



*CS,
la SSII
à la convergence des systèmes
d'information et de communication*

Applications critiques, e-Solutions, Network services, Infogérance, Applications critiques, e-Solutions, Network services, Infogérance,

GOC and NOC Meeting

5th February 2004

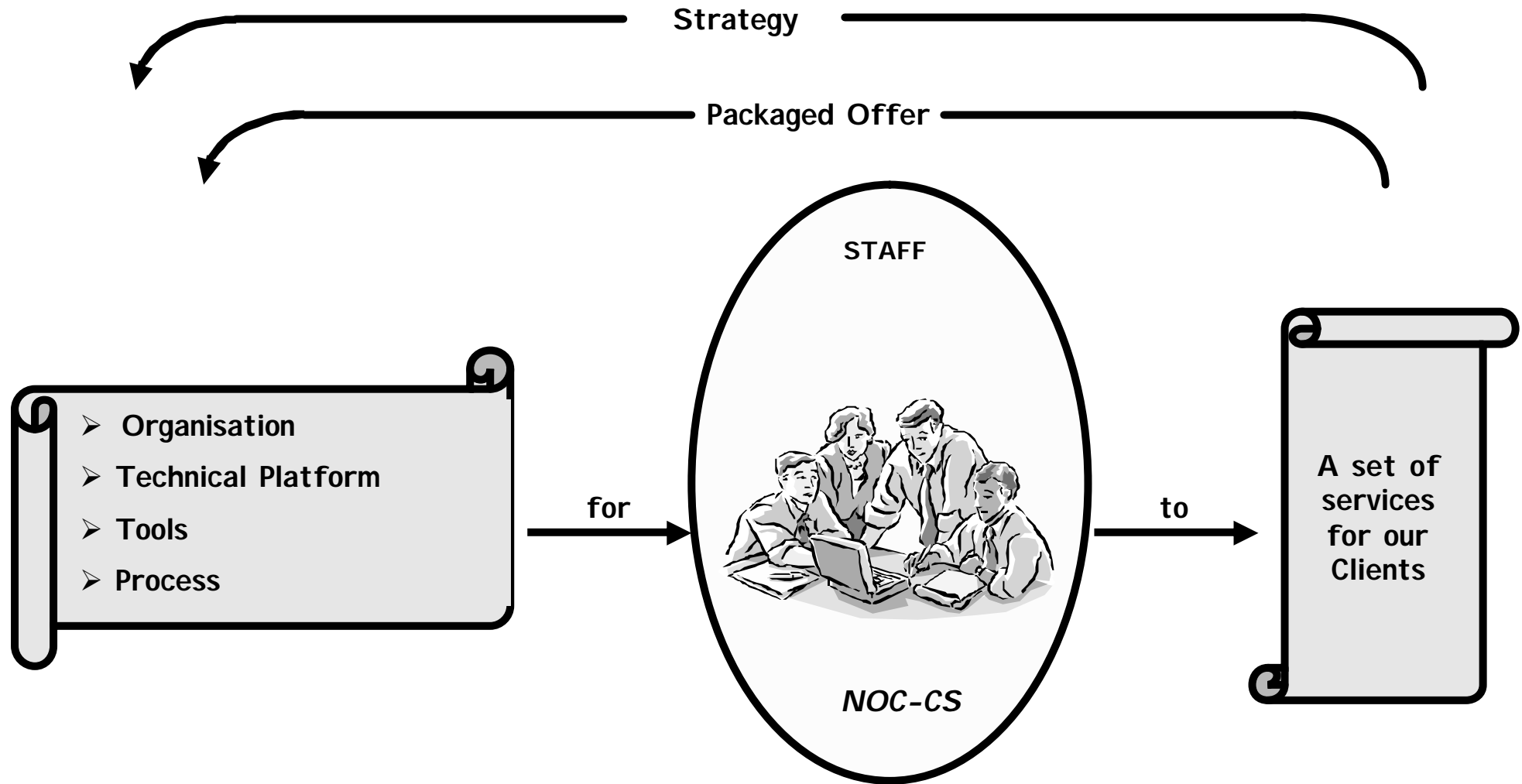


NOC-CS Presentation Agenda

- ◆ NOC-CS general presentation
- ◆ R&D networks specific needs
- ◆ NOC-CS missions
- ◆ NOC-CS communications
- ◆ NOC-CS procedures
- ◆ NOC-CS Service Level Agreement
- ◆ NOC-CS reporting
- ◆ NOC-CS tools



