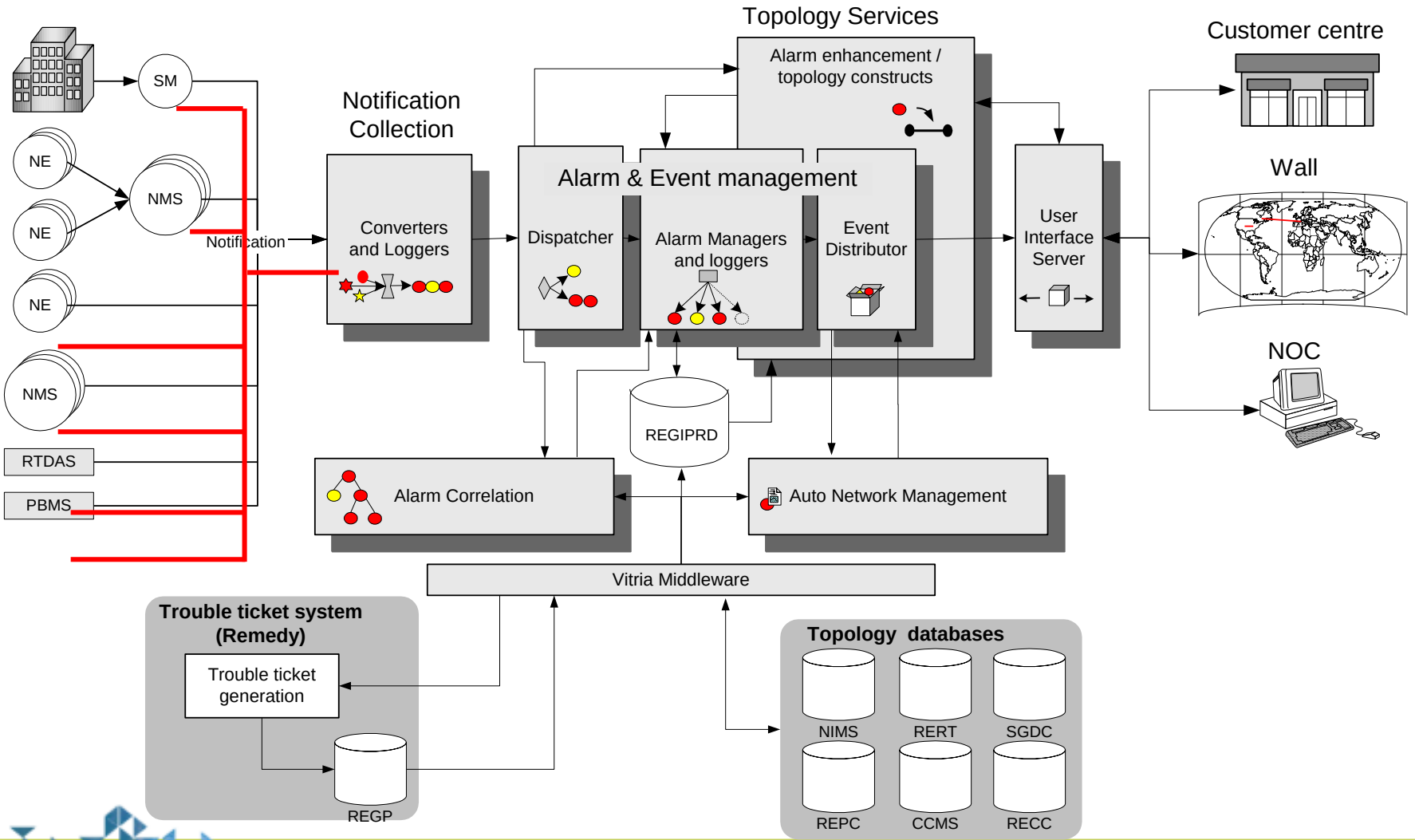
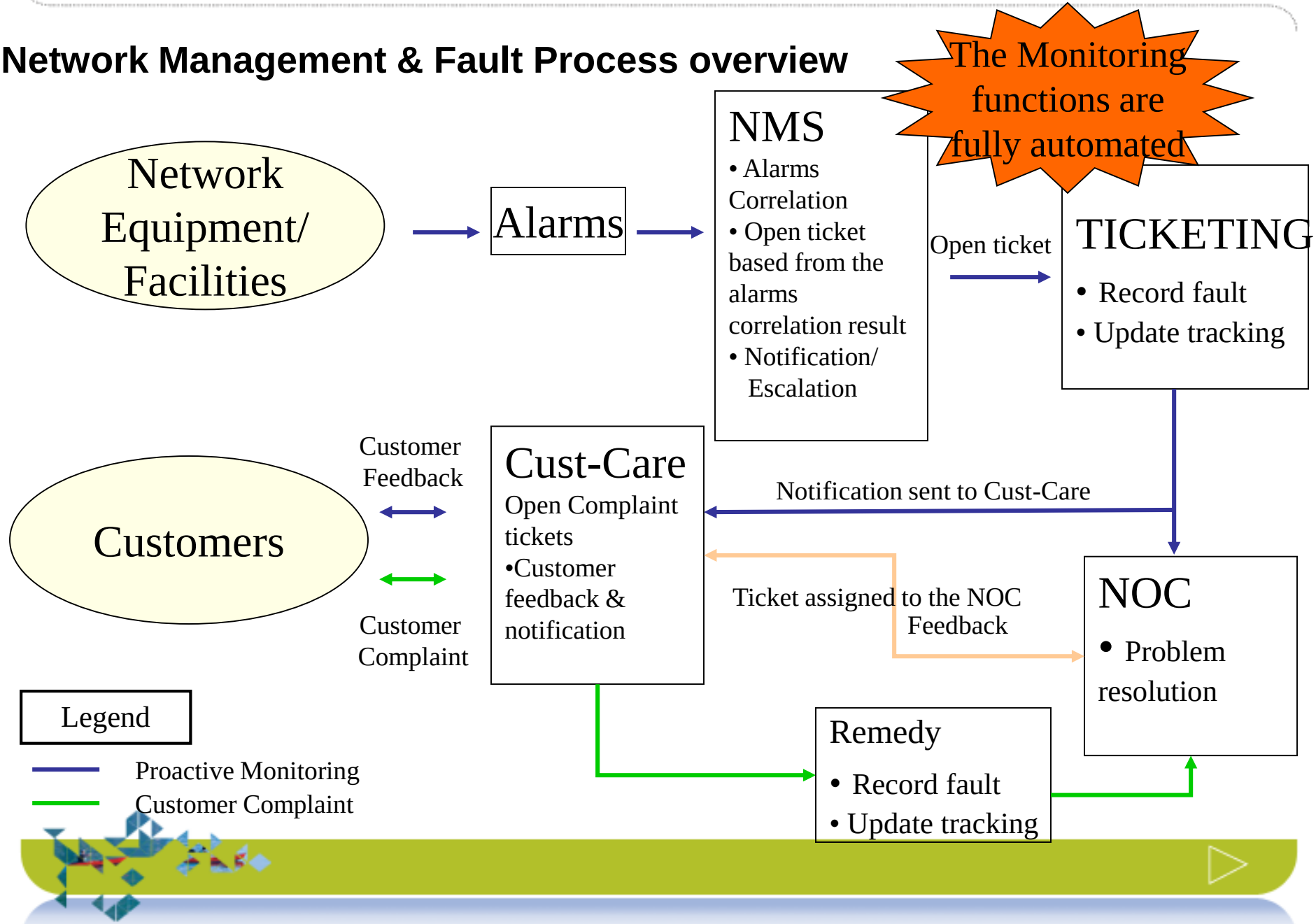
# Training objective

- 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.

