Offshore Delivery of TTCN-3 Testing Services

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MÉTODOS Y TECNOLOGÍA

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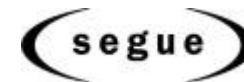
- *Any Questions?*

About Us

- *The Spanish Leader Company in SW & Quality Engineering*

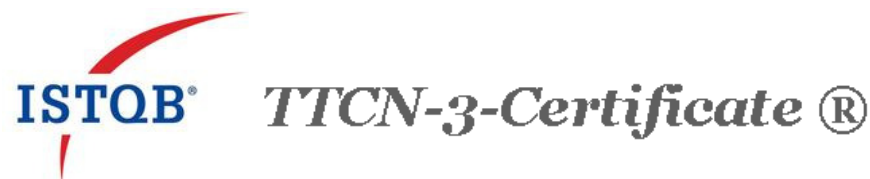- *Preferred Leader Provider in Telecommunications companies:*

- *Strong alliances with testing and quality software companies:*

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About Us

- *The First Spanish Organization Certified in **ISO 9001**:*

  Factory Software Testing Services

- *Leader in TTCN-3, with an operative TTCN-3 Lab in Spain*

- *We carry out 400.000 Hours/year in testing activities*

- *MTP offers more than 250 Quality and Testing Engineers, certified: CSQE, ISTQB, PMI, CMMi and ITIL.*

- *Important activity in R+D projects:*
  - *TTCN-3 Tool - Exhaustif*
  - *Fault injection tool (SWIFI techniques)*
  - *Wireless Sensor Network*

MTP Delivery Centers

- *Providing the best mix of local and global delivery*

Centers

- **Spain (HQ)**
(250 Resources)
- **Canaries**
(50 Resources)
- **Mexico**
(90 Resources)
- **Brasil**
(100 Resources)

**International
Projects**

- **France**
- **Germany**
- **UK**
- **Mexico**
- **USA**
- **Dominican
Republic**
- **Sweden**
- **Portugal**

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Testing Services

Validation Services

- **Testing during the development lifecycle**
  - Functionality, Load, Stress, Capacity and Stability, Security and Vulnerability Analysis, Usability, Portability and Compatibility, Exploitability, Regression Testing Automation

- **TTCN-3**
  - Simulation of protocol, interface, or network system independently of the platform used.
  - Migration and modification of test cases

- **Software Product Evaluation and Certification**
  - Evaluations based on the ISO/IEC 9126 standard

Verification Services

- **Requirement Engineering**
  - Verifying Business, systems and software requirements

- **Code Quality Assurance**
  - Deployment of code and monitoring of code degradation, regulations and standards