NOC-CS general presentation



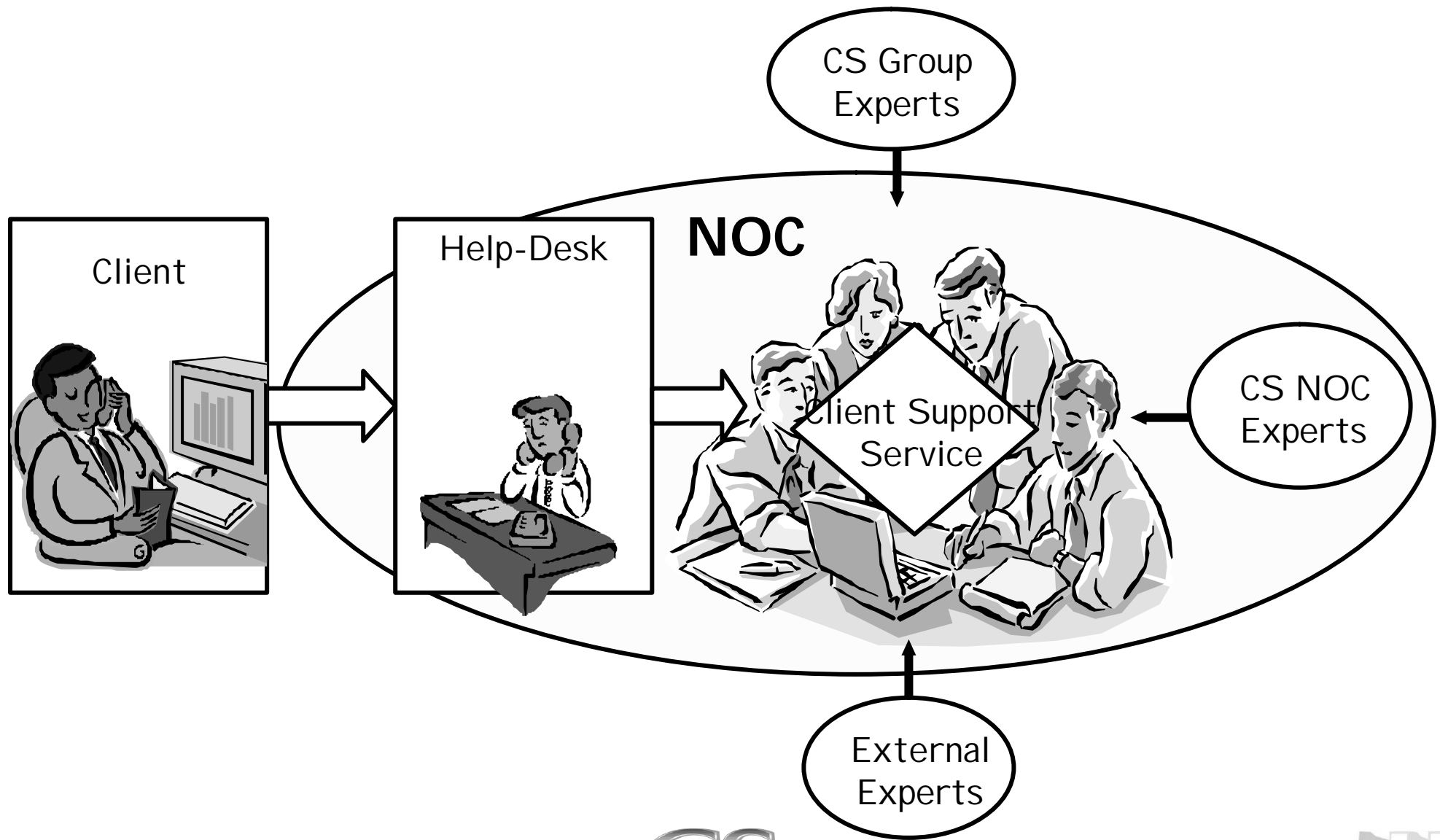


NOC-CS general presentation

- ◆ Personalised services offer, for enterprises or public administrations, for their communications services management (voice and data)
- ◆ Flexible offer, adapted to Client service needs and network scale
- ◆ Commitment on fault resolution delay and service availability
- ◆ Client support: technology survey and service evolution commitment



