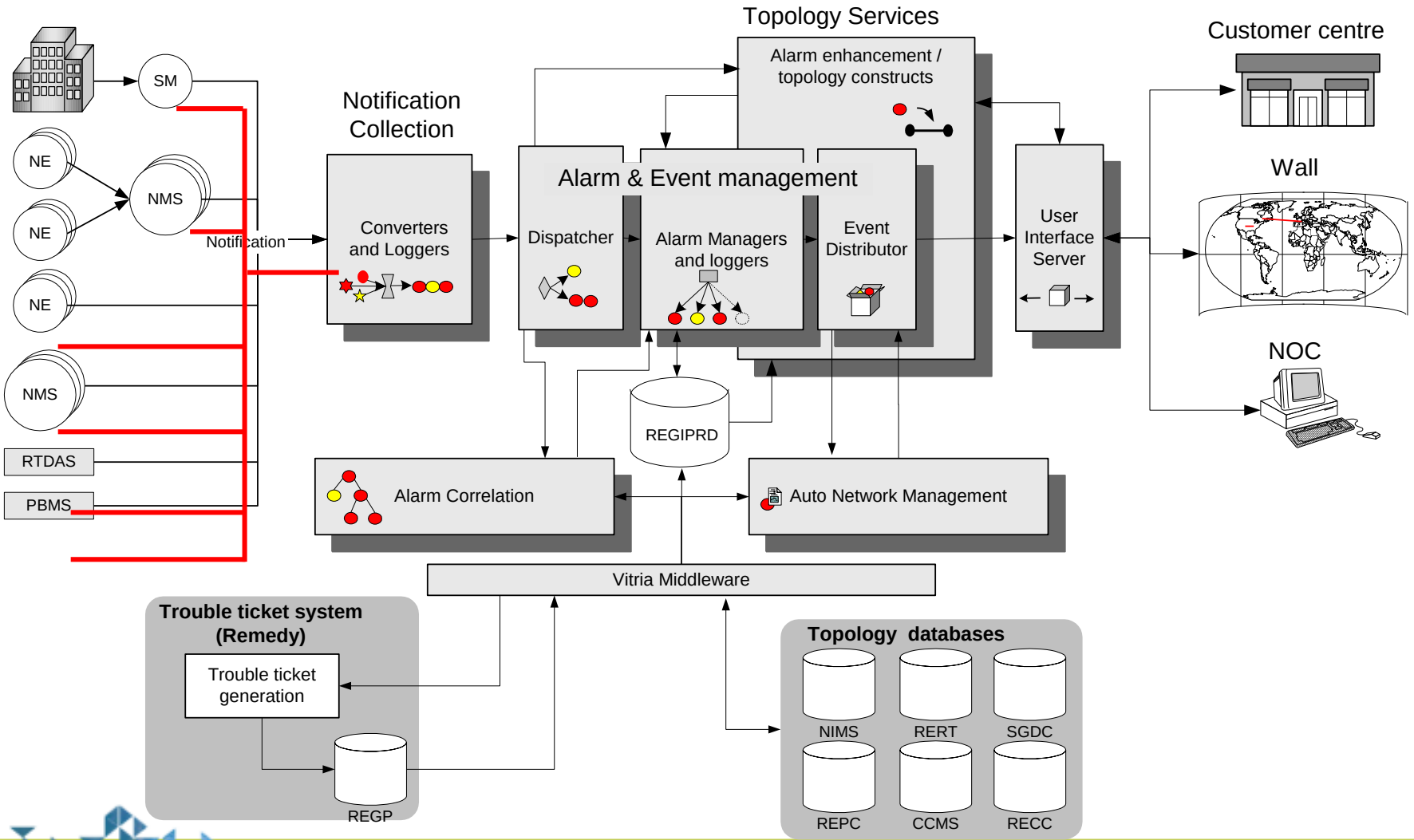
