



ITU Training Course on “Homologation Procedures & Type Approval Testing for Mobile Terminals for ARB Region”

Tunis, Tunisia, 17–22 March 2014



Objective >>>>



Theme	Duration	Trainer
Part 1 : Tunisian approach in terms of type approval, conformity and technical control	1 day	Chokri Ben Hadj Yahia
Part 2 : Electronic procedures of approval and technical Control	1 day (including Visit)	Abdelkarim Chammem
Part 3 : Approval of telecommunications terminals Test and measurements	3 days (including practice in CERTLabs)	Zied Salhi



Part 1 : Tunisian approach in terms of type approval, conformity and technical control

Tunis, Tunisia, 17–22 March 2014



- I. One-stop shop Establishment
- II. Approval procedure
- III. Conformity control procedure
- IV. Technical control procedure



In order to simplify administrative and technical procedures of conformity of telecommunication equipments and to provide a single interface for importers and manufacturers, a one stop shop was created under CERT.



CREATION

- Created under the Research and Studies Telecommunications Center (CERT)
- Following the Decree N° 2639 of July 21th, 2008.

MISSION

Provide administrative authorizations for electronic equipment and communication systems in following cases :

- Importation (*for public use*)
- Commercialization

ARCHITECTURE

The One-stop shop is composed of the following offices:

Administrator



*Research and Studies
Telecommunications
Center Office (CERT)*



*Electronic Certification
National Agency Office
(ANCE)*



*National Frequency
Agency Office (ANF)*



ARCHITECTURE

The One-stop shop is composed of the following offices:

a- The administrator Office:

In charge of the following internal offices:

- Orientation
- Cash desk
- Storage
- Coordinator



Mission:



- Coordination with the different offices
- Dispatching files/requests

ARCHITECTURE

The One-stop shop is composed of the following offices:

*b- The Research and Studies
Telecommunications Center Office
(CERT):*



- Delivers to the administrator the test reports generated by the Type approval Lab. 
- Sends files for treatment to the Type approval Lab 

ARCHITECTURE

The One-stop shop is composed of the following offices:

c- The National Frequency Agency Office (ANF):



- Responsible for the study of files related to radio communication equipments (using radio frequency)

ARCHITECTURE

The One-stop shop is composed of the following offices:

*d- The Electronic Certification
National Agency Office (ANCE) :*



- Responsible for the study of files related to the equipment and electronic systems containing data encryption means.
- Delivers to the administrator :
 - Approval certificates
 - Importation or commercialization authorizations



REGULATORY FRAMEWORK

The approval procedure of the telecommunications equipment is organized by the following laws and decrees:

a. Laws:

- Law No 2001-1 of January 15th 2001 related to the promulgation of telecommunications code.
 - Article 32: are subject to preliminary approval, the telecommunications terminals imported or manufactured in Tunisia and intended for commercialization or public use, intended or not intended to be connected to the public telecommunication network.*

b. Decrees:

- Decree No 2001-830 of April 14th, 2001, related to the approval of telecommunication terminals and the radio communication terminals.

- Decree No 2008-2639 of July 21st, 2008, fixing the conditions and the procedures of importation and commercialization of encryption means or services through the telecommunication networks.



REGULATORY FRAMEWORK

The approval procedure of the telecommunications equipment is organized by the following laws and decrees:

c. Orders :

- Order of the Communication Technologies Minister on February 11th, 2002 related to the approval of the National Frequency Plan

- Order of the Industry and technology Minister of November 22th, 2011, setting the maximum power and the limit of the radio range of equipment of low power and limited range



TYPE APPROVAL APPLICANT

- The application for approval of telecommunications equipment may be submitted by the manufacturer, its agent, or an approved importer for commercial use.

EQUIPMENTS SUBJECT TO TYPE APPROVAL

- Any telecommunications equipment to be connected directly or indirectly to a public telecommunication network.
- Any telecommunications equipment having undergone changes, subsequent to its approval, that made him not compliant with the technical specifications on the basis of which it has been approved, (*new approval is needed*).



EQUIPMENTS SUBJECT TO TYPE APPROVAL

a- Equipment type :

- Telecommunications terminals,
- Cryptographic means,
- Radio terminals.

b-Source :

- Imported from abroad,
- Made in Tunisia.

c-Destination :

- Commercialization,
- Public use.



TECHNICAL FRAMEWORK

The type approval aims to:

Check the conformity with the requirements of the regulation and standards (Tunisian and International).

These requirements cover :

- The safety of users,
- The safety of staff operating in public telecommunications networks,
- The protection of the public telecommunications networks,
- The optimum use of the radio spectrum.



CERTIFICATE OF APPROVAL

Every telecommunication equipment should be subject of an individual request for certificate of approval taking into account the following identifications:

- Product Type,
- Product Brand,
- Product Model.

- The validity of the type approval certificate is **three years** from the date of grant.
- The certificate of approval of a telecommunications terminal is **nominative; specific** for each company and **can not in any way be used by a third party.**
- Every terminal equipment **must be approved** before any import transaction for trade.

GENERATION OF THE CERTIFICATE OF APPROVAL

Approval certificates are issued by the one stop shop of the CERT after evaluation of various stakeholders namely:





STEPS FOR OBTAINING A CERTIFICATE OF APPROVAL

The application for a certificate of approval of a telecommunications equipment consists of two files divided as follows :

a-Submission of a “Removal for approval Application”, including the following documents :

- Application Form (Delivered by CERT),
- Invoice,
- Certificate of origin or equivalent,
- Packing list ,
- Arrival notice ,
- Technical specifications.

Deadlines
24 hours from the date of
submission of a complete request.



STEPS FOR OBTAINING A CERTIFICATE OF APPROVAL

The application for a certificate of approval of a telecommunications equipment consists of two files divided as follows :

b-Submission of “Approval Certificate Application” including the following parts:

- Application Form (Delivered by CERT),
- Copy of the authorization of removal for approval,
- Technical documents: specifying the interfaces contained in the equipment,
- User manual,
- Tests Report ,
- Conformity Certificate ,
- Specimens of the equipment to be approved.

Deadlines
10 days / per organization from the
date of filing of a complete request
of approval.



1-Equipments subject to conformity check

- Telecommunications terminals,
- Radio communications terminals.

2-Type of use:

- Natural person
- Legal person

3-Type of tests :

- Functional test,
- Measurement on the test bench,
- Check of characteristics.



4-Conformity Requirements:

- Conform to the technical requirements of interworking with the public telecommunications network.
- Conform to the rules of use and operating frequency.
- Conform to the standards and standard required for the proper operation of the product.



5-Steps for obtaining a certificate of conformity:

The application for “Certification of Conformity” of telecommunications equipments consists of two files divided as follows:

a-Submission of an application for withdrawal for conformity, including the following parts:

- Application Form (Delivered by CERT),
- Invoice,
- Certificate of origin or equivalent,
- Packing list ,
- Arrival notice ,
- Technical documentation,
- Commitment Form,
- ANF Approval (for radio terminal equipments).

Deadlines
24 hours from the date of
submission of a complete request.



5-Steps for obtaining a certificate of conformity:

The application for “Certification of Conformity” of telecommunications equipments consists of two files divided as follows:

b-Submission of an application for certification of conformity with the following parts :

- Form,
- Copy of the authorization of withdrawal for conformity,
- Technical documentation,
- User manual,
- Equipment.

Deadlines
10 days / per organization from the
date of filing of a complete request
of conformity certificate.



Importation of some telecommunications equipment is subject to the operation of technical control that consists of :

- Checking of conformity of the samples compared to the product already approved.
- Measurement on the test bench.