NOC-CS User support



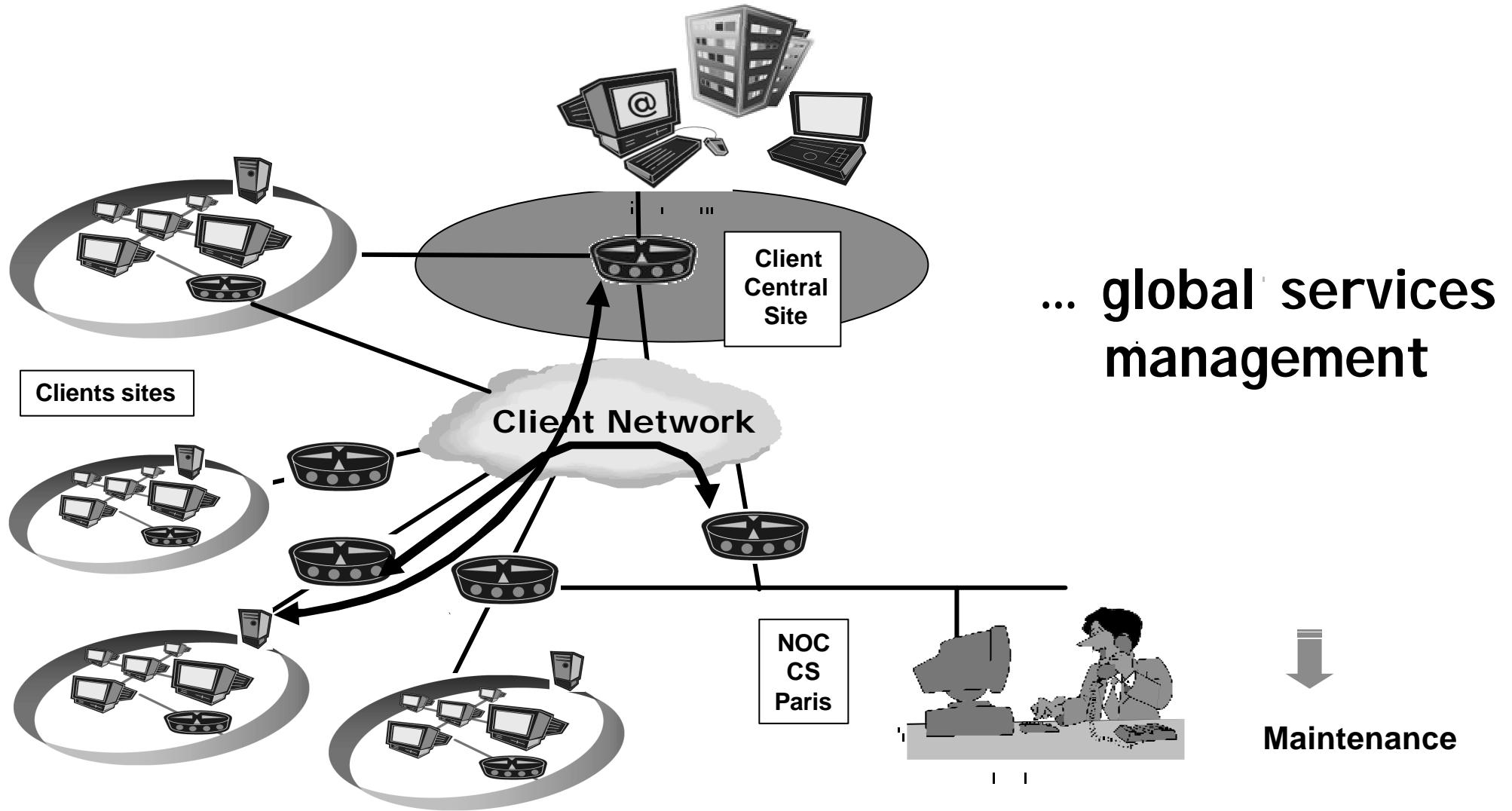


NOC-CS services (short list)