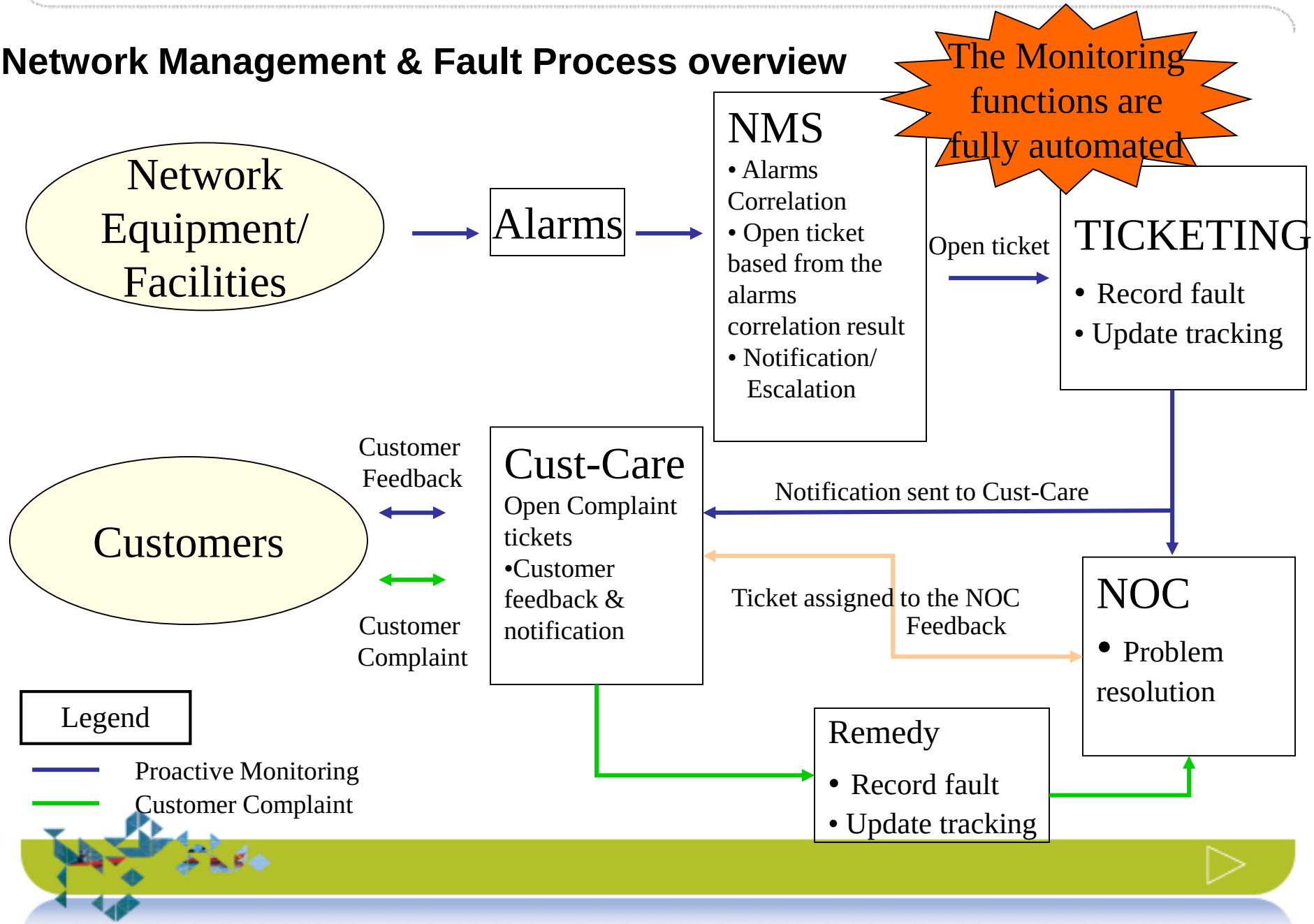
Training objective