- **Reliability and Security**
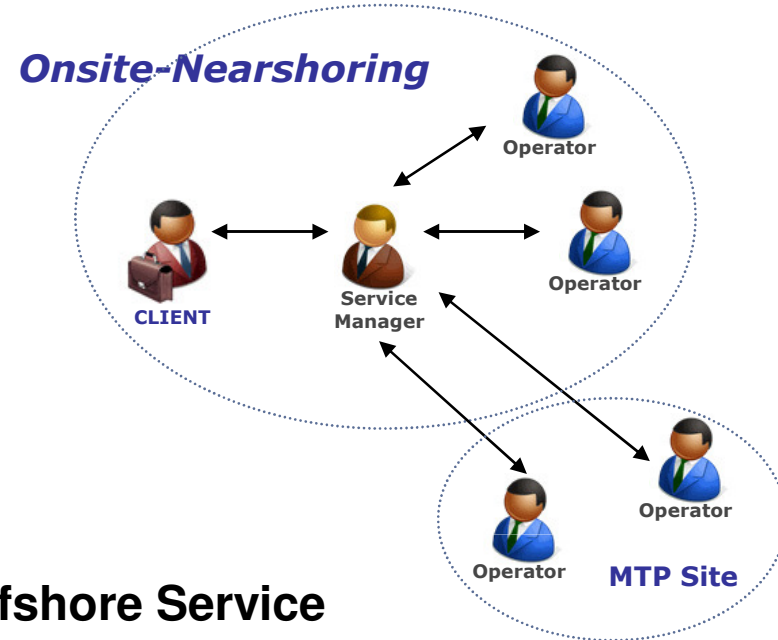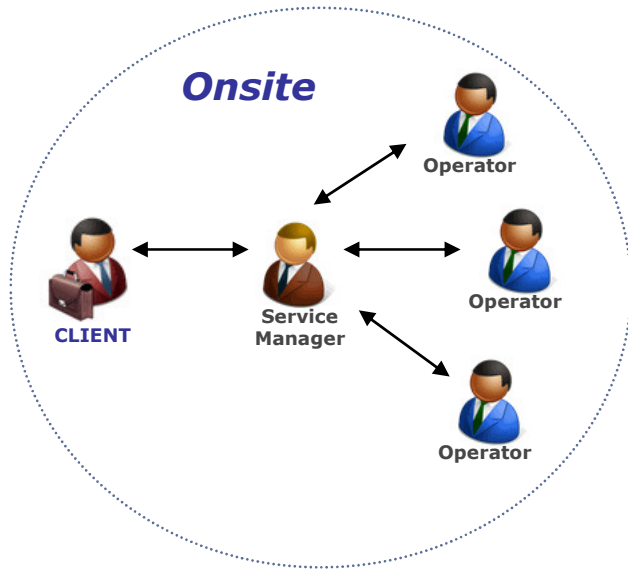 - Preventing defects in early development stages
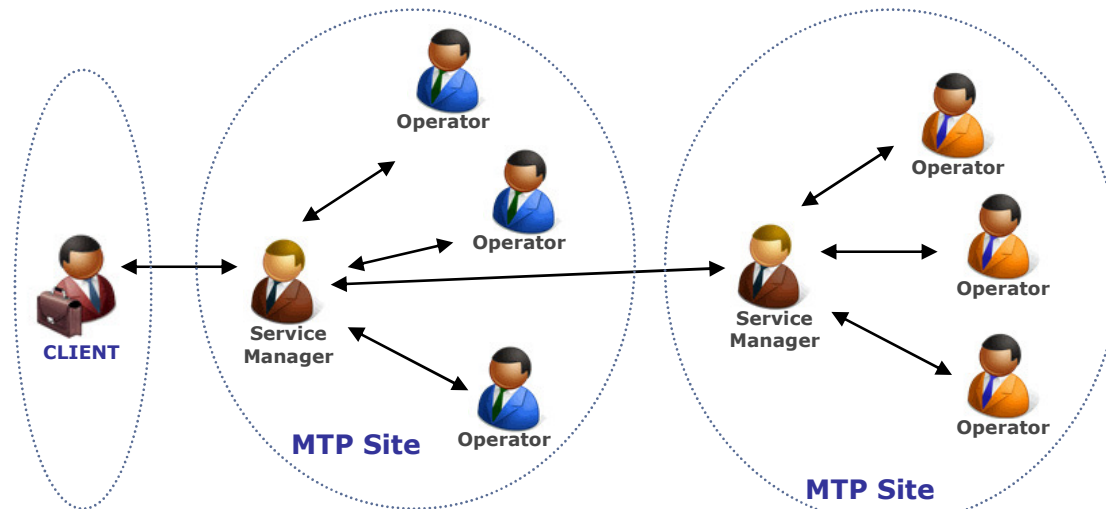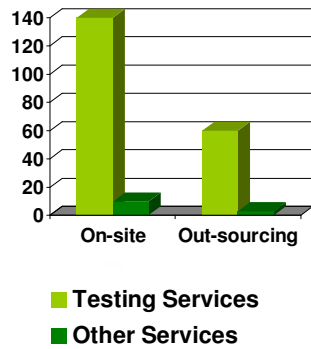
Our TTCN-3 Services

- *Types of TTCN Development services offered:*

    - **TTCN-3** *Test Environment Development*
    - **TTCN-3** *Test Case Development*