Importer must fill of following conditions in advance:

- The Product have to be already approved on the name of the importer itself,
- Has a suitable license (permit of importation).

The approval type is determined by the nature of the equipment, there are 3 categories:

- Radio Type:** TR (Transmitter / Receiver, Access Point, Mobile Terminal ...)
- Cable Type :** TF (Fixed phone, switchboard,...)
- Data Type :** TD (Fax, Modem, Router,...)



Steps for obtaining an authorization of release for consumption :

- Authorization for provisional removal
- Authorization for consumption

Step 1:

Request for an authorization for provisional removal :

- Directly at the one stop shop
- From the website (virtual one stop shop)

Step 2:

- Study The file
- Generation of the Authorization for provisional removal
- Customer proceed to the removal of its goods for the store in its premises



Steps for obtaining an authorization of release for consumption :

Step 3:

- * Deposit of a request for an "Authorization for consumption."
 - Directly at the one stop shop
 - From the website (virtual one stop shop)

- * CERT controller performs:
 - Inspection,
 - Taking samples
 - Dispatching to the laboratory for analysis and testing



Steps for obtaining an authorization of release for consumption :

Step 4:

Issuance of the final decision by the One Stop Shop after receiving the results of analyzes of samples :

- Imported product in conformity with the product already approved
 - ⇒ Authorization for consumption

- Imported product not in conformity with the product already approved
 - ⇒ Choose one of the following decisions:
 - Refoulement of goods
 - Destruction of goods
 - Re-approval of the product



Application

The application for “authorization of release for consumption” of telecommunications equipments consists of two files divided as follows:

a-Submission of an application for of a provisional authorization of removal including the following parts:

- Application Form(Delivered by CERT),
- Invoice,
- Certificate of origin or equivalent,
- Packing list ,
- Arrival notice ,
- Approval Certificate,
- Suitable agreement.

Deadlines
24 hours from the date of
submission of a complete request.



Application

b-Submission of an application form of “authorization of release for consumption” including the following parts:

- Application Form (Delivered by CERT),
- Copy of the provisional authorization of removal APE,
- customs goods declaration ,
- Payment receipt,
- Serial numbers list.

Deadlines
03 days / per organization from the
date of taking samples



“
thankyou for
your **ATTENTION**
:)”

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Part 2: Electronic procedures of approval and technical Control

March 2014



- ❖ Objective
- ❖ Introduction
- ❖ Procedures
- ❖ Customer management demand
- ❖ Information system
- ❖ One Stop Shop online services
- ❖ Statistics
- ❖ Conclusion



- ✓ Define and describe procedures,
- ✓ Control of approval procedures,
- ✓ Study and process of demands,
- ✓ Define and understand information system,
- ✓ Introduce procedure in an information system
- ✓ Automate procedure,






Control and examination organisms play a major role in security of property and of persons. They are involved in many areas of control such as: Industrial, electrical installations, welding, snap-on apparatus, food processing industry, health, environment, building, tourism, information and communication technology (ICT).



In this context, the One-Stop Shop of Information and Communication Technology has been created by decree 2639 on 21 July 2008 in order to provide administrative authorizations dealing with import operations and commercialization systems.



It includes representatives of various stakeholders working in the field of Information Technology and Communication, it is composed of the following offices :

- ✓ Office of Research and Studies Telecommunications Center (CERT), 
- ✓ Office of National Frequencies Agency (ANF), 
- ✓ Office of the National Digital Certification Agency (ANCE), 

a) Definition

In terms of approval and technical control, procedure is an orderly and formal description of series of operations and instructions to make the relevant system, consistent, shared, reliable, and credible. It specifies in particular:



- ✓ Different tasks and their modalities of execution,
- ✓ The respective responsibilities of the different dealers or operators,
- ✓ The methods of establishment of the different documents necessary for administrative, financial, accounting, operational and technical management,
- ✓ Modality control at every stadium of the system information.

b) Advantages

Written procedures, validated and integrated in business applications allows each agent to:

- ✓ Act with perfect knowledge of the system,
- ✓ Process documents according to the pre-defined conventions easily,

They represent also

- ✓ An efficient tool of training for newly recruited, transferred or appointed provisionally employee
- ✓ A written support for the execution of daily's agent tasks
- ✓ A means of self control tasks for agents
- ✓ Monitoring tools for internal and external auditors



a) Type of products subjected to approval and to technical import control

Are subject to the prior approval, telecommunications terminals intended for commercialization or public use, whether imported or manufactured locally and radio terminals intended to be connected or not to a public telecommunications network.



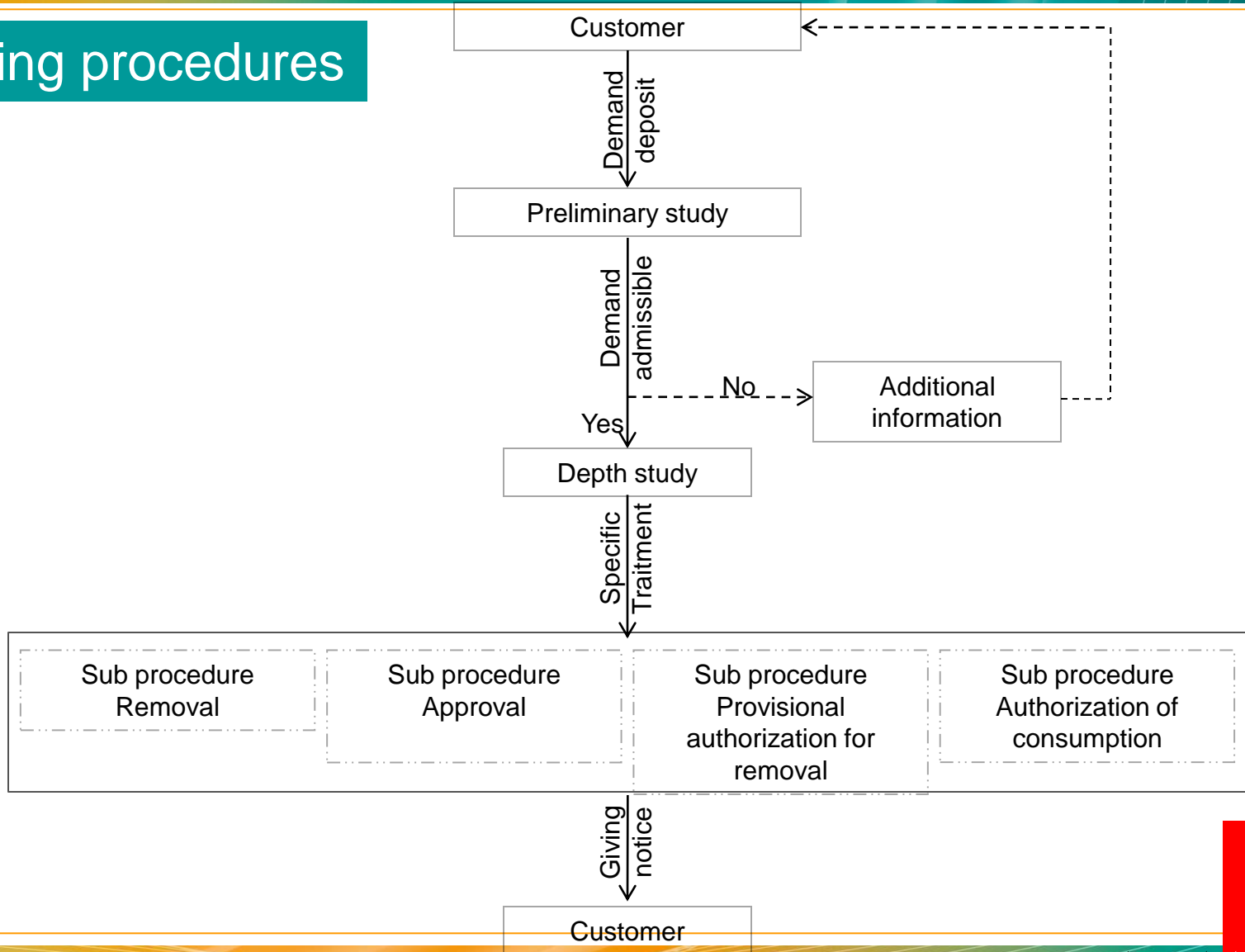


The imported telecommunication terminals and equipments can be subject to a Technical Control Compliance with standards and national or international technical regulations.