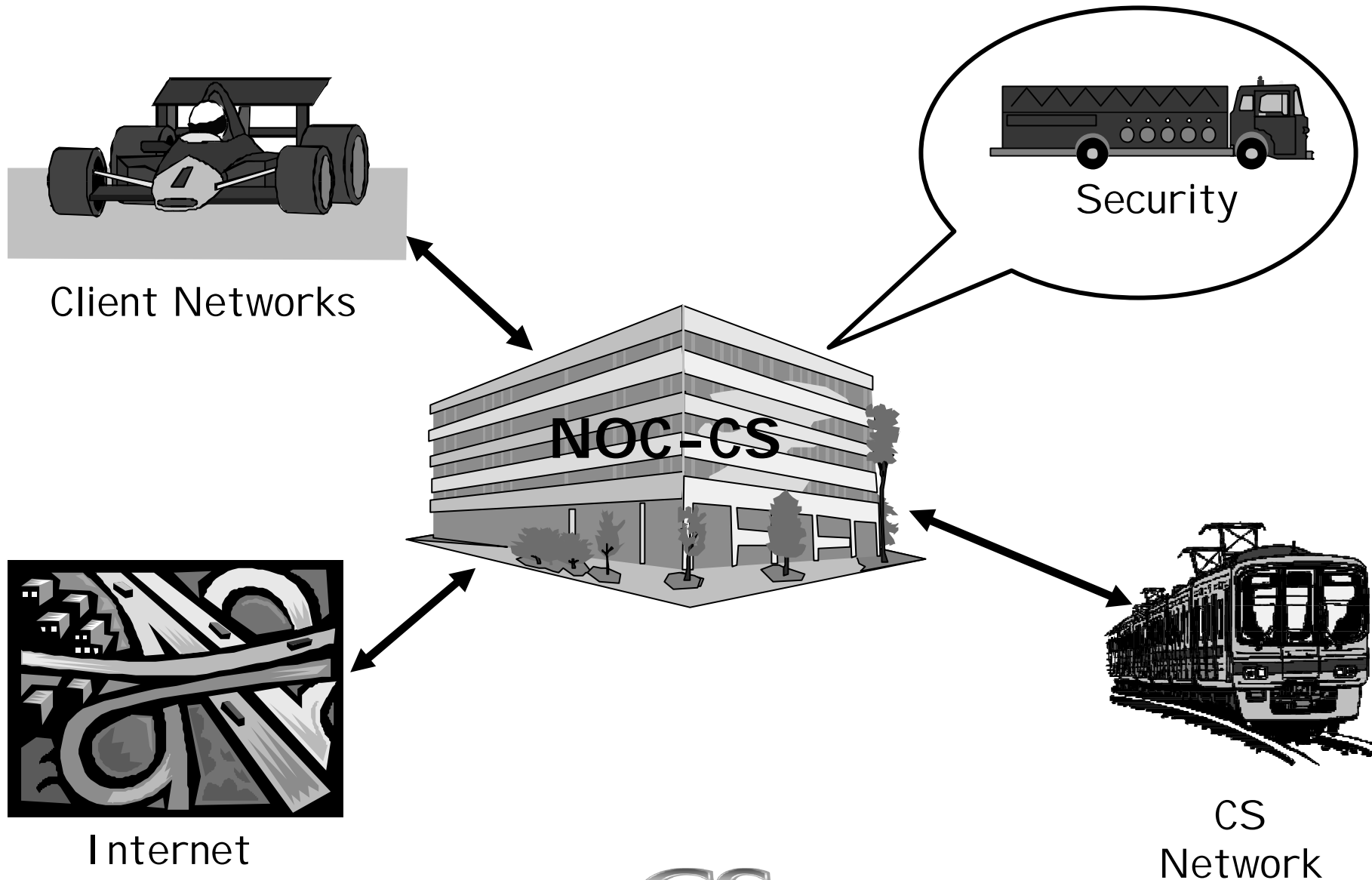
- ◆ Phone, Email and Fax access
 - Unique access point for Client support
 - Personalised phone access
- ◆ Automatic fault detection with treatment and resolution delays commitments
- ◆ Configurations modifications
- ◆ Evolutions participation and support
- ◆ Global or detailed reporting



NOC-CS end to end applications and network...