- Tata Communications IP Network Surveillance & Monitoring Process.

Monitoring system – Functional Architecture



Network Management & Fault Process overview



Systems description

- **Network Inventory Management System**

  Inventory of both equipments and circuits. NIMS is used by Provisioning to design circuits and services against available equipment and capacity. NIMS feeds CNMS for alarm identification and correlation, and provide all the necessary information to troubleshoot problems. NIMS is linked with other systems: Oracle Financial for equipment PO matching/tracking and other relatedfunctions

- **REMEDY (Fault Ticketing System)**

  Application used by the NOC and all Field OPS personal to capture and document information related to problem investigation (Customers or Backbone). Customer service (GCSC) is also using it through an overlap built in application (presentation screens were built in front of Remedy to provide a more customer care view). Remedy is also used to Manage all Change Management activities and host customers Contact for events notifications. Remedy is linked with: NIMS, Order mamangement and NMS.

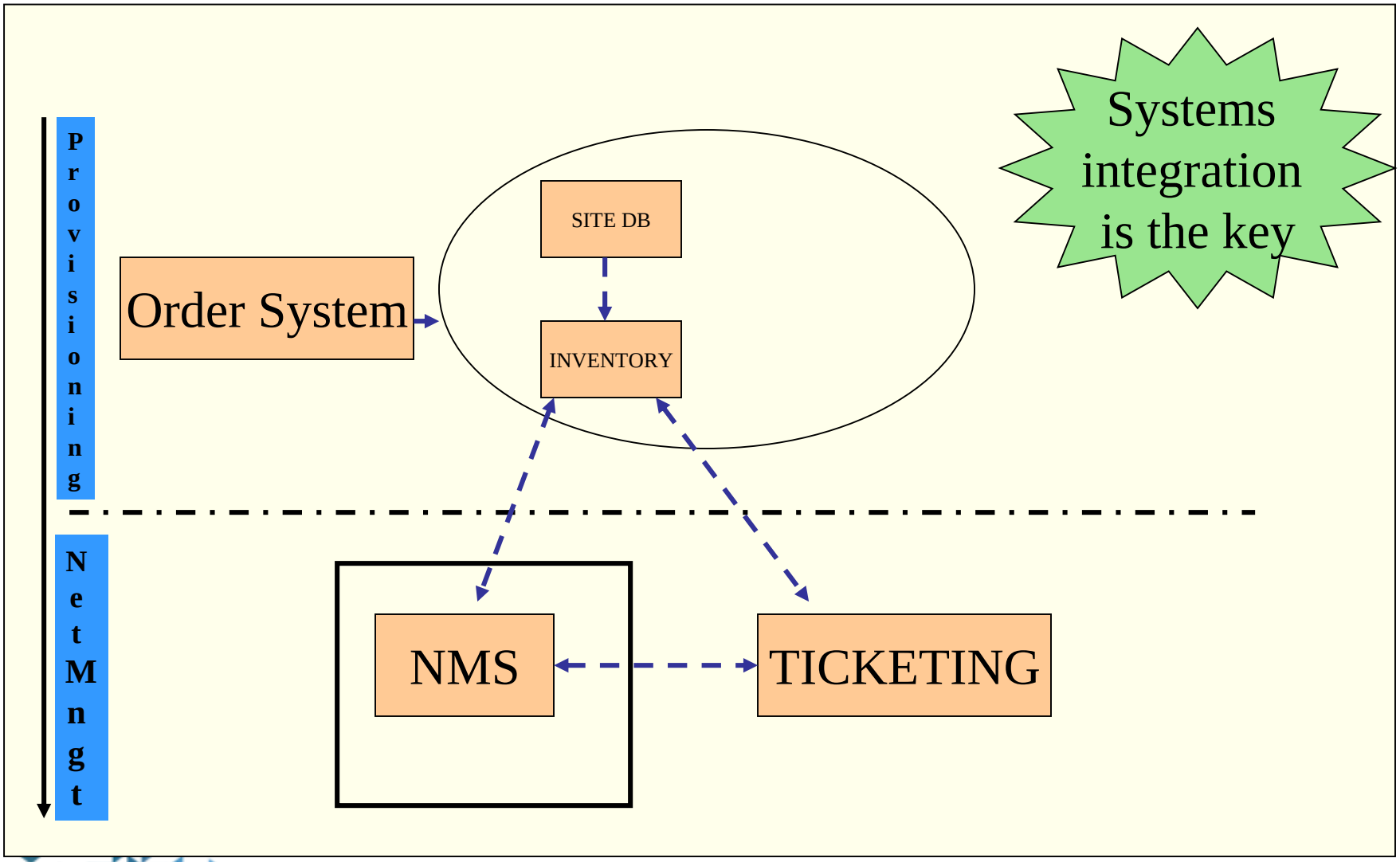
- **Centralized Network Management system**

  Global Network monitoring system that receive alarms, correlate and open Remedy trouble tickets automatically. CNMS also feature other tools utilized in problem investigation (i.e. circuit browser, historical/trending, Cotact management system etc)

- **NOC-Interface-GUI**

  It is a graphical tool allowing the analysis of the Internet traffic. It also provide various information such as the interface state, CPU utilization and traffic graph.