b) Customer's request types

- ✓ Removal for approval authorization
- ✓ Approval certificate
- ✓ Removal for conformity authorization
- ✓ Certificate of conformity
- ✓ Provisional authorization for removal
- ✓ Authorization of consumption

c) Processing procedures





c) Processing procedures (Example)

PHSAE I: Electronic processing at orientation
Verification and transmission of files submitted by customer via online services to the coordinator.

PHASE II. Electronic processing at Coordination

Depth study and transmission of digital and paper file to the One-Stop Shop manager.

c) Processing procedures (Example)

PHASE III. Electronic processing at the One-Stop Shop manager

Validation and electronic transmission of the file to Type Approval Lab (CERT Las) and to the head office of the National Digital Certification Agency (ANCE) followed by a physical transfer of the file to the index unit.



c) Processing procedures (Example)

PHASE IV. Processing at Type Approval Lab

- ✓ Retrieving of demands of the Authorization of consumption from the indexing unit,
- ✓ Levy with double sampling for CERT and ANCE,

c) Processing procedures (Example)

- ✓ Deposit samples relating to the treatment by CERTLabs to the store of the One-Stop Shop against receipt,
- ✓ Deposit of samples related to the treatment by ANCE lab against receipt,

c) Processing procedures (Example)

✓ Transfer of a copy of the receipt validated by responsible of store of the ANCE to the indexing unit responsible.

PHASE V. Treatment at Store

Qualitative and quantitative check followed by an immediate insertion of information related to the samples in the application.

c) Processing procedures (Example)

PHASE VI. Processing at the ANCE office

- ✓ Delivery of samples to the store of One-Stop Shop upon signature of the head office of the National Digital Certification Agency corresponding to the delivery after quantitative and qualitative samples verification.

c) Processing procedures (Example)

- ✓ Insertion of scanned certifications and their corresponding data in the application,
- ✓ Presentation of certificates of compliance to the responsible of indexing unit through a receipt already signed by the responsible of the store after verification of data and their reliability on the application.



d) Customer's samples management

An organization of technical control or a measurement laboratory should have a store in its places to take delivery of samples taken by the inspector or deposited directly by the importer.



d) Customer's samples management

The reception of these samples, their stocking, their return and all the input and output movements have to be managed by a written procedure.



d) Customer's samples management

The automation of this procedure using a Workflow included into a module of management of samples will provide a quick access to the various locations of products.



d) Customer's samples management

The responsible of the store must index the locations of samples while creating zones (zones of products object of requests of approvals, a second zone reserved for articles object of requests of conformity, a third one for those of technical import control).



d) Customer's samples management

The place of warehousing of samples must be a sure place secured and monitored by surveillance cameras. It is primordial that it is not wet or basement to preserve the proper functioning of the product and to avoid any flood disaster.



d) Customer's samples management

The IT management module of these samples should include mandatory fields such as:

- ✓ The type or designation,
- ✓ The brand name,
- ✓ The model,
- ✓ The quantity,



d) Customer's samples management

- ✓ The customer name,
- ✓ The serial number,
- ✓ The folder reference,





a) Definition

An information system (IS) is a group organized by resources (hardware, software, personnel, staff, data and procedures) who allows to collect, to regroup, to classify, to deal and to broadcast information in a given environment.



a) Definition

The perimeter of the term Information System can vary from an organization to other and can cover, depending on circumstances, all or part of the following elements.



- ✓ Data base entreprise,
- ✓ Tool of Customer Relationship Management,
- ✓ Business applications,
- ✓ Network infrastructure,
- ✓ Data servers and storage systems,
- ✓ Application servers,
- ✓ Security device.



b) objectives

The information system coordinates the activities of the organization. It is the vehicle of communication in the organization. Besides, IS represent all resources and systems (persons, material, software) organized for following objectives:



- ✓ The optimization of the processes of management
- ✓ The coherence and homogeneity of information (the single file articles, the single file clients, etc.) who allows to respect norms,
- ✓ Integrity and uniqueness of the information System,
- ✓ Sharing the same information system facilitating internal communication or mobility.

b) Business Applications

1. Objectives

- ✓ Computerize and automate approval and technical control processes,
- ✓ Ensuring the effectiveness and speed of processing customer requests,
- ✓ Ensure transparency of approval procedures and technical control,



b) Business Applications

- ✓ Reduce the time required for the clearance of samples,
- ✓ Guarantee an adequate service and a better quality,
- ✓ Favour communication between colleagues,



b) Business Applications

- ✓ The implementation of an integrated risk management at each technical control agency to optimize system controls.
- ✓ The establishment of a local and online database of approval regulations and technical control.



b) Business Applications

- ✓ Ensure a quick and secure access to data.

These objectives should be achieved while ensuring compliance with national regulations and without prejudice to the interests of customers.



b) Business Applications

2. Role

The different applications of the One-Stop Shop besides their simplicities use, they were developed in order to ensure:

- ✓ Customer Management Applications,
- ✓ Management of additional information,



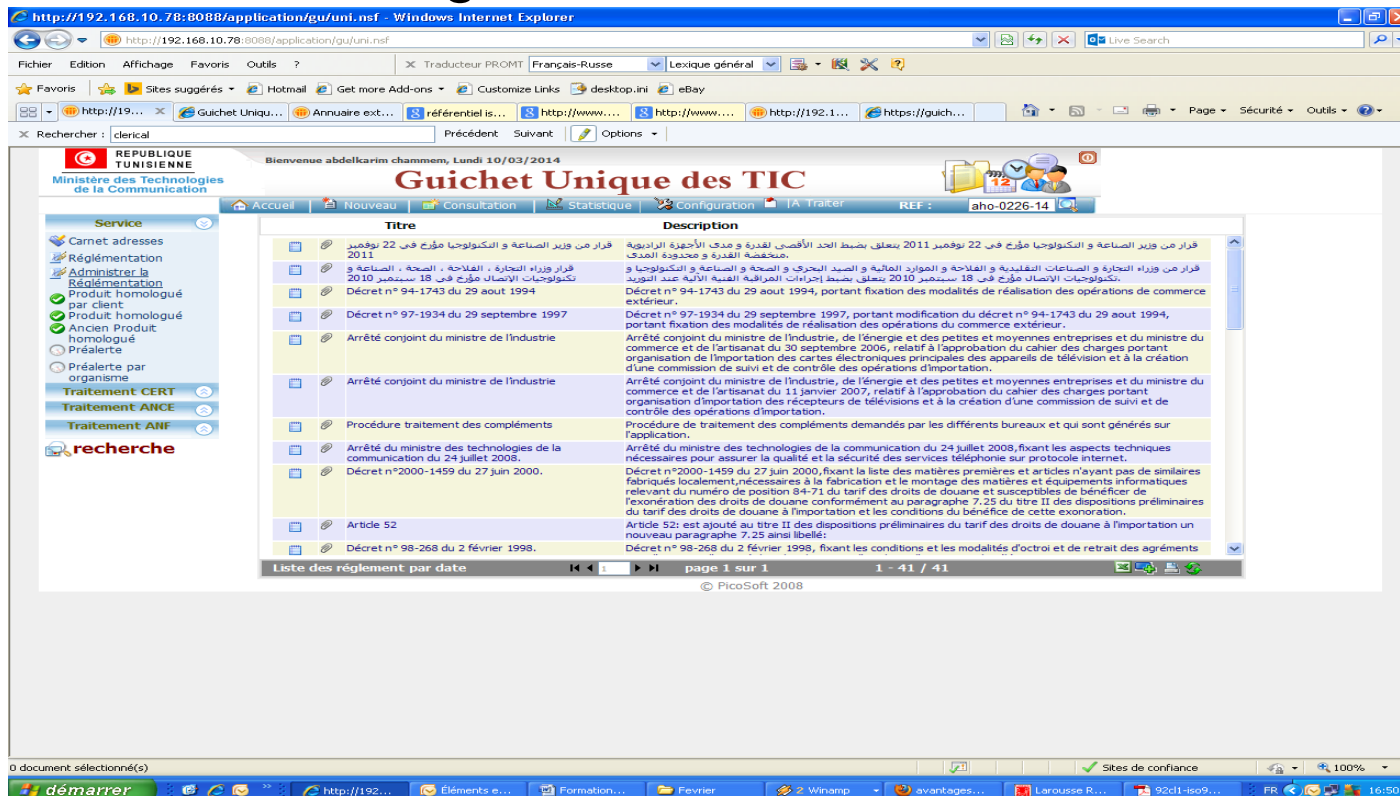
b) Business Applications

- ✓ Management of customer samples,
- ✓ Management of requests processing delays,
- ✓ Management of tasks of different stakeholders,
- ✓ Electronic Document Management,

b) Business Applications

3. Modules to be integrated

✓ Consultation of regulation,

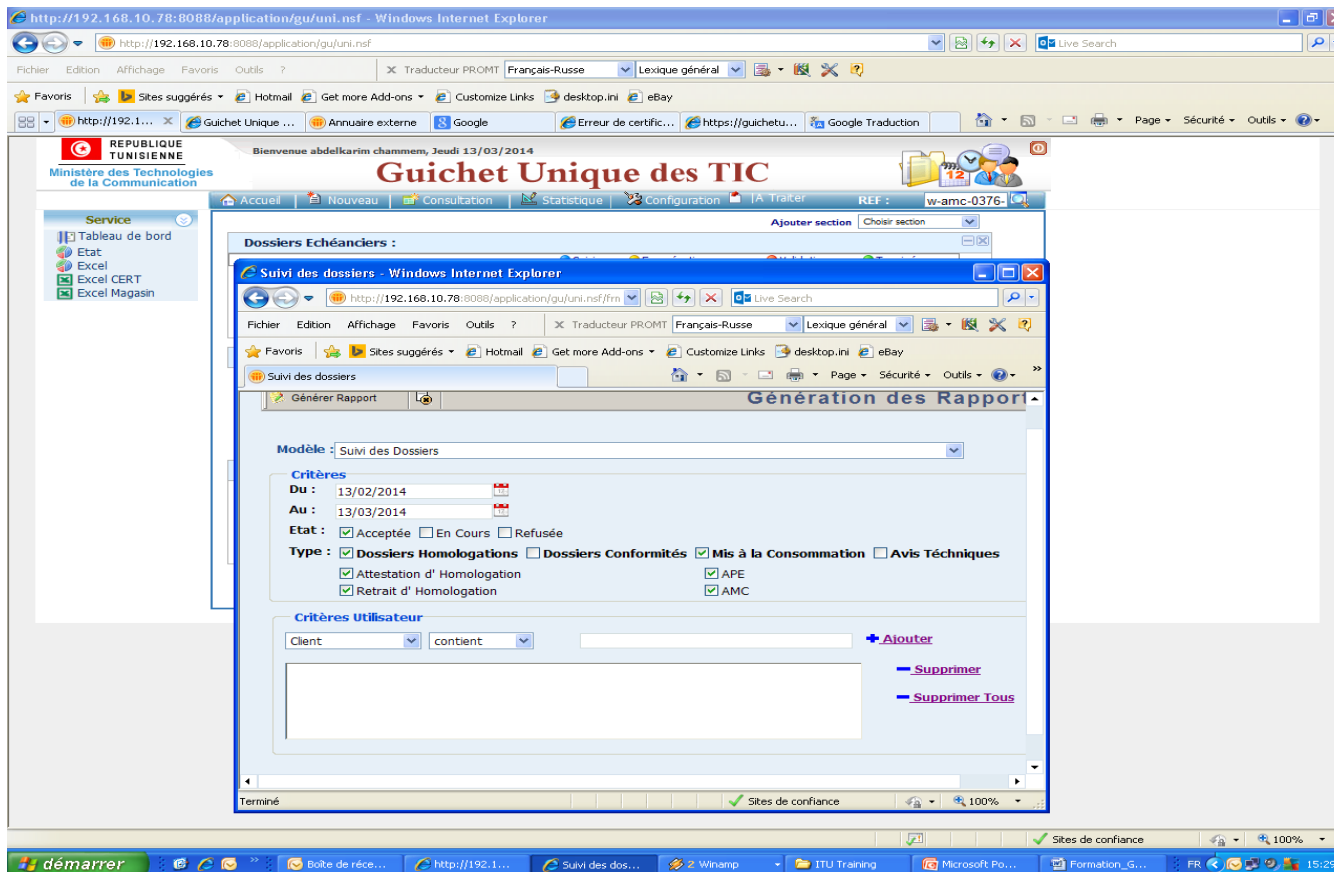


The screenshot shows a web browser window displaying the 'Guichet Unique des TIC' website. The page title is 'Guichet Unique des TIC' and the URL is 'http://192.168.10.78:8088/application/gu/uni.nsf'. The page content includes a navigation menu on the left with options like 'Service', 'Carnet adresses', 'Réglementation', and 'recherche'. The main content area displays a table of regulations with columns for 'Titre' and 'Description'. The table lists various decrees and arrêtés, including 'Décret n° 94-1743 du 29 août 1994', 'Décret n° 97-1934 du 29 septembre 1997', and 'Décret n° 2000-1459 du 27 juin 2000'. The page footer indicates 'page 1 sur 1' and '© PicoSoft 2008'.