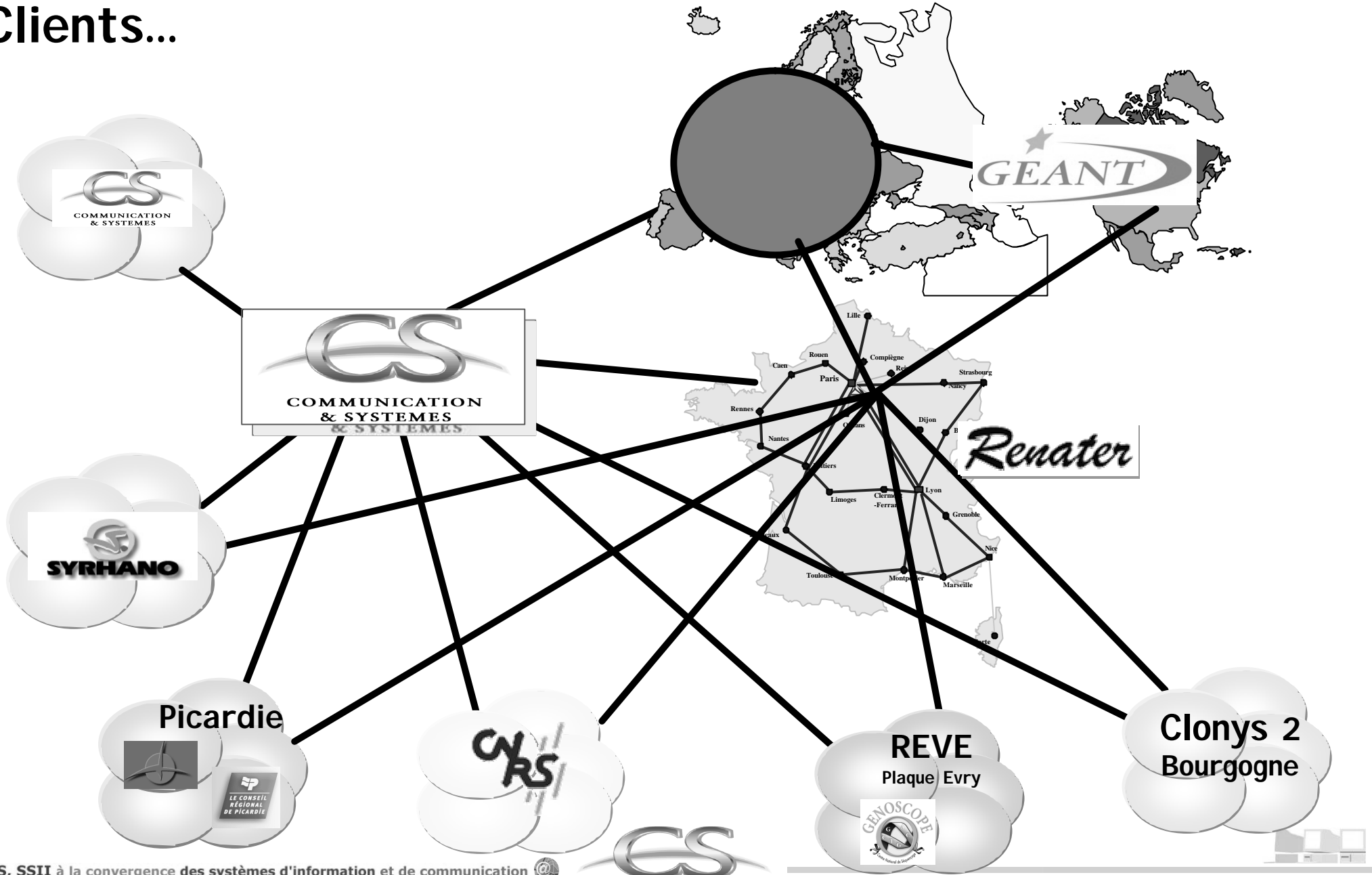
NOC-CS communication flows



NOC-CS service offer



Clients...





R&D networks specific needs (as seen by CS)

- ◆ Provide reliable connectivity between research centre, avoiding dedicated networks within same user group
- ◆ Provide connectivity for Research and Development community
 - Internet connectivity
 - High-speed connectivity for special projects
- ◆ Evolve accordingly with new networks technologies
- ◆ Provide support for security
- ◆ Promote new network services or best practice
- ◆ Offer user support



R&D networks specific needs

- ◆ Client Organisation (general view), different cases
 - Client without any technical expertise and support
 - Client with limited technical support, usually consultant (level 3), just to take decision
 - Client with level 2 and level 3 staff support, working closely with the service provider
- ◆ Client – Service provider complementarities
 - Service Provider (CS)
 - ▲ level 1, level 2 and level 3 support
 - ▲ Different working methods (industrial)
 - ▲ Production vision

Each party has a complementary role to provide the best service for users



NOC-CS missions

- ◆ Assure network maintenance, 24 hours a day, 7 days per week
- ◆ Assure coordination between multiple service providers (operators, other NOC, hardware maintenance, PoP services, ...) to offer the best global services
- ◆ Provide Client and User support through phone and email communication systems
- ◆ Deploy new technologies as soon as they do not disturb networks availability, with Client approval
- ◆ Maintain monitoring and statistics gathering tools, adapted to Client needs



NOC-CS communications

- ◆ User point of contact
 - Universities, research centre,
 - Organisations, enterprises.
- ◆ Client point of contact
 - Contractual and technical communications between staff members
- ◆ Providers
 - Carriers
 - Network operators
 - Equipment manufacturers
 - PoP
- ◆ Access through :
 - Dedicated phone number,
 - Dedicated email address,
 - Fax



NOC-CS procedures

- ◆ CS is ISO 9001 v2000 certified (from basement to ceiling)
 - Improvement in predictability, traceability and capitalisation
- ◆ Quality applies to these main subjects
 - Technical elements
 - Reporting
 - Contractual and Administrative elements
 - Organisation
 - Quality
- ◆ Each subject is then sub-divided in many sub-parts
- ◆ The result for each Client is more than a hundred of procedures and several hundred of documents

This doesn't eliminate human errors, but minimize them



NOC-CS procedures

- ◆ Communication procedures
 - Help-Desk
 - ▲ How to access NOC
 - Client
 - ▲ Who and how to communicate with the Client for fault, evolution, and information subjects
 - User
 - ▲ Define domain of responsibilities with the users
 - Provider
 - ▲ Who, why, and how to communicate with providers
 - Escalation
 - ▲ Define the way to address problem not solved using normal procedures
 - Reporting



NOC-CS procedures

- ◆ Maintenance procedures
 - Supervision
 - ▲ Define SLA implementation based on tools (automation)
 - ▲ Check-list to verify supervision is working
 - ▲ Check-list to verify all faults are known and handled
 - ▲ Fault alert method
 - ▲ FTE Network access
 - Maintenance
 - ▲ User information (ticket) handling
 - ▲ Fault identification
 - ▲ Fault resolution
 - ▲ In working order test



NOC-CS procedures

- ◆ Evolution procedures
 - Basic modification
 - ▲ Equipment password change
 - ▲ New User connexion
 - ▲ New network link connexion
 - ▲ Hardware modification
 - ▲ Configuration change
 - Evolution
 - ▲ New OS deployment
 - ▲ Validation and test
 - ▲ Migration
 - ▲ Planning



NOC-CS procedures

- ◆ General procedures
 - ▲ Inventory structure and update
 - ▲ Documentation handling
 - ▲ Staff planning
 - ▲ Purchase management
 - ▲ Stock control
 - ▲ ... etc.





NOC-CS Service Level Agreement

- ◆ SLA: the minimum number of indicators permitting to measure the quality of Service produced for the Client
- ◆ Classic indicators
 - ▲ Network / System availability: 99,xx %
 - ▲ Time To Restore: 4 hours... or less
 - ▲ ... other.
- ◆ Production indicators
 - Help-Desk availability:
 - ▲ Phone reachability (lost call / total call), example 95 %
 - ▲ Phone response time, example 20s
 - Trouble ticket
 - ▲ Time to open after fault notification, example 15mn
 - ... other.





NOC-CS on-line information

- ◆ Network availability
 - Network status
 - Tickets (open & closed)
 - Looking glass

- ◆ Inventory
 - Equipments, links, and PoPs
 - Contact address

- ◆ Planning





NOC-CS monthly reporting

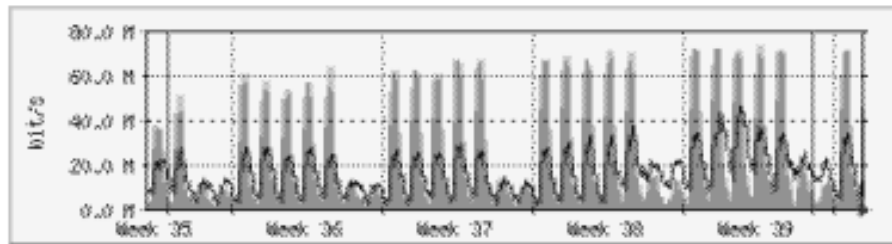
- ◆ Management overview
 - Global summary
 - Events
 - Network topology
- ◆ Fault report (last month and year history)
 - Infrastructure, equipment, and software faults
- ◆ Network statistics (last month and year history)
 - Backbone load
 - Access point load
 - Provider load



NOC-CS reports sample

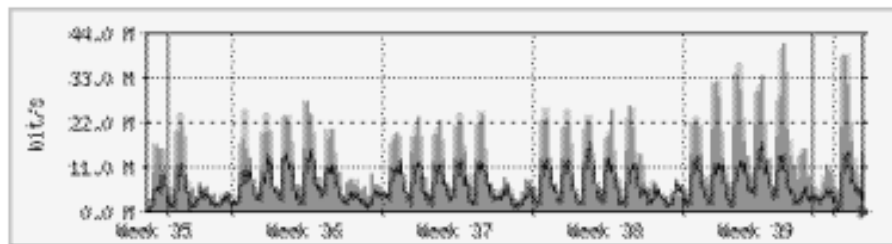
INTERNATIONAL :

❖ GIX



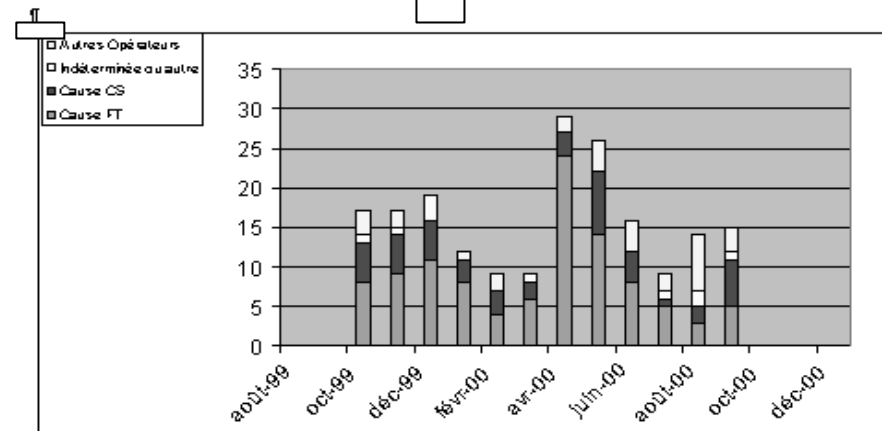
➤ Débit maximum (configuré) : 155 Mbit/s

❖ TEN155

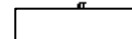


➤ Débit maximum (configuré) : 76,5 Mbit/s

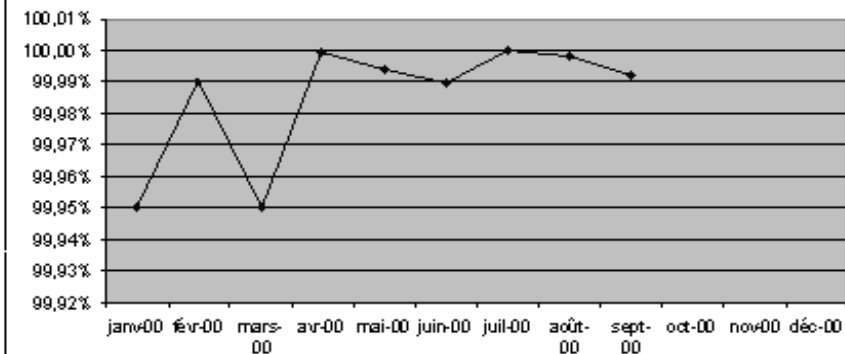
2.1.2. Répartition des dérangements



↑



Disponibilité pondérée RNI (en %)



NOC-CS tools

- ◆ Help-Desk
 - Phone ACD, CS Trouble Ticketing System
- ◆ Supervision and alert
 - CS, manufacturer or freeware monitoring tool
- ◆ Statistics
 - CS, manufacturer or freeware statistics gathering tool (MRTG, Infovista, ...etc.)
- ◆ Inventory and configuration management
 - Databases (Excel, MySQL, ...etc.)
- ◆ Reporting
 - MS Office, PageMaker
- ◆ Information servers
 - W3 server, mail server, ...etc.
- ◆ Planning
 - MeetingMaker, Excel





NOC-CS security

- ◆ We shall separate each Client from one another
- ◆ We shall protect NOC from unauthorised access
- ◆ Security measures have been implemented
 - VLAN and VPN
 - Firewall filters
 - User access control for servers and network equipments
 - Session cryptography
 - ... etc.

Can't tell to much about it !

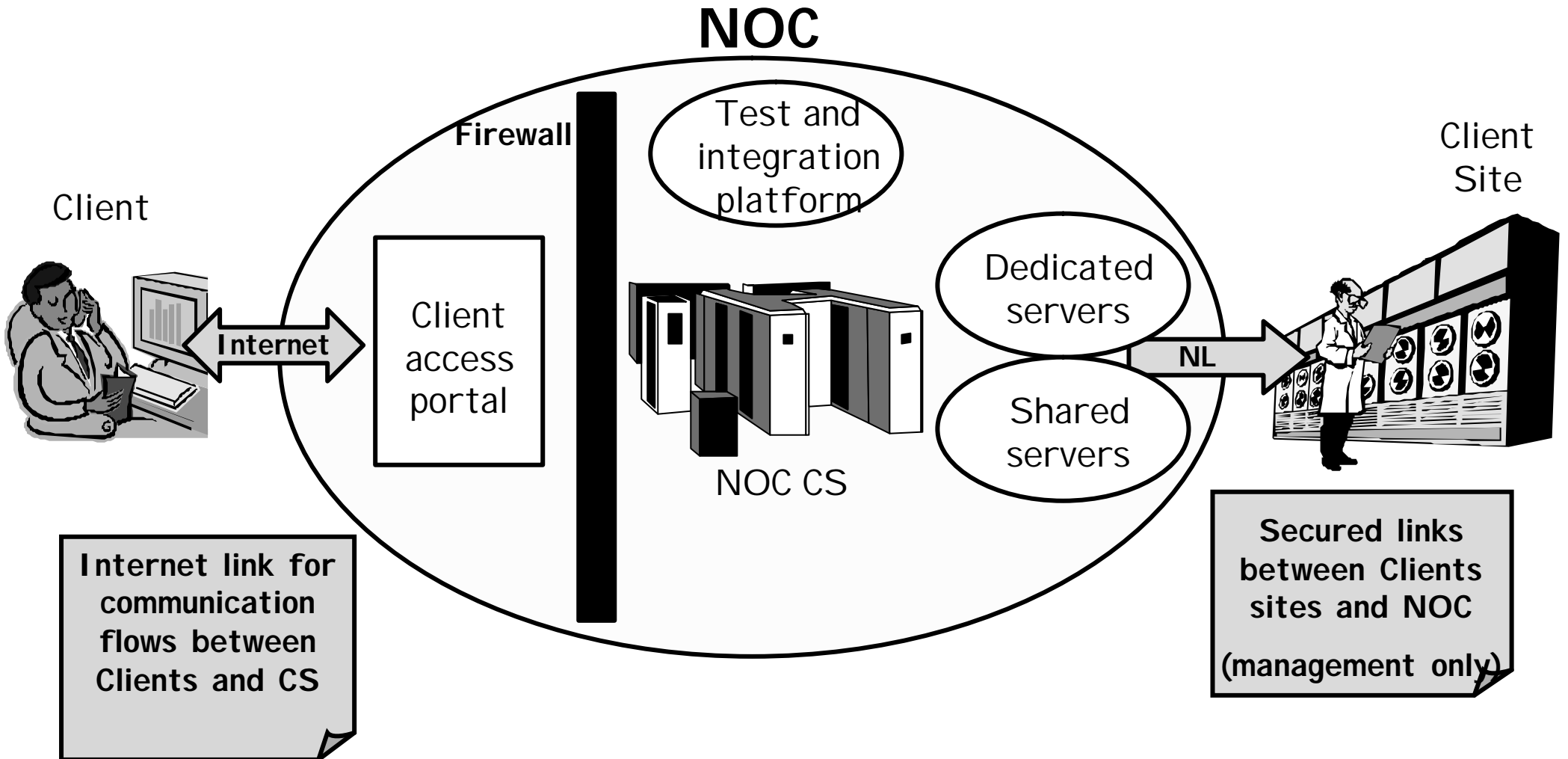


NOC-CS organisation and staffing

- ◆ Level 1&2 network maintenance and support
 - FTE working in 2 shifts : 6h to 14h30, 13h30 to 22h00, on call outside, 5 or 6 days per week. Minimum is 5 FTE for the 2 shifts.
- ◆ Level 3 network support
 - In house network engineer for evolution, new tools implementation, and Client's level 3 relationship
 - Other level 3 support available inside CS
 - Manufacturer support available
- ◆ Management
 - Every Client has a contract manager who takes care of the SLA and manage its staff.



NOC-CS technical platform



The End