Systems high level overview



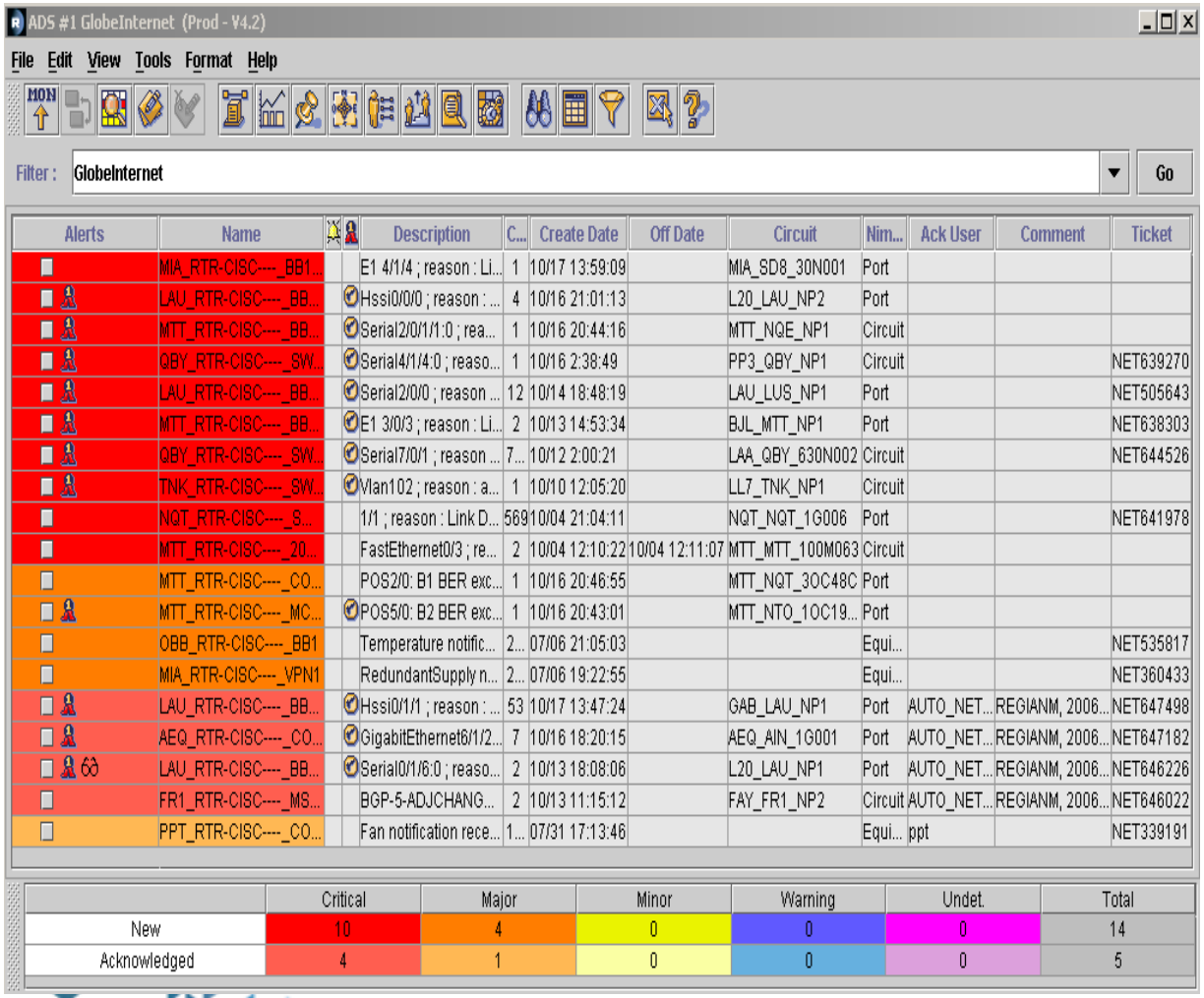
Network Management concept

The Network Management start at the provisioning stage

- Data fill of database information in the Network Inventory Management System
  - ✓ Sites Code ()
  - ✓ Equipments (utilized for asset tracking & inventory)
  - ✓ Customer ID
  - ✓ Circuit Order (routing, configuration information & technical spec.)