Titre	Description
قرار من وزير الصناعة و التكنولوجيا مؤرخ في 22 نوفمبر 2011	قرار من وزير الصناعة و التكنولوجيا مؤرخ في 22 نوفمبر 2011 يتعلق بضبط الحد الأقصى لقدرة و مدى الأجهزة الراديوية منخفضة القدرة و محدودة المدى.
قرار وزراء التجارة ، الفلاحة ، الصحة و الصناعة و تكنولوجيا المعلومات المؤرخ في 18 سبتمبر 2010	قرار من وزراء التجارة و الصناعات التقليدية و الفلاحة و الموارد المائية و الصيد البحري و الصحة و الصناعة و التكنولوجيا و تكنولوجيا المعلومات المؤرخ في 18 سبتمبر 2010 يتعلق بسطة الإجراءات الترابية الفنية الألية عند التوريد.
Décret n° 94-1743 du 29 août 1994	Décret n° 94-1743 du 29 août 1994, portant fixation des modalités de réalisation des opérations de commerce extérieur.
Décret n° 97-1934 du 29 septembre 1997	Décret n° 97-1934 du 29 septembre 1997, portant modification du décret n° 94-1743 du 29 août 1994, portant fixation des modalités de réalisation des opérations du commerce extérieur.
Arrêté conjoint du ministre de l'industrie	Arrêté conjoint du ministre de l'industrie, de l'énergie et des petites et moyennes entreprises et du ministre du commerce et de l'artisanat du 30 septembre 2006, relatif à l'approbation du cahier des charges portant organisation de l'importation des cartes électroniques principales des appareils de télévision et à la création d'une commission de suivi et de contrôle des opérations d'importation.
Arrêté conjoint du ministre de l'industrie	Arrêté conjoint du ministre de l'industrie, de l'énergie et des petites et moyennes entreprises et du ministre du commerce et de l'artisanat du 11 janvier 2007, relatif à l'approbation du cahier des charges portant organisation d'importation des récepteurs de télévisions et à la création d'une commission de suivi et de contrôle des opérations d'importation.
Procédure traitement des compléments	Procédure de traitement des compléments demandés par les différents bureaux et qui sont générés sur l'application.
Arrêté du ministre des technologies de la communication du 24 juillet 2008.	Arrêté du ministre des technologies de la communication du 24 juillet 2008, fixant les aspects techniques nécessaires pour assurer la qualité et la sécurité des services téléphonie sur protocole internet.
Décret n°2000-1459 du 27 juin 2000.	Décret n°2000-1459 du 27 juin 2000, fixant la liste des matières premières et articles n'ayant pas de similaires fabriqués localement, nécessaires à la fabrication et le montage des matières et équipements informatiques relevant du numéro de position 84-71 du tarif des droits de douane et susceptibles de bénéficier de l'exonération des droits de douane conformément au paragraphe 7.25 du titre II des dispositions préliminaires du tarif des droits de douane et les conditions de cette exonération.
Article 52	Article 52: est ajouté au titre II des dispositions préliminaires du tarif des droits de douane à l'importation un nouveau paragraphe 7.25 ainsi libellé:
Décret n° 98-268 du 2 février 1998.	Décret n° 98-268 du 2 février 1998, fixant les conditions et les modalités d'octroi et de retrait des agréments

b) Business Applications

- ✓ Statistics and reporting,



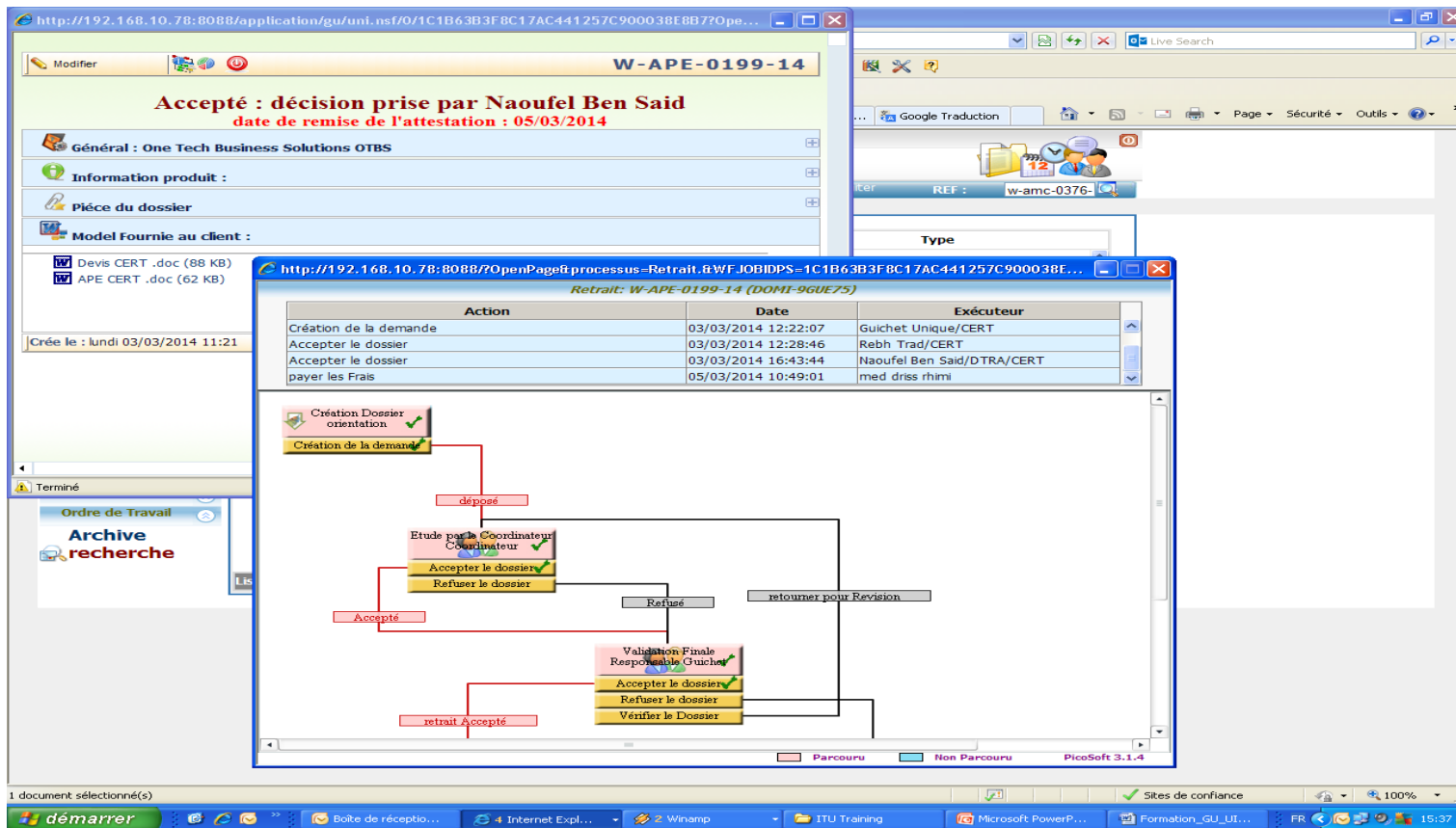
The screenshot displays a web browser window with the URL `http://192.168.10.78:8088/application/gu/uni.nsf`. The page title is "Guichet Unique des TIC" and it is part of the "REPUBLICQUE TUNISIENNE" website. The main content area shows a "Suivi des dossiers" (Follow-up of files) section with a "Génération des Rapports" (Report Generation) sub-section. The "Génération des Rapports" form includes the following fields and options:

- Modèle:** Suivi des Dossiers
- Critères:**
 - Du:** 13/02/2014
 - Au:** 13/03/2014
 - Etat:** Acceptée En Cours Refusée
 - Type:** Dossiers Homologations Dossiers Conformités Mis à la Consommation Avis Techniques
 - Attestation d' Homologation APE
 - Retrait d' Homologation AMC
- Critères Utilisateur:**
 - Client: [dropdown] contient [dropdown] [input type="text"]
 - + Ajouter
 - Supprimer
 - Supprimer Tous

The interface also shows a sidebar with "Service" options like "Tableau de bord", "Etat", "Excel", "Excel CERT", and "Excel Magasin". The browser's taskbar at the bottom shows the Windows Start button and several open applications including "Boîte de réception", "Suivi des dos...", "Winamp", "ITU Training", "Microsoft Po...", and "Formation_G...".

