



# Continuous Service Improvements at CERN IT

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## Background and Motivation

- Using the framework of **ITIL (Information Technology Infrastructure Library)** best practises, the service managers within CERN-IT have engaged into continually improve the effectiveness and efficiency of IT processes and services.
- This experience is based on the **IT Platform and Engineering Services –group** at CERN where we find a wide range of services:
  - Grid services, engineering software, general computing services (SVN, git, LXPLUS, batch) and Twiki.
- Motivation:**
  - Volume of **~90 tickets** (incidents and requests) reported each week.
  - Routine tasks where most could have been solved by non-experts.
  - The ticket handling tool was changed at CERN in 2010. We took the opportunity to change habits, to influence the tools evolution and to develop commonalities across our services

## Analyse

- Analyse and study the measurements to improve the services



- Patterns identified and root cause found
- In which area is the effort needed?**

Improve documentation, provide training, automatize, implement monitoring, update service catalogue, etc..

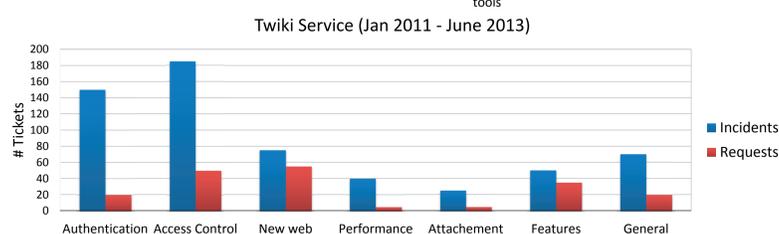
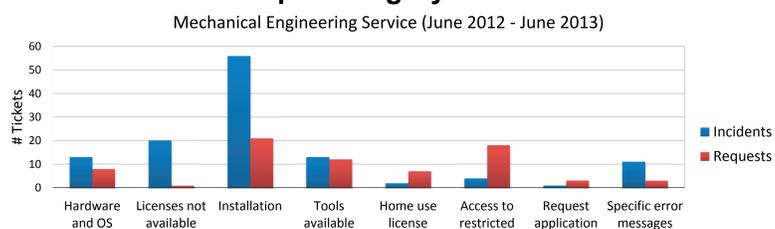
**Detect problems before the users do!**

## Define requirements

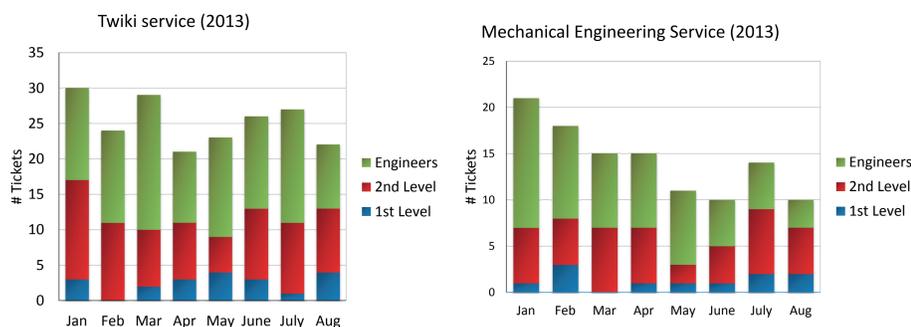
- Adapt to ITIL oriented processes and tool (SNOW).
  - Share experts' knowledge among the team members.
  - Ensure that the support levels are trained and equipped.
  - Decrease the ticket amount and reduce ticket solution time.

## Measure

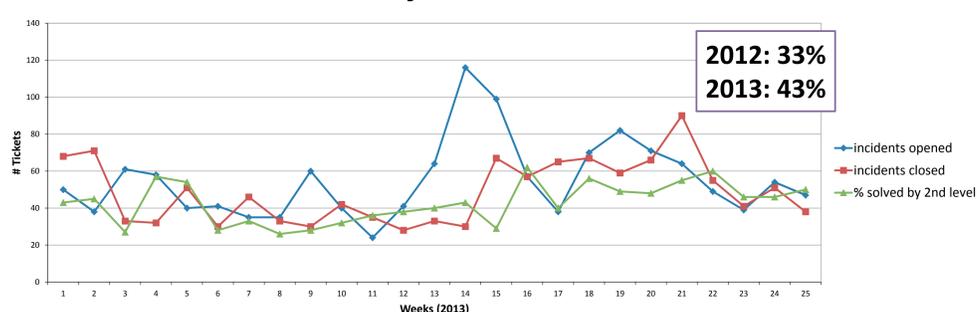
- Number of tickets per category:**



- Number of tickets solved by support levels:**



- The % of incidents solved by the 2<sup>nd</sup> level team, 2013:**



## Implement

- We have implemented **4 levels of support:**

**1<sup>st</sup> level: Service Desk**  
CERN wide Service desk.  
Ticket assignment and make sure all needed information is there

**2<sup>nd</sup> level: IT Helpdesk**  
IT specific Helpdesk,  
Most services go through them

**3<sup>rd</sup> level: Service Manager rota**  
1 service manager (engineer) on duty per week for all services

**4<sup>th</sup> level: Experts**  
Engineer level service managers, 1-2 per service

- Review meetings:
  - The 2<sup>nd</sup> level and the engineering levels** meet once per week to review and analyse open tickets (~90)
  - Recurrent incidents** are being monitored so the root cause is found and fixed.
  - Output** of the meetings is then assigned to support service teams (E.g. improve documentation, provide training)

Number	Short Description	Assignment group	Task type	Incident state (Incident)	Request State (Request Fulfillment)
RIC503090	help with Ansys	Mechanical_Engineering_tools_3rd_Line_Su...	Incident	Assigned	
RIC502117	Re: opera installation	Mechanical_Engineering_tools_2nd_Line_Su...	Incident	Resolved	
RIC5024571	Ansys support	Mechanical_Engineering_tools_2nd_Line_Su...	Request Fulfillment		Waiting for user
RIC506997	SolidWorks: PCTE23012	Mechanical_Engineering_tools_2nd_Line_Su...	Incident	Resolved	
RIC5030920	to install Matlab and SolidWorks	Service_Desk	Request Fulfillment		Resolved
RIC5023650	new computer	Mechanical_Engineering_tools_3rd_Line_Su...	Request Fulfillment		Waiting for user
Functional Element: Message Broker Infrastructure (1)					
Functional Element: Twiki (3)					
Functional Element: Version Control Systems (42)					
Functional Element: VOB infrastructure support (2)					
Functional Element: VOMS (6)					

- Annual ticket review:
  - Categorization** of all incidents and requests.
  - Done by service providers