- These information will be utilized at the Post Service stage
  - ✓ Network monitoring
  - ✓ Problem resolution
  - ✓ Customer notification

NMS – ADS screen display rules and columns definition



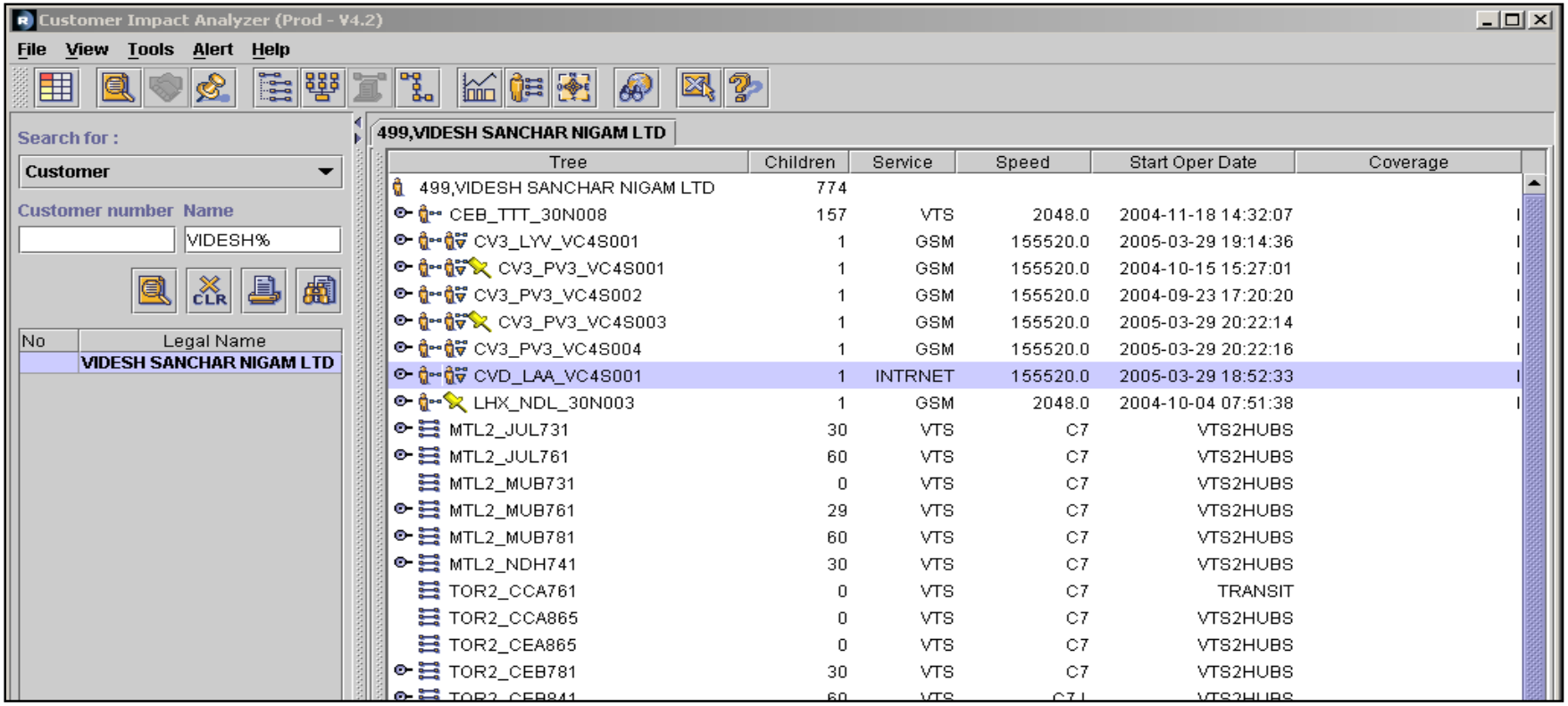
Alerts	Name	Description	C...	Create Date	Off Date	Circuit	Nim...	Ack User	Comment	Ticket
	MIA_RTR-CISC----_BB1...	E1 4/1/4 ; reason : Li...	1	10/17 13:59:09		MIA_SD8_30N001	Port			
	LAU_RTR-CISC----_BB...	Hssi0/0/0 ; reason : ...	4	10/16 21:01:13		L20_LAU_NP2	Port			
	MTT_RTR-CISC----_BB...	Serial2/0/1/1:0 ; rea...	1	10/16 20:44:16		MTT_NQE_NP1	Circuit			
	QBY_RTR-CISC----_SW...	Serial4/1/4:0 ; reaso...	1	10/16 2:38:49		PP3_QBY_NP1	Circuit			NET639270
	LAU_RTR-CISC----_BB...	Serial2/0/0 ; reason ...	12	10/14 18:48:19		LAU_LUS_NP1	Port			NET505643
	MTT_RTR-CISC----_BB...	E1 3/0/3 ; reason : Li...	2	10/13 14:53:34		BJL_MTT_NP1	Port			NET638303
	QBY_RTR-CISC----_SW...	Serial7/0/1 ; reason ...	7...	10/12 2:00:21		LAA_QBY_630N002	Circuit			NET644526
	TNK_RTR-CISC----_SW...	Vlan102 ; reason : a...	1	10/10 12:05:20		LL7_TNK_NP1	Circuit			
	NQT_RTR-CISC----_S...	1/1 ; reason : Link D...	569	10/04 21:04:11		NQT_NQT_1G006	Port			NET641978
	MTT_RTR-CISC----_20...	FastEthernet0/3 ; re...	2	10/04 12:10:22	10/04 12:11:07	MTT_MTT_100M063	Circuit			
	MTT_RTR-CISC----_CO...	POS2/0: B1 BER exc...	1	10/16 20:46:55		MTT_NQT_30C48C	Port			
	MTT_RTR-CISC----_MC...	POS5/0: B2 BER exc...	1	10/16 20:43:01		MTT_NTO_10C19...	Port			
	OBB_RTR-CISC----_BB1	Temperature notific...	2...	07/06 21:05:03			Equi...			NET535817
	MIA_RTR-CISC----_VPN1	RedundantSupply n...	2...	07/06 19:22:55			Equi...			NET360433