b) Business Applications

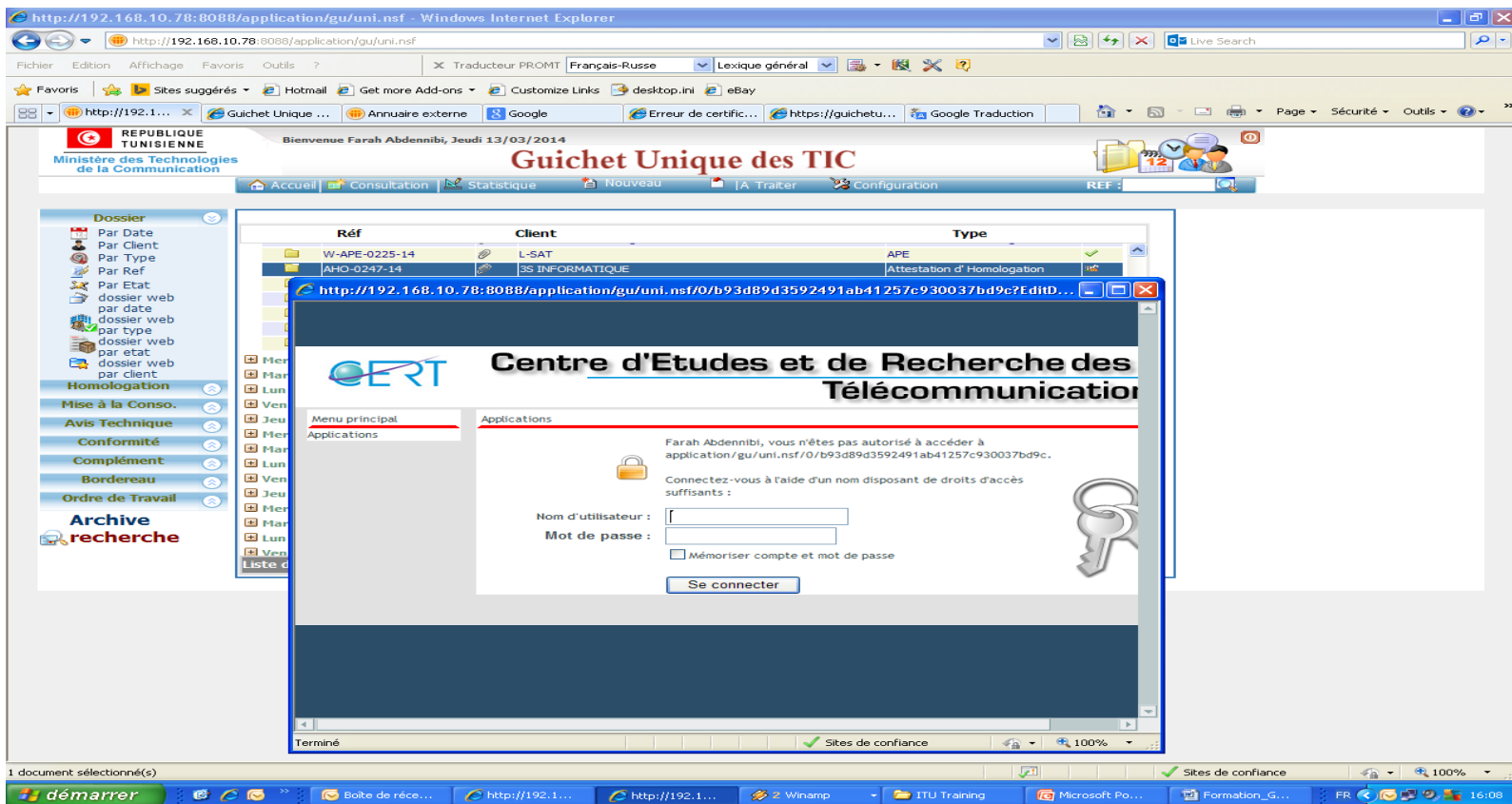
- ✓ Workflow to ensure traceability,



Action	Date	Exécuteur
Création de la demande	03/03/2014 12:22:07	Guichet Unique/CERT
Accepter le dossier	03/03/2014 12:28:46	Rebh Trad/CERT
Accepter le dossier	03/03/2014 16:43:44	Naoufel Ben Said/DTRA/CERT
payer les Frais	05/03/2014 10:49:01	med driss rhimi

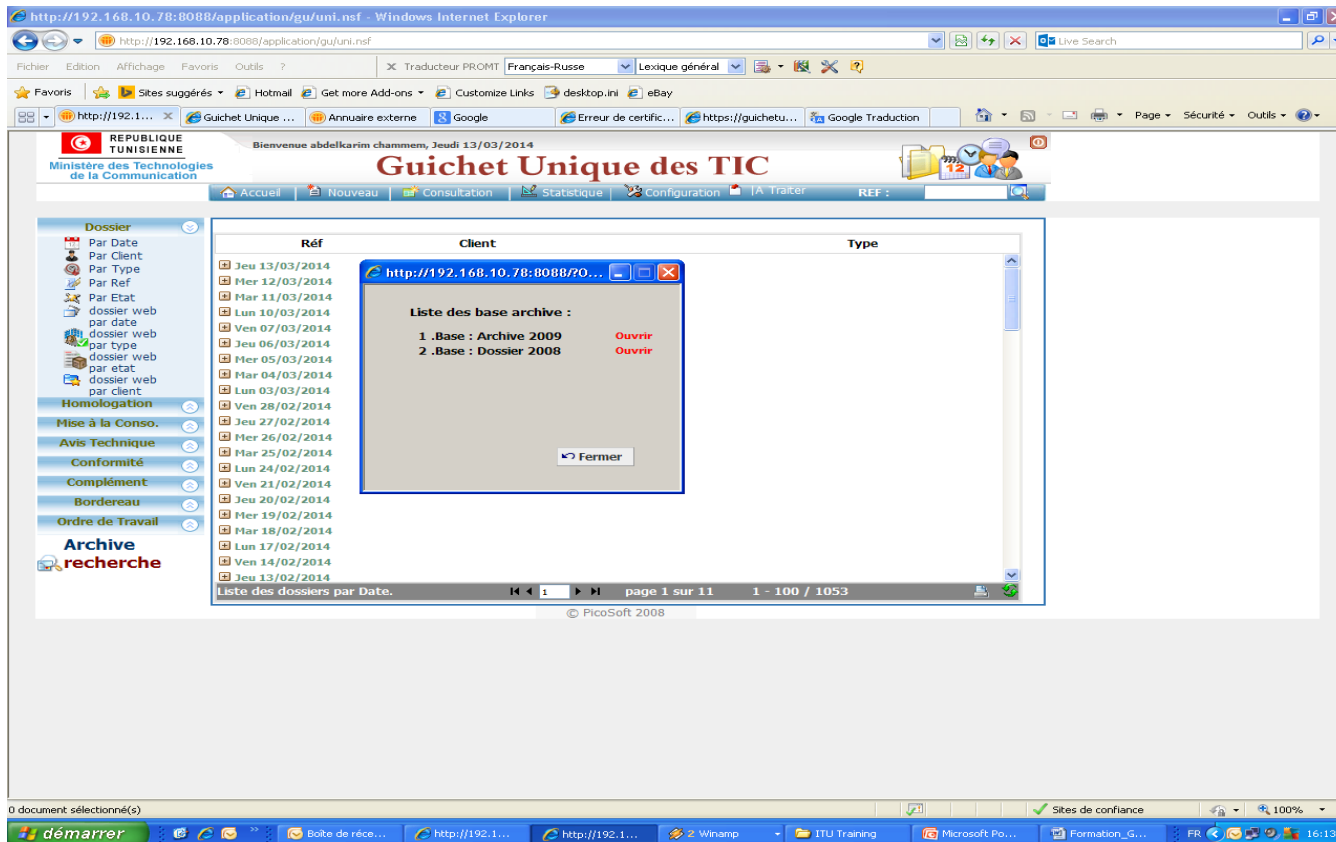
b) Business Applications

✓ Security,



b) Business Applications

✓ Backup,



The screenshot shows a web browser window displaying the 'Guichet Unique des TIC' interface. The page title is 'Bienvenue abdelkarim chammem, Jeudi 13/03/2014'. The main content area displays a list of documents with columns for 'Réf', 'Client', and 'Type'. A modal window titled 'Liste des base archive' is open, showing two entries: '1 .Base : Archive 2009' and '2 .Base : Dossier 2008', each with an 'Ouvrir' button. The modal also has a 'Fermer' button at the bottom.