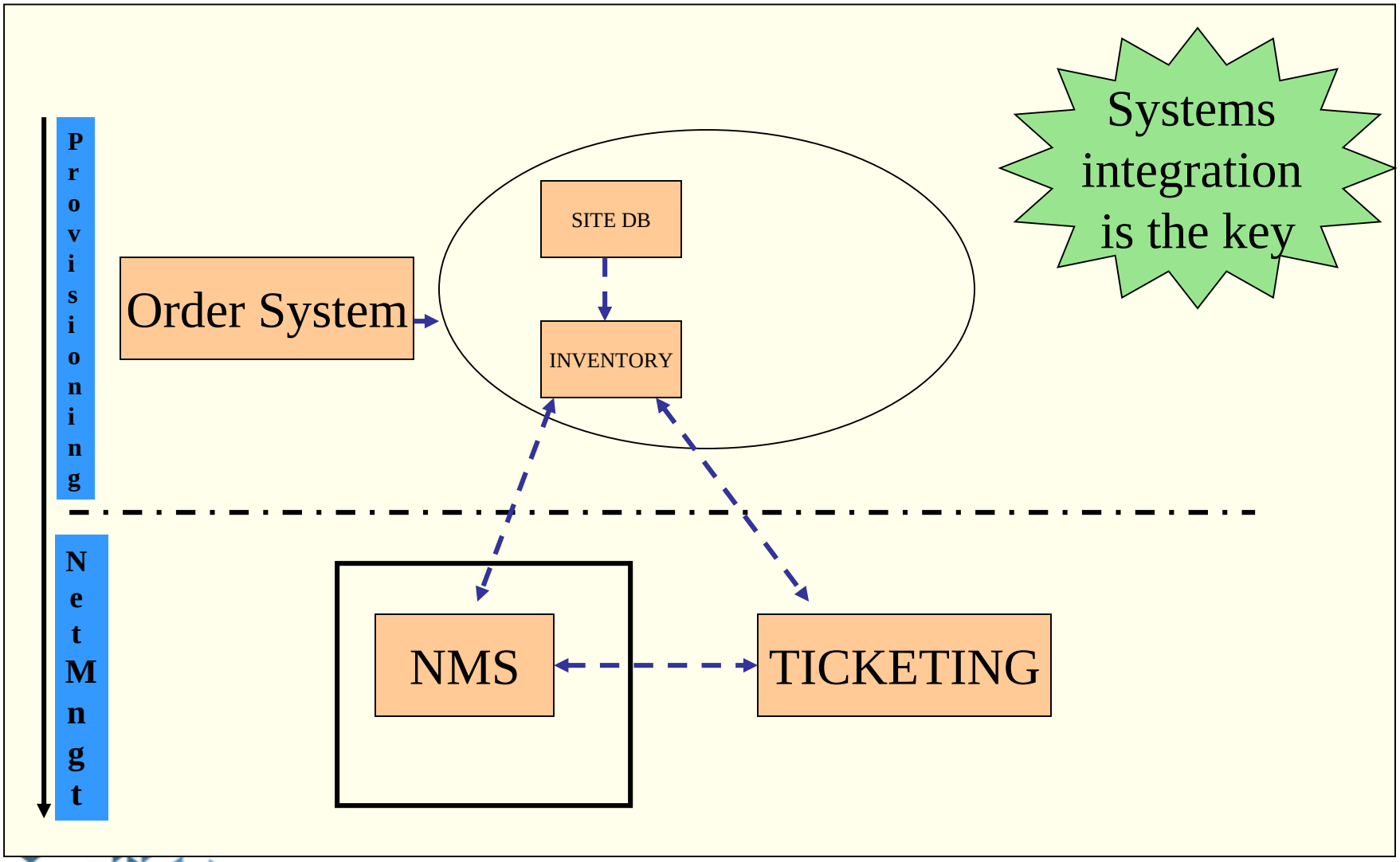
- **Centralized Network Management system**

  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



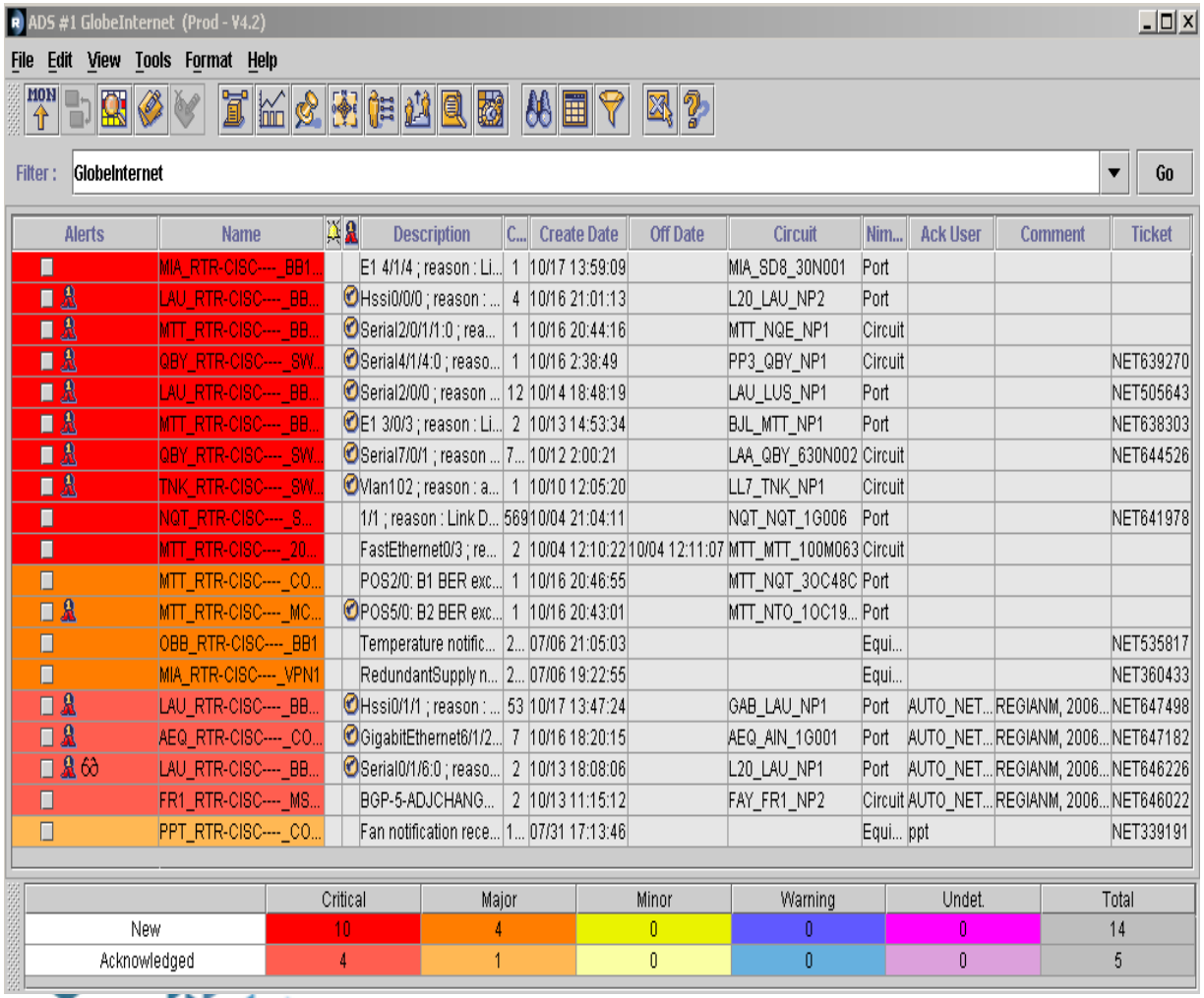
# Network Management concept

## 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



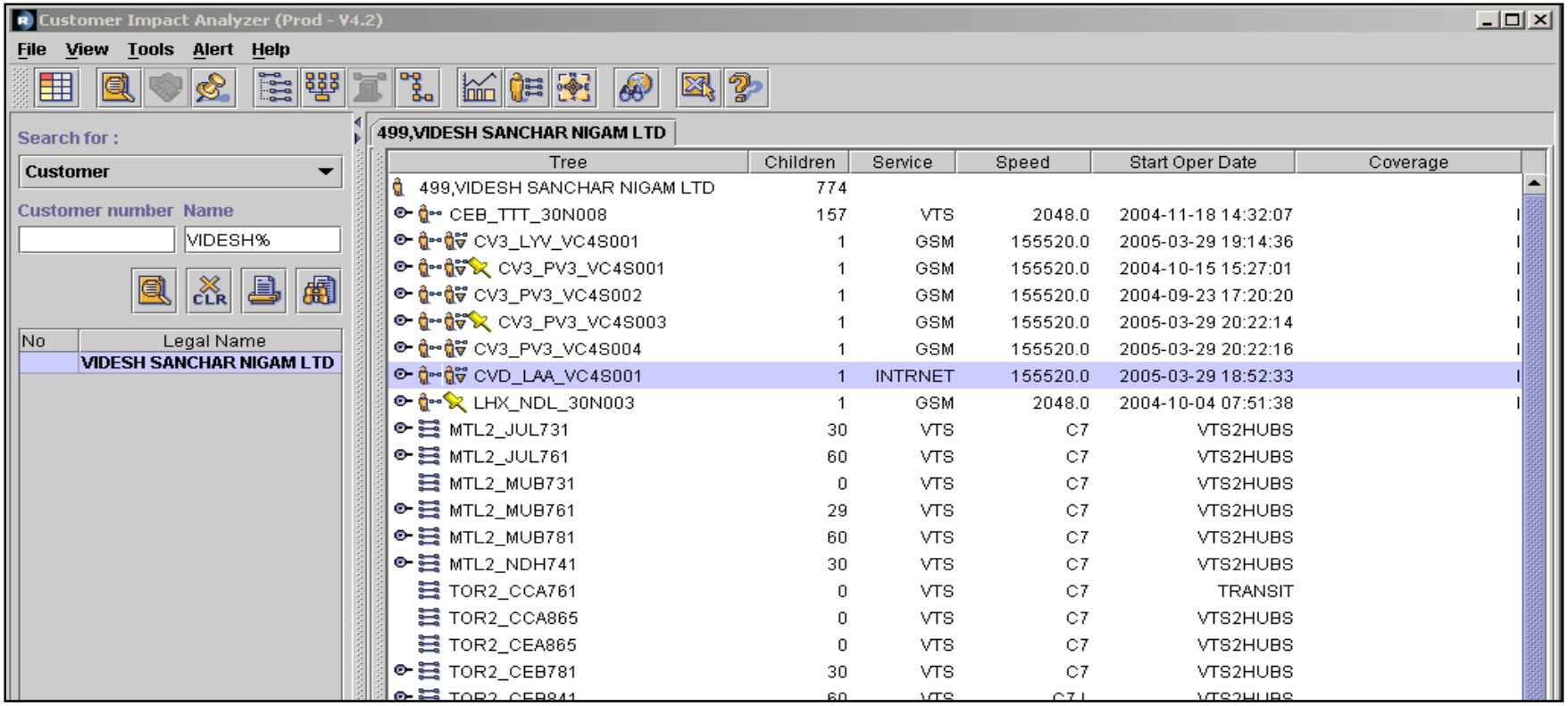

| Alerts | Name | Description | C... | Create Date | Off Date | Circuit | Nim... | Ack User | Comment | Ticket |
|---|---|---|---|---|---|---|---|---|---|---|
| | MIA_RTR-CISC----_BB1... | E1 4/1/4 ; reason : Li... | 1 | 10/17 13:59:09 | | MIA_SD8_30N001 | Port | | | |
| | LAU_RTR-CISC----_BB... | Hssi0/0/0 ; 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_3OC48C | Port | | | |
| | MTT_RTR-CISC----_MC... | POS5/0: B2 BER exc... | 1 | 10/16 20:43:01 | | MTT_NTO_1OC19... | 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*