant or non-compliant.
- Any additional comments can be added in the **Compliance Discussion** tab.
- **Close** button finalizes the process.



© 2017 ServiceNow All Rights Reserved

Quality Management

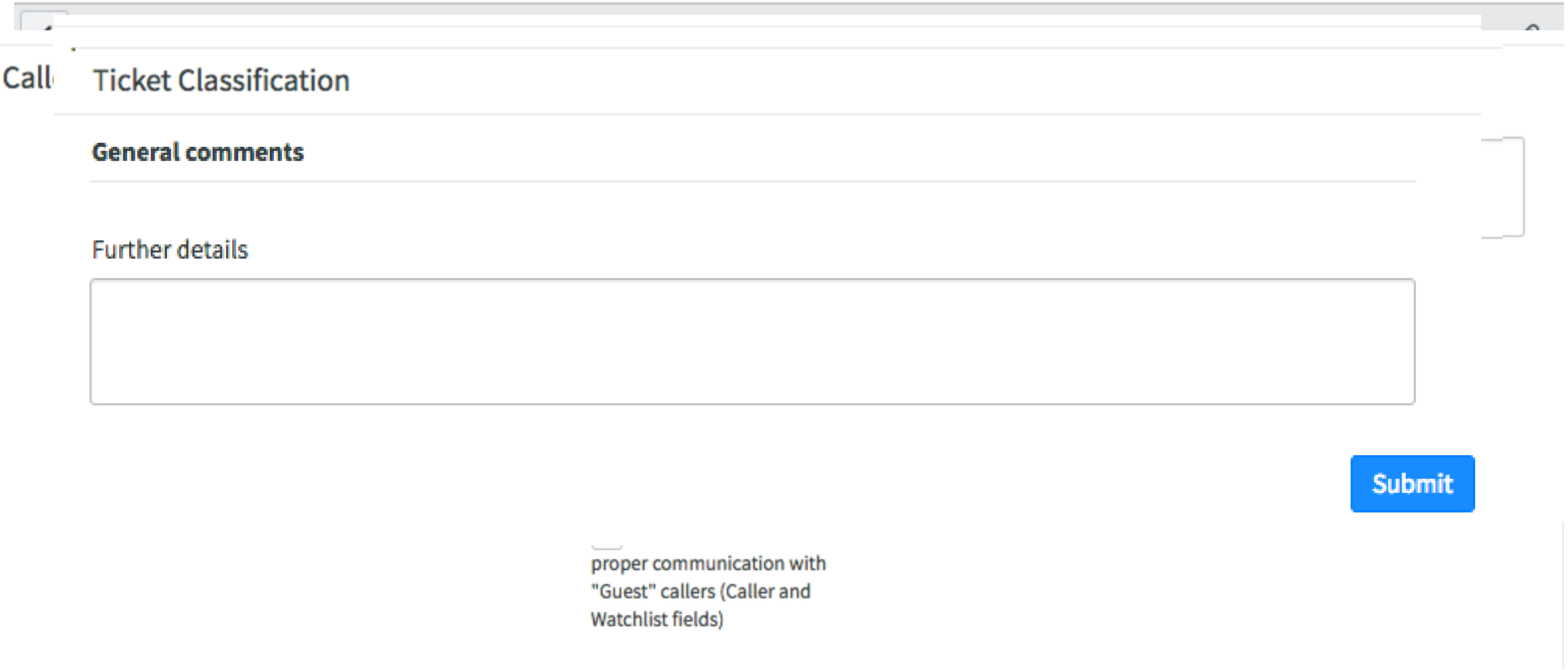
Use Cases

- Service Desk: standard process
  - **Creation** and **Control:** External
  - **Action**: External
  - **Decision** and **Closure**: CERN
- Service Desk: reactive process
  - **Creation** and **Control:** CERN
  - **Action**: External
  - **Decision** and **Closure**: CERN
- IT 2nd Line
  - **Creation:** CERN
  - **Control** and **Action:** skipped
  - **Decision** and **Closure**: CERN
- Cleaning service: compliance found
  - **Creation:** CERN
  - **Control** and **Action:** skipped
  - **Decision** and **Closure**: CERN
- Cleaning service: non-compliance found
  - **Creation:** CERN
  - **Control:** skipped
  - **Action:** External
  - **Decision** and **Closure**: CERN

© 2017 ServiceNow All Rights Reserved

Quality Management

Creation record producer : Service Desk contract



© 2017 ServiceNow All Rights Reserved

Quality Management

Creation record producer : IT 2nd Line contract

Possible failures

▶ More information

- [ ] Solution provided by Contractor was WRONG
- [ ] Documentation/information was already provided to the contractor (e.g KB article is available) but was NOT used
- [ ] Ticket escalation is not correct (wrong FE)
- [ ] Problem description is not good enough before ticket escalation (lack of analysis / investigation / interaction with user for clarification)
- [ ] Contractor has not correctly followed procedures provided by CERN
- [ ] Contractor has not understood the issue reported by the Caller
- [ ] Written communication issue (politness, bad English / French, etc.)
- [ ] Other (not in the list)

✳ Comments (mandatory)