- *Broad and deep knowledge on TTCN-3 standards*

- *Large experience with all TTCN-3 tools :*

    - *Titan, TTWorkbench, HP-Telelogic...*

- *Deep knowledge of different technologies, protocols & nodes:*

    - *GSM/GPRS, IMS, UMTS...*

Our TTCN-3 Operational Approaches

Onsite

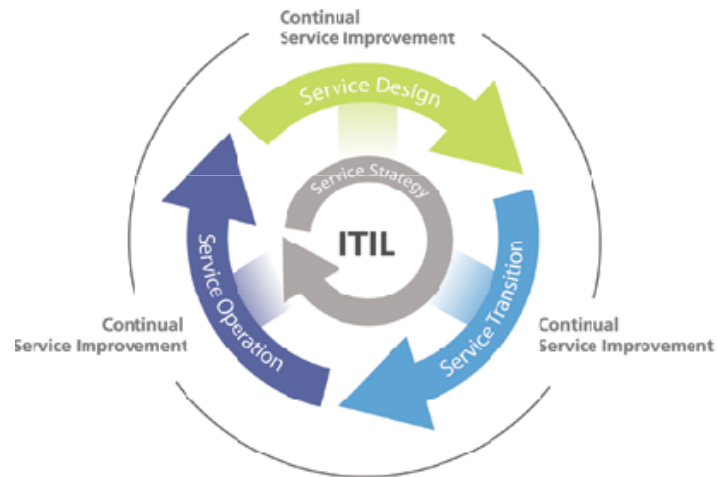Operator

Operator

CLIENT

Service Manager

Operator

Onsite-Nearshoring

Operator

CLIENT

Service Manager

Operator

Operator

Operator

MTP Site

TTCN-3 Offshore Service

Nearshoring-Offshoring

CLIENT

Operator

Service Manager

Operator

Operator

MTP Site

Operator

Operator

Service Manager

Operator

Operator

MTP Site

140
120
100
80
60
40
20
0

On-site   Out-sourcing
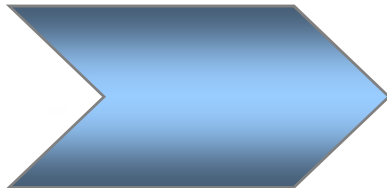
■ Testing Services
■ Other Services

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TTCN-3 Transition Methodology/Model

- *Model based in processes*
- *Processes that provide value to the client*
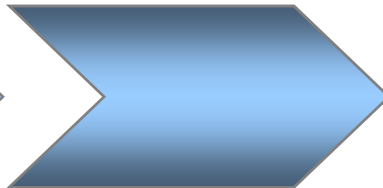- *Processes in line with ITIL best practices*
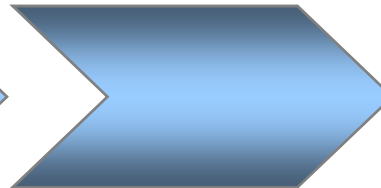

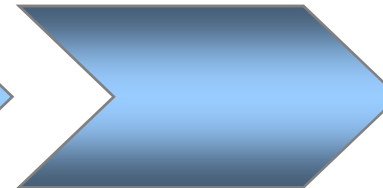**TTCN-3** **Factory Service (Offshore)**

DESIGN /PROVISION   **TRANSITION**   **OPERATION**   **TRANSFERENCE**

Design/Provision Phase

DESIGN/PROVISION TRANSITION OPERATION TRANSFERENCE
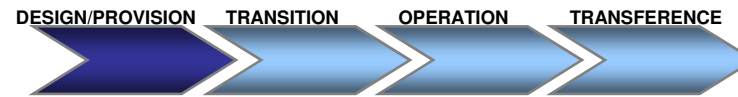
To design a service solution to fulfil the requirements outlined in the commercial offer, considering efficiency parameters

DESING

This phase enables the industrialization of the service to become a TTCN-3 centre:

- *Gathering initial information*

- *Road map of the service becoming a TTCN-3 offshore centre*

- *Definition of processes, procedures, indicators, tools, etc.*

To provide the necessary infrastructure and tools defined in the design phase

PROVISION

- *To setup the HW & SW infrastructure*

- *To allocate consultancy resources and a training plan*

Design/Provision Phase
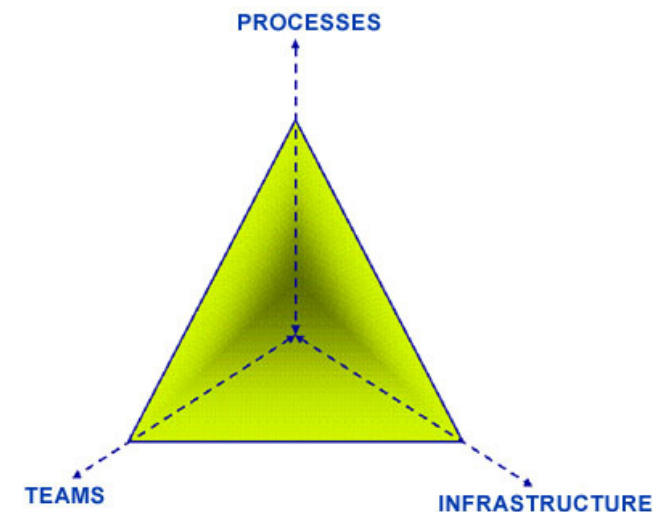
- **ESTABLISH PROCESSES**
    - *Deliverables: Test Specification, Test Scripts, Execution Logs*
    - *Processes to control deliverables (continuous checks to early detect errors): Weekly or monthly deliverables*
    - *Communication workflow: Client & Internal relationships*
    - *Service Level Agreement (SLA)*
    - *TTCN-3 Framework*
    - *TTCN-3 Style Guide and TTCN-3 Best practices*
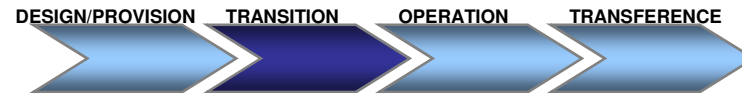
- **INFRASTRUCTURE**
    - *Information Repository : Wiki*
    - *Version control: CVS, ClearCase*
    - *Incidence management tool: Mantis, ClearQuest*
    - *Execution environment: licenses, adapters, etc*

- **TEAMS**
    - *TTCN-3 Adapters Skills*
    - *Functional Protocols Skills*
    - *TTCN-3 Advanced & Protocols Skills*

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Transition Phase

DESIGN/PROVISION   TRANSITION   OPERATION   TRANSFERENCE

To setup and start up the operation of the service that guarantees success within the estimated costs, quality anddeadlines

TRANSITION

- *Development of TTCN-3 Framework*
- *Development of initial TTCN-3 testcases to test Framework*
- *Agreement of Transition plan with the client, evaluating risks:*
  - *Deployment Phases*
  - *Transition Monitoring*
- *Closing of agreements and services with the client*
- *Agreement of milestones of deliverables (price based on deliverables)*
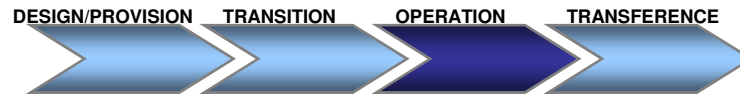
TTCN-3 Project & Framework

- *There are three parts to the development of TTCN-3 test cases*
- *Framework based on reusable modules arranged by functionality and message type*

- *Advantages:*
  - *Framework modules are used by any or all TTCN-3 Test cases*
  - *Makes easier to maintain TTCN-3 for future changes*
  - *Reduces the development time of TTCN-3 testcases*

TTCN-3 PROJECT	Description	Team
TTCN-3 TEST CASES	TTCN-3 Test Cases	Functional TTCN-3 (protocols & nodes)
FUNCTIONS	TTCN-3 Modules	TTCN-3 Advanced Knowledge
MESSAGES	TTCN-3 Modules	TTCN-3 Advanced Knowledge
PORTS & ADAPTERS	TTCN-3 SA & PA	TTCN-3 Adapters & SW Developers

