

---

## Object: Feasibility study for a conformance testing center

### *List of contents*

- Objective of the feasibility study
  - Scope
  - Content overview
- Necessity of type approval
- Quality aspect (ISO 9000 and EN 17025)
  - Process definition (quality manual and procedures)
  - Reference standards
  - Documentation management
  - Quality improvement and management
  - Internal auditing
- Resource management and organization
  - Staff organization
  - Staff selection
  - Weekly reporting and KPI evaluation
  - Know How maintenance
    - Training courses organization
    - Personnel competency matrix
    - Standardization activity
    - International projects
- Vendor management
  - Vendor relationship
  - Joint Testing (outsourcing-insourcing)
  - Testing park
- Test list life cycle & management
  - design
  - maintenance
- Investment & cost estimation
  - Investment areas
    - Technological gaps
    - Evolutionary maintenance
    - Instrumentation duplication (efficiency improvement)
    - Support systems (simplification and automation)
  - Investment priorities in relation to investment areas
  - CAPEX: Total cost of ownership in relation to new investment
  - OPEX: Instrumentation maintenance & service externalization
  - Purchasing management
    - Technical specification definition
    - Call for tender
- Test campaign management
  - Testing process
    - stand alone
    - end to end
    - emulation in test plant

- field trial
  - service stability
- Bugs tracking
- Release management (N, N+1)
- Test campaign planning
- Mailing list utilization
- Item under test management
- Resource allocation
- Measurement uncertainty evaluation
  - Guide to the expression of Uncertainty in Measurement (GUM)
  - Results management inside uncertainty range
- Test plant and lab management
  - Energy saving
    - Energy monitoring
    - Saving possibilities:
      - Air conditioning / free cooling correct design
      - Correct lighting design and management
      - Integration with renewable resources
  - Environmental impact
  - Safety aspects
  - Security and access control
  - Instrumentation remote control
    - Execution time optimization
    - Use of teleworking and overtime work
    - Test set up control methods (Labview, VEE, etc.)
    - Remote equipment configuration and computer remote control
    - Use of control rooms and noise insulation
    - Power source socket remote control
  - Instrumentation maintenance
    - Correct recording procedures
    - Software maintenance and upgrade
    - Repairing processes
    - Calibration processes
- Conclusion

---

Appendix: Type Approval Laboratories (TAL) and test plant infrastructure

- Type Approval Labs
  - Value Added Services (VAS)
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  - SAR
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  - EMC
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  - Electrical safety & protection
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  - Powering
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)

- 
- Quality of material
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  
  - Personal Area Network (WiFi, Zig Bee)
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  
  - Instrumentation management & metrology
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  
  - Broadband Access
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  
  - Electroacoustic
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  
  - Radio lab
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
-

- 
- User experience
    - Scope of the lab
    - List of testing services
    - Reference standards
    - Test equipment set up & instrumentation
    - Personnel competency matrix
    - Location suitability (square meters, conditioning, etc)
  - User terminal testing process
    - Mobile terminal testing
    - Customer Premises Equipment testing
  - Test Plant
    - Fixed network test plant
    - Mobile network test plant

List of acronyms

References