Réf	Client	Type
Jeu 13/03/2014		
Mer 12/03/2014		
Mar 11/03/2014		
Lun 10/03/2014		
Ven 07/03/2014		
Jeu 06/03/2014		
Mer 05/03/2014		
Mar 04/03/2014		
Lun 03/03/2014		
Ven 28/02/2014		
Jeu 27/02/2014		
Mer 26/02/2014		
Mar 25/02/2014		
Lun 24/02/2014		
Ven 21/02/2014		
Jeu 20/02/2014		
Mer 19/02/2014		
Mar 18/02/2014		
Lun 17/02/2014		
Ven 14/02/2014		
Jeu 13/02/2014		

Modal Window: Liste des base archive

- 1 .Base : Archive 2009 [Ouvrir](#)
- 2 .Base : Dossier 2008 [Ouvrir](#)

[Fermer](#)

b) Business Applications

✓ Search module,

The screenshot shows a web browser window displaying the 'Guichet Unique des TIC' search interface. The search term 'i-sat' has been entered, and the results are displayed in a table. The table has columns for Référence, Type, Produit, Marque, Modèle, Client, and Responsable. The results show various GSM terminals and their corresponding reference numbers and types.

Référence	Type	Produit	Marque	Modèle	Client	Responsable
W-RHO-0270-12	Retrait Pour Homologation	Terminal GSM	NOKIA	110 (RM-827)	L-SAT	
W-RHO-0159-12	Retrait Pour Homologation	Terminal GSM	NOKIA	202 RM-834	L-SAT	
W-RHO-0111-12	Retrait Pour Homologation	Terminal GSM	NOKIA	305 RM-766	L-SAT	
W-APE-0482-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	202 RM-834	L-SAT	
W-APE-0423-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	5130 C-2 RM-495	L-SAT	
W-APE-0434-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	C1-01 RM-607	L-SAT	
W-APE-0474-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	C2-03 RM-702	L-SAT	
W-APE-0399-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	202 RM-834	L-SAT	
W-APE-0405-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	200 RM-761	L-SAT	
W-APE-0310-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	101 RM-769	L-SAT	
W-APE-0315-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	C2-00 RM-704	L-SAT	
W-APE-0314-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	X1-01 RM-713	L-SAT	
W-APE-0228-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	C2-00 RM-704	L-SAT	
W-APE-0211-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	C1-01 RM-607	L-SAT	
W-APE-0210-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	X2-02 RM-694	L-SAT	
W-APE-0244-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	C2-05 RM-724	L-SAT	
W-APE-0275-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	1280 RM-647	L-SAT	
W-APE-0298-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	200 RM-761	L-SAT	
W-APE-0229-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	NOKIA	X1-01 RM-713	L-SAT	
W-APE-0153-12	Autorisation provisoire d'enlèvement (APE)	Terminal GSM	nokia	300 RM-781	L-SAT	



b) Business Applications

3. Modules to be integrated

- ✓ Consultation of regulation,
- ✓ Statistics and reporting,
- ✓ Workflow to ensure traceability,
- ✓ Risk management,
- ✓ Security,
- ✓ Backup,
- ✓ Search,



a) Introduction

The ICT one-stop shop instituted in the Centre of Studies and of Research of Telecommunications (CERT) gives to its customers and to the various partners (control organism) multitude benefits and services across customer service, partner and working available at the level of its site web <https://guichetunique-tic.cert.tn>.



a) Introduction

It ensures high flexibility and ease of use for the customer request deposit, consultation, and tracking.



b) Use cases

Electronic deposit of removal for approval request

Depositing an online request can be made only after authentication by entering the user name and password.



1. Electronic deposit of a file withdrawal for approval



Guichet Unique des Technologies de l'Information et de la Communication - Windows Internet Explorer

https://guichetunique-tic.cert.tn/fr/

Fichier Edition Affichage Favoris Outils ? Traducteur PROMT Français-Russe Lexique général

Favorites Sites suggérés Hotmail Get more Add-ons Customize Links desktop.ini eBay

http://192.168.10.7... Guichet Unique des T... Annuaire externe Google http://192.168.10.7... https://guichetuniqu...

CERT
GUICHET UNIQUE التماك الموحد
Ministère des Technologies de l'Information et de la Communication

Français Accueil Contact

Services en ligne

Espace Client Espace Partenaire Espace Metier

Pour accéder aux services en ligne, les importateurs et les transitaires peuvent s'inscrire auprès du guichet unique.

Utilisateur: client test

Mot de passe: [masked]

Connexion

Actualité

توريد أجهزة الحواسيب المحمولة واللوحات الإعلامية والتي تحتوي على وجهات راديوية من صف 3G

تعلم إدارة التماك الموحد لمركز الدراسات والبحوث للاتصالات أنه في ظل التطور التكنولوجي المتسارع للأجهزة الطرفية للاتصالات المبردة و خاصة في ما يتعلق بدمج الوجهات الراديوية في العديد منها وتطبيقا لما نص عليه الفصل 32 من مجلة الاتصالات، ولأننا نذكر أن الحواسيب المحمولة واللوحات الإعلامية والتي تحتوي على وجهات راديوية من صف 3G تخضع إلى عمليات المصادقة،

توريد أجهزة الراديو المركزة بالسيارات.

توريد أجهزة الاستقبال الاداعي

تبسيط الاجراءات بالنسبة لعمليات توريد أجهزة ومظومات الاتصال لفائدة المشغلين.

⌵ Délais de traitement

⌵ Octroi des demandes de dérogation

⌵ Les Horaires de travail Guichet Unique

Le guichet unique

Le Guichet Unique a été créé au sein du Centre d'Etudes et de Recherches des Télécommunications par le décret N° 2639 du 21 juillet 2008 et ce afin de fournir les autorisations administratives entrant dans le cadre des opérations d'importation et de commercialisation des équipements et systèmes de communications électroniques.

Le Guichet Unique comprend des représentants de divers intervenants travaillant dans le domaine des Technologies de l'Information et de la

Prestations & Procédures

Certificat d'Homologation
Sont soumis à l'Homologation préalable les équipements terminaux de télécommunications importés ou fabriqués en Tunisie et destinés à la commercialisation ou l'utilisation publique ainsi que les équipements terminaux radioélectriques qu'ils soient destinés ou non à être connectés à un réseau public de Télécommunications.

En savoir plus

Autorisation de Mise à la Consommation
Les produits importés peuvent être soumis à un Contrôle Technique de Conformité aux normes et réglementations techniques nationales ou internationales, le cas échéant, aux conditions particulières convenues entre fournisseur et importateur dans la mesure où ces spécifications ne sont pas contraires aux normes nationales et internationales et sont dans l'intérêt du consommateur.

En savoir plus

Certificat de Conformité
Sont soumis à un contrôle de conformité les équipements terminaux de télécommunications et les équipements terminaux radioélectriques importés par les personnes physiques ou morales pour leurs besoins propres ou à titre d'admission temporaire.