Framework

Operation Phase

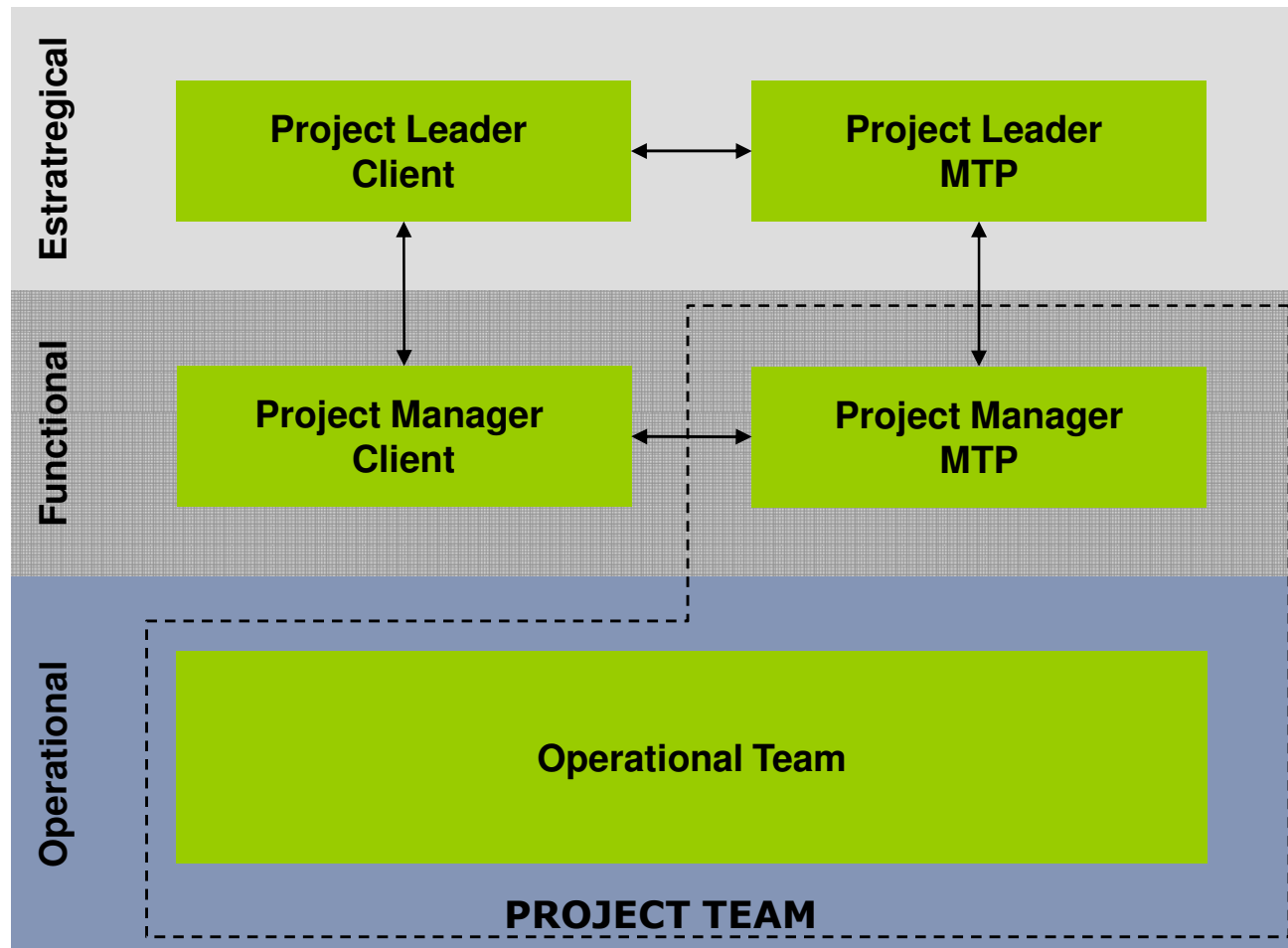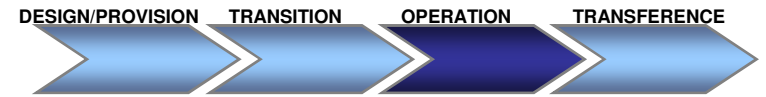DESIGN/PROVISION TRANSITION OPERATION TRANSFERENCE

To perform on a daily basis the full set of activities defined on previous phases

OPERATION

- *Internal activities*
  - *Management of Internal Demand:*
    - *minimum & agreed internal productivity*
  - *Operation Service Management:*
    - *Localization and autonomy of the teams involved: i.e. Madrid, Brazil*
    - *Availability: Time-Zone difference*
    - *Services incident Management: Mantis, ClearQuest*
- *External activities*
  - *Management of Service Demand: productivity*
  - *Management of Service Quality: SLA & KPIs*

Operation Phase

Relationship Model

Estratregical

Project Leader
Client ⟷ Project Leader
MTP

Functional

Project Manager
Client ⟷ Project Manager
MTP

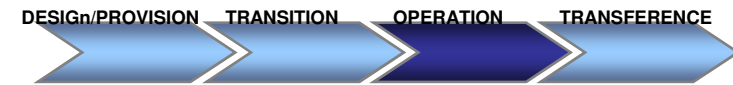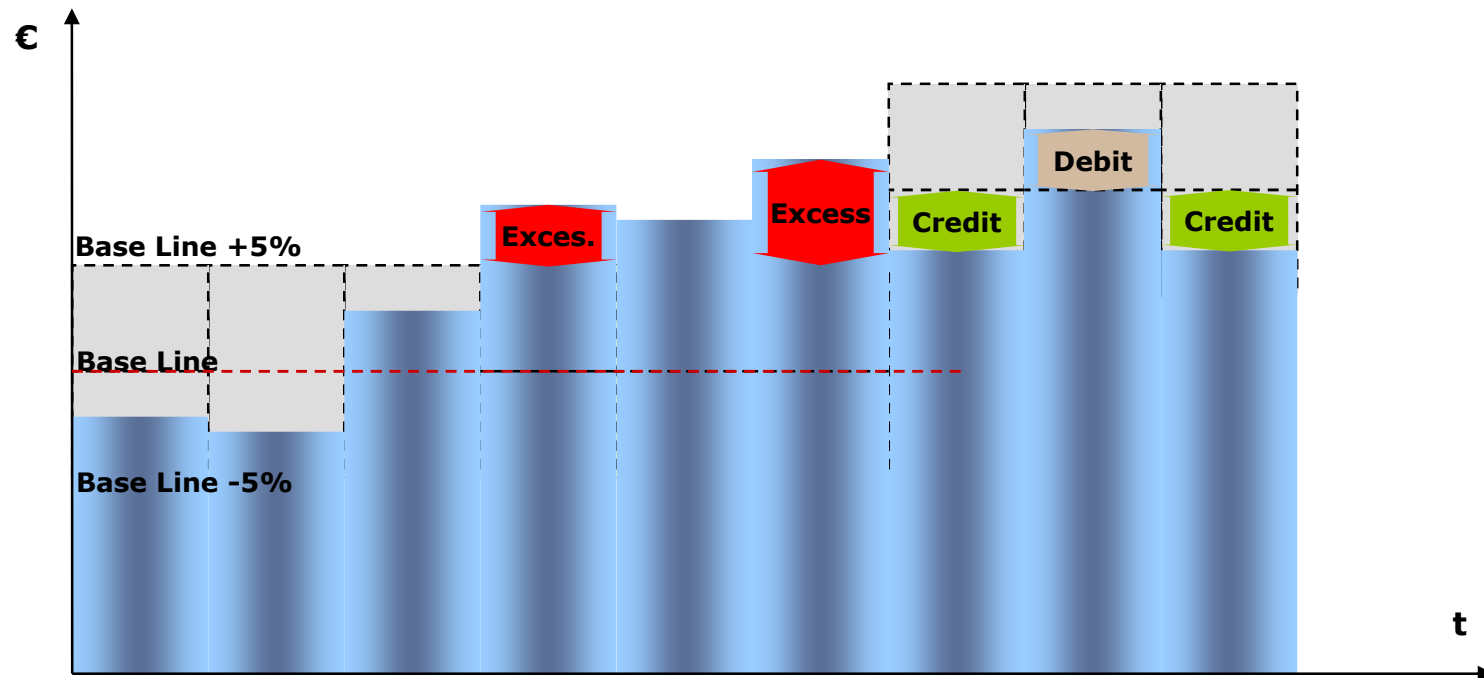**Operational**

Operational Team

PROJECT TEAM

To minimize the level of burden from the client's perspective

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Operation Phase

Baseline Management

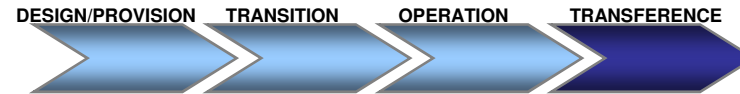- *Production capacity based on an estimated production baseline:*
  FTEs fulltime equivalents

- *Baseline established using historical data, experience on previous projects*

- *Credits and Debits are accumulated separately*
- *The excess is invoiced separately, applying previously agreed rates for each activity*
- *Revisions agreed with the client & a new baseline can be agreed as necessary*