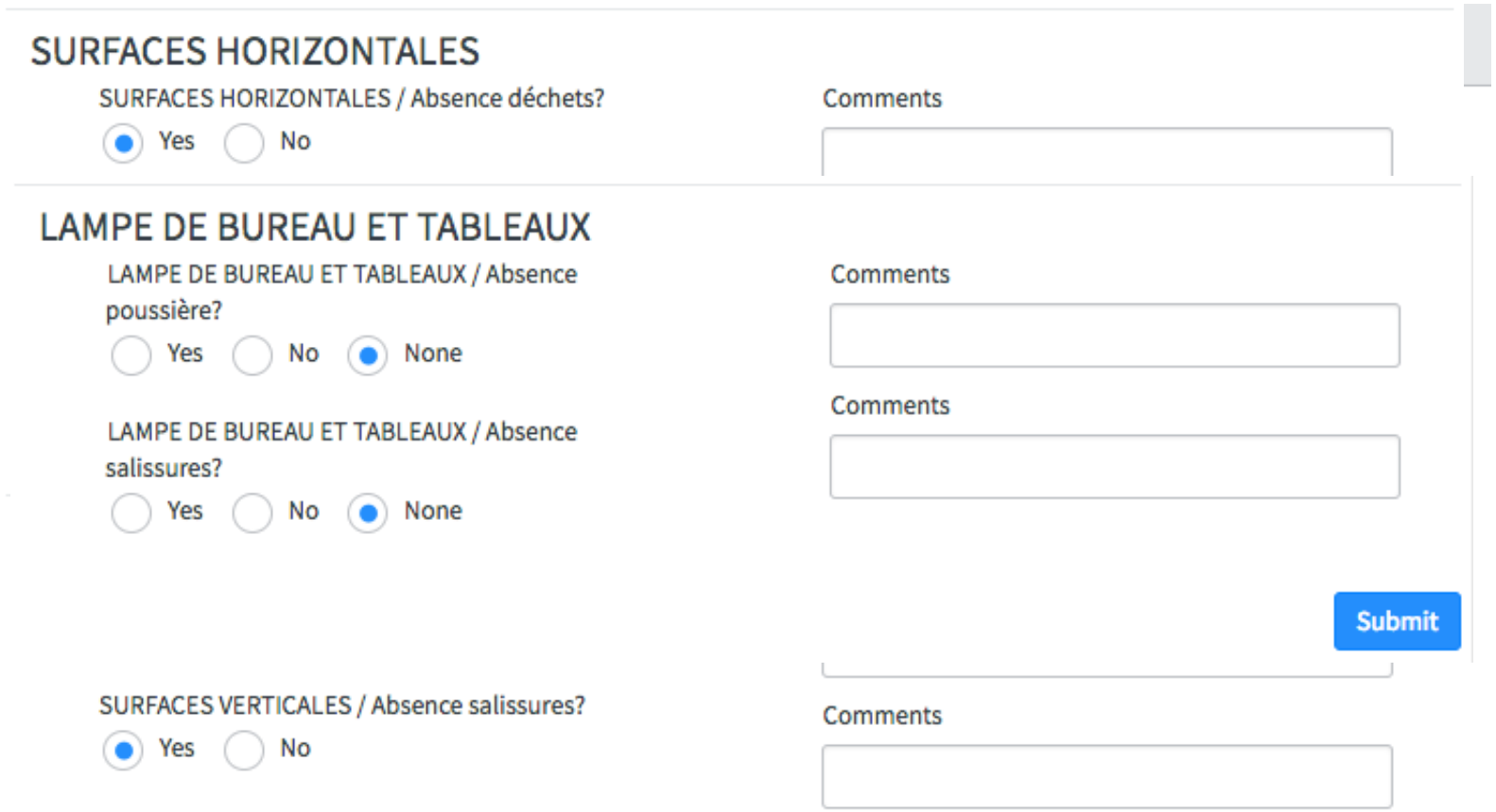
▶ More information

Submit

© 2017 ServiceNow All Rights Reserved

Quality Management

Creation record producer : Cleaning Service

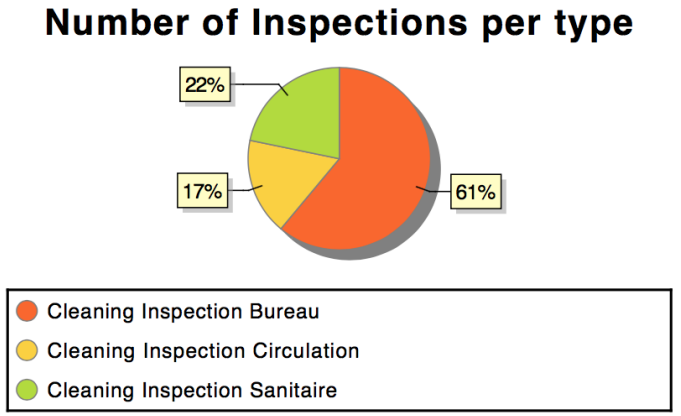


© 2017 ServiceNow All Rights Reserved

Quality Management

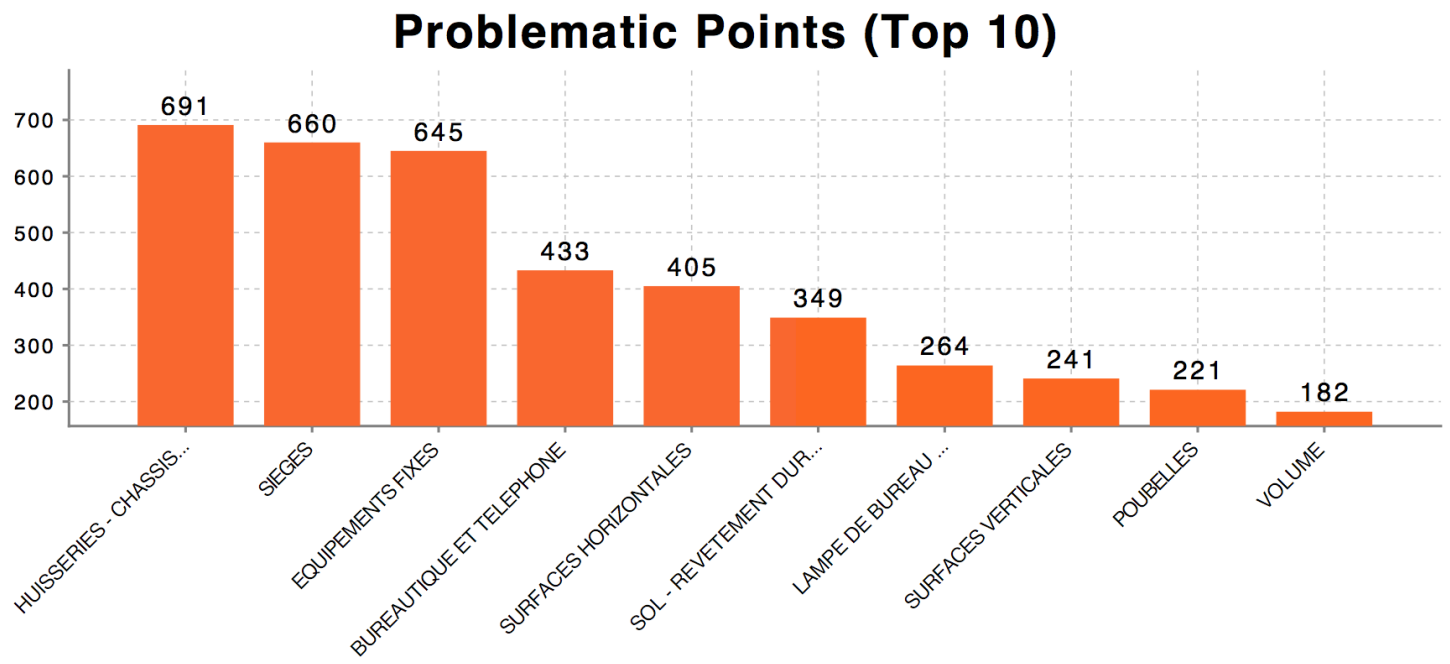
Report example

- Quality Management tickets are exported to Oracle in real-time via Perspectium Replicator
- A Pentaho dashboard has been built for the Cleaning Service managers.



Inspection Type	Nb.	OK	Not OK	OK %	Surface	Avg. Res
Cleaning Inspection Bureau	1608	1320	288	82.09%	60,770	0.82
Cleaning Inspection Circulation	452	411	41	90.93%	24,223	0.84
Cleaning Inspection Sanitaire	573	319	254	55.67%	4,992	0.83
	2633	**2050**	**583**		**89,985**	

Cleaning Inspection Bureau



© 2017 ServiceNow All Rights Reserved

1. About CERN
2. Ticket Feedback
3. SLAs and OLAs
4. Quality Management

5. Conclusion

© 2017 ServiceNow All Rights Reserved

Lessons Learned

1. Users should have a simple and engaging way to provide feedback
2. Start with a few, simple KPIs. Make sure you use them before introducing others
3. Need to think about what to measure before writing the call for tender / request for proposals.

© 2017 ServiceNow All Rights Reserved

Our Next Steps

- Closely monitor the KPIs for the 2 new contracts
- Work with contractors to improve quality using the QM process
  - Understand and fix root causes
  - Penalties if no action
- Keep fine-tuning OLAs
- Onboard new contracts into the framework
- Expand reports

© 2017 ServiceNow All Rights Reserved

Top Takeaways

1

Make it easy and engaging for users to give feedback.

2

ServiceNow's OLAs enable you to measure contractor performance.

3

You can use ServiceNow's flexibility to implement your own quality process

© 2017 ServiceNow All Rights Reserved

Q & A

David Martin Clavo
Software Engineer and ServiceNow Team Leader
IT Department
CERN

© 2017 ServiceNow All Rights Reserved

Take the Survey

Please take a moment to complete a session survey in the Knowledge17 app.

Thank You

David Martin Clavo

Software Engineer and ServiceNow Team Leader
IT Department

CERN

© 2017 ServiceNow All Rights Reserved