En savoir plus

Avis Technique
Les Avis Techniques sont fournis par le Guichet Unique pour informer le client de la démarche à suivre pour l'obtention d'un Certificat d'Homologation ou de Conformité.

En savoir plus

Autorisation d'admission temporaire
Toute personne morale ou physique désirant obtenir une autorisation d'admission temporaire pour un équipement terminal de télécommunications ou des systèmes électroniques doit déposer un dossier de demande d'admission temporaire auprès du guichet Unique.

En savoir plus

Téléchargement

⌵ Déclaration Relative aux Equipements et Systèmes Electroniques

⌵ Formulaire Liass Unique

⌵ Inscription aux service en ligne

⌵ Engagement relatif à l'usage d'équipements IP

⌵ Engagement relatif au dépôt des équipements pour contrôle de conformité

Questions Fréquentes

⌵ Je ramène de l'étranger...?

⌵ Mon entreprise souhaiterait...?

⌵ Afin de commercialiser...?

⌵ Quelles sont les classes ...?

Textes de Références

Les lois

⌵ Loi no 2001-1 du 15/01/2001 portant promulgation du code des télécommunications.
⌵ télécharger ⌵ Texte associé

Les décrets

⌵ Décret no 2001-830 du 14/04/2001 relatif à l'homologation des équipements terminaux de télécommunications et des équipements terminaux radioélectriques.
⌵ télécharger ⌵ Texte associé

⌵ Décret no 2008-2638 du 21/07/2008 fixant les conditions de fourniture du service téléphonique sur protocole internet.
⌵ télécharger

⌵ Decret no 2008-2639 du 21/07/2008 fixant les conditions et les procédures d'importation et de commercialisation des moyens ou des services de cryptage à travers les réseaux de télécommunications.
⌵ télécharger

Les arrêtés

⌵ Arrêté du ministre des technologies de la communication du 15 juillet 2008, modifiant la puissance maximale et la limite de la portée des équipements radioélectriques de faible puissance et de portée limitée.

Liens utiles

⌵ Ministère des Technologies de la Communication.

⌵ Ministère du Commerce et de l'Artisanat

⌵ Centre d'Etudes et de Recherche des Télécommunications.

⌵ Agence Nationale des Fréquences

⌵ Agence Nationale de Certification Électronique

Internet 100% 08:34



1. Electronic deposit of a file withdrawal for approval ▶▶▶▶▶



The customer achieves his space automatically. To create a new request he is called to click on the appropriate button.



1. Electronic deposit of a file withdrawal for approval



Guichet Unique des Technologies de l'Information et de la Communication - Windows Internet Explorer

https://guichetunique-tic.cert.tn/fr/space.php

Services en ligne

Bienvenue sur votre espace :

- Accéder à mon espace
- changer mot de passe
- Mon Profil
- Déconnexion

Prestations & Procédures

- Certificat d'Homologation
- Autorisation de Mise à la Consommation
- Certificat du Conformité
- Avis Technique
- Autorisation d'Admission temporaire

Formulaires

- Déclaration Relative aux Equipements et Systèmes Electroniques
- Formulaire Liass Unique
- Inscription aux service en ligne
- Engagement relatif à l'usage d'équipements IP
- Engagement relatif au dépôt des équipements pour contrôle de conformité
- Engagement Relatif au dépôt des équipements pour avis technique
- Engagement relatif à la commercialisation des équipements soumis à l'autorisation d'importation (décret 2639)
- Complement Visite sur site
- Complement d'Information
- Complément d'information relatif à l'usage propre d'équipements permettant la Voie sur IP
- Brochure

Suivi des dossiers

Consultation, dépôt et suivi des dossiers

Consultation des dossiers | dépôt de dossiers | Suivi des dossier | Aide en ligne

Dossier Par Date

Date	Référence	Type	Etat
13 mars 2014			
12 mars 2014			
11 mars 2014			
10 mars 2014			
7 mars 2014			
6 mars 2014			
5 mars 2014			
4 mars 2014			
3 mars 2014			
28 févr. 2014			

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Parc Technologique des Communications, Route de Raoued Km 3.5 BP N° 111 2088 El Ghazala Ariane
Tel : +216 70835000

Terminé

Internet 90%

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1. Electronic deposit of a file withdrawal for approval



https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf - Windows Internet Explorer

https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf

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Consultation, dépôt et suivi des dossiers

Consultation des dossiers **dépôt de dossiers** Suivi des dossier Aide en ligne

Nouveau depot Homologation

Information produ

NDP Désignati

- Doc 610
- Autorisation provisoire d'enlèvement (APE)
- Autorisation de mise à la consommation (AMC)
- Avis Technique
- Retrait Pour Homologation**
- Retrait Pour Conformité
- Retrait pour Avis Technique
- AMC CONCESSIONNAIRE

Pièces du dossier

Pièce	Réf. *	Date *	Fichier
Demande		10/03/2014	<input type="text"/> Parcourir...
Facture	<input type="text"/>	<input type="text"/>	<input type="text"/> Parcourir...
Avis d'arrivée	<input type="text"/>	<input type="text"/>	<input type="text"/> Parcourir...
Documentation technique			<input type="text"/> Parcourir...

*: Il s'agit de la référence et la date de la pièce.

Ajouter d'autre(s) pièce(s)

Pièce	Réf.	Date	Fichier

NB.: Prière de numériser les documents avec une résolution **Maximale 100 x 100 px** et en format JPG,TIF, TIFF,PDF,GIF,XLS,XLSX.

Internet 100%

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In continuation the customer is required to introduce product information



1. Electronic deposit of a file withdrawal for approval



https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf - Windows Internet Explorer

https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf

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http://192.168.10.7... Guichet Unique des ... Annuaire externe Google http://192.168.10.7... https://guichetu...

Consultation, dépôt et suivi des dossiers

Consultation des dossiers dépôt de dossiers Suivi des dossier Aide en ligne

Nouveau depot Retrait Pour Homologation

Enregistrer le Dossier

Information produit

NDP	Désignation
	Produit
	Désignation : Poste téléphonique
	Marque :
	Modèle :

Pièces du dossier

Pièce Ajouter

Demande

Facture

Avis d'arrivée

Documentation technique

* : Il s'agit de la référence et la date de la pièce.

Ajouter d'au

Pièce Réf.

NB.: Prière de numériser les documents avec une résolution Maximal

les paramètres NDP -- dialogue de page Web

https://guichetunique-tic.cert.tn/C1257508003BCF06/PS%20SelectNDPweb?OpenForm

Liste des NDP :

NDP	Désignation
8471500011	Serveur Intégrant un système d'exploitation
8471500011	Serveur
84733020011	Module de Cryptage
84733020022	Accélérateurs cryptographiques
84733020033	Carte de cryptage
85171100106	Poste téléphonique sans fil Ornemental
85171100913	Poste téléphonique IP sans fil
85171100913	Poste téléphonique Spécifique DECT
85171100913	Poste téléphonique IP WIFI
85171100991	Poste téléphonique analogique sans fil
85171100991	Poste téléphonique WIFI
85171100991	Poste téléphonique DECT

Poste téléphonique WIFI

https://guichetunique-tic.cert.tn/C1257508003BCF06/PS%20SelectNDPweb Internet

https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf/ Internet 100%

démarrer ITU Training Formation_GU_UIT.d... Boîte de réception - ... FR 08:38



Once this is done, customer is required to attach relevant documents introducing references and corresponding dates.



1. Electronic deposit of a file withdrawal for approval



https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf - Windows Internet Explorer

https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf

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Consultation, dépôt et suivi des dossiers

Consultation des dossiers