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Transfer Phase

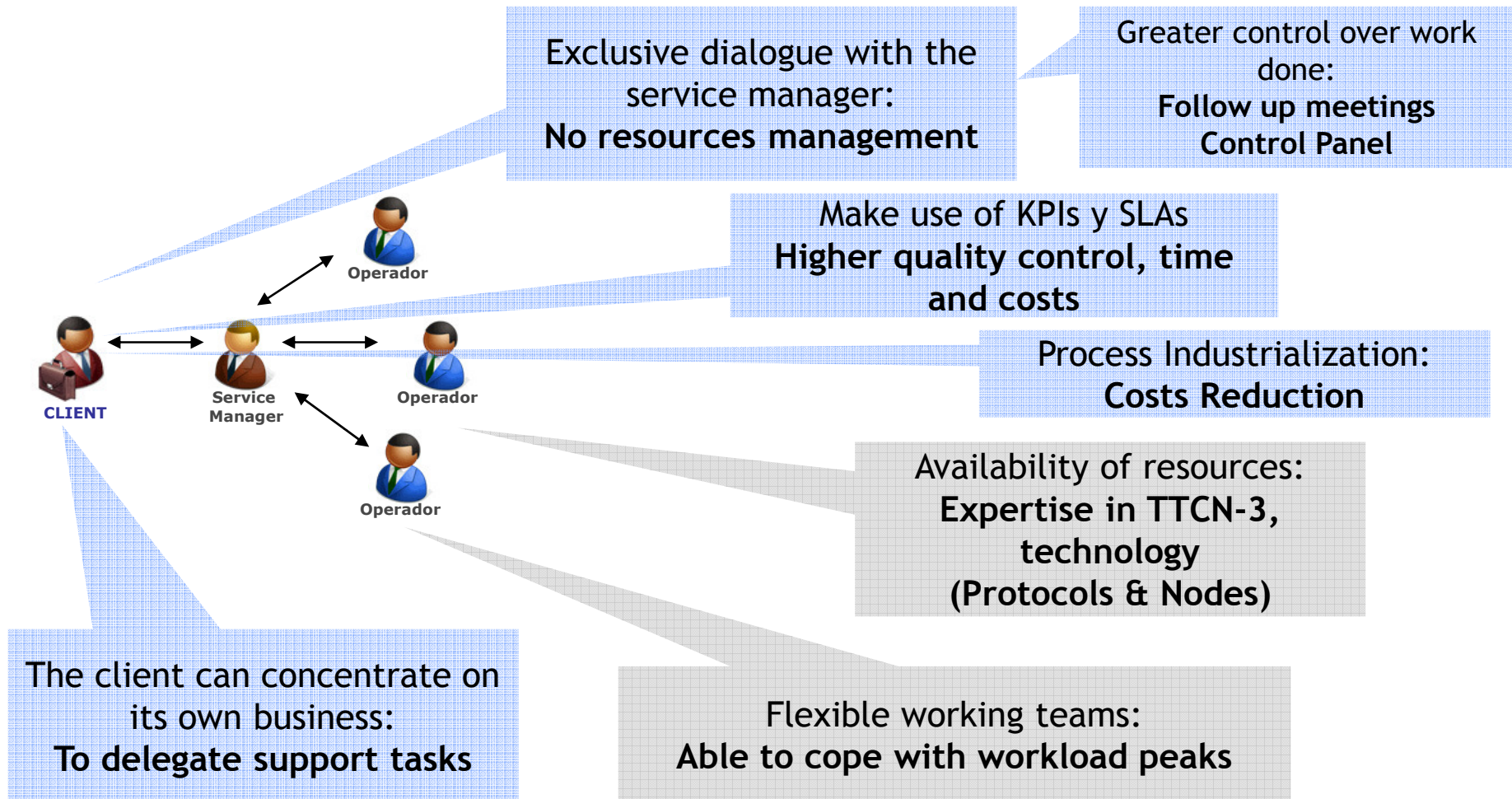DESIGN/PROVISION TRANSITION OPERATION TRANSFERENCE

Activities to transfer the TTCN-3 service back to the client

TRANSFERENCE

- *Training Activities: TTCN-3 scripts & framework*
- *Closing activities:*
  - *Security: i.e. passwords*
  - *Documentation Delivery*

Advantages of Outsourcing TTCN-3 Projects

Exclusive dialogue with the service manager:
No resources management

Greater control over work done:
Follow up meetings
Control Panel

Make use of KPIs y SLAs
Higher quality control, time and costs

Process Industrialization:
Costs Reduction

Availability of resources:
Expertise in TTCN-3, technology
(Protocols & Nodes)

CLIENT

Operador

Service Manager

Operador

Operador

The client can concentrate on its own business:
To delegate support tasks

Flexible working teams:
Able to cope with workload peaks

OUTSOURCED TTCN-3 PROJECTS CAN BRING GREATER EFFICIENCY AT COMPETITIVE COSTS
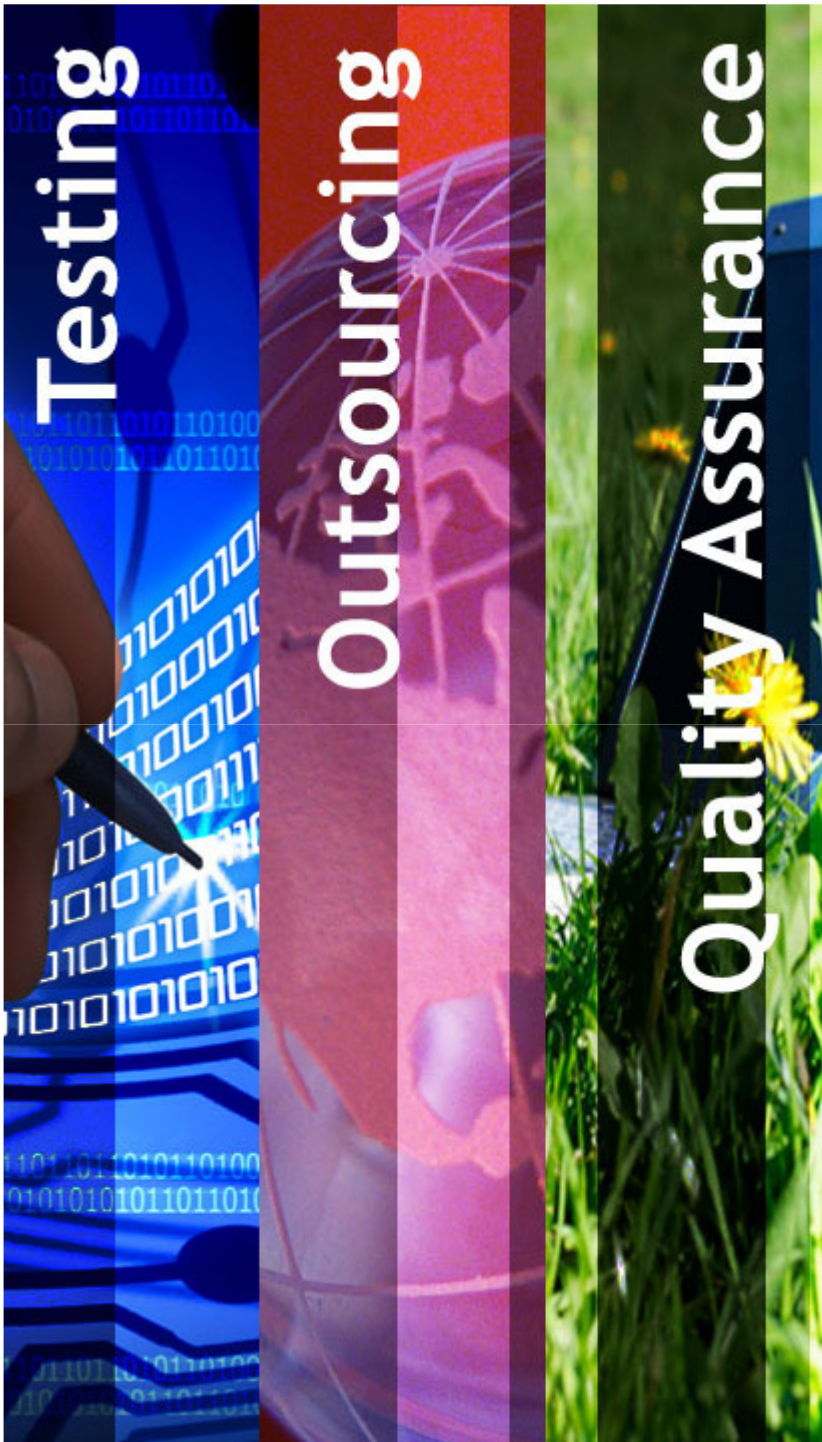
Issues to consider when outsourcing

The TTCN-3 offshore service has to be:

- *CLEARLY DEFINED*
  - *Clear requirements defined by the client*
  - *Support available from the client to the TTCN-3 team offshore*

- *CONTROLLED AND MONITORED*
  - *Indicators are part of the contract*
  - *KPIs, SLA, Process Based, Relationship model*

- *EFFICIENT*
  - *Able to cope with agreed overload*
  - *Flexible Team Structure & Specialized Personnel*

Any Questions?

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