	LAU_RTR-CISC----_BB...	Hssi0/1/1 ; reason : ...	53	10/17 13:47:24		GAB_LAU_NP1	Port	AUTO_NET...	REGIANM, 2006...	NET647498
	AEQ_RTR-CISC----_CO...	GigabitEthernet6/1/2...	7	10/16 18:20:15		AEQ_AIN_1G001	Port	AUTO_NET...	REGIANM, 2006...	NET647182
	LAU_RTR-CISC----_BB...	Serial0/1/6:0 ; reaso...	2	10/13 18:08:06		L20_LAU_NP1	Port	AUTO_NET...	REGIANM, 2006...	NET646226
	FR1_RTR-CISC----_MS...	BGP-5-ADJCHANG...	2	10/13 11:15:12		FAY_FR1_NP2	Circuit	AUTO_NET...	REGIANM, 2006...	NET646022
	PPT_RTR-CISC----_CO...	Fan notification rece...	1...	07/31 17:13:46			Equi...	ppt		NET339191

	Critical	Major	Minor	Warning	Undet.	Total
New	10	4	0	0	0	14
Acknowledged	4	1	0	0	0	5

The alarms are displayed in accordance with the following rules:

- Unacknowledged highest severity on top (critical, major, Minor, Warning, Undet, followed by the acknowledge alerts Critical, Major, Minor etc…)
- **Field definition**
- **The alert name** is made of the Alarm Alias associated with the equipment in order to facilitate the mapping in Inventory
- **The alarm description** is the one received from the equipment
- **Create date and off date** correspond to the REGI timestamp in gmt
- **The circuit name** correspond to the circuit ID as per the correlation to Inventory
- **Inventory type name** indicate if the alarm was mapped to a port, circuit or equipment
- **Ack User** identify the initial of the users that acknowledge the alarm (or the system name)
- **Comment** entered by the user or system
- **Ticket** is the Remedy ticket number

NMS: Customer Impact Analysis



❖ *Fast and easy retrieval of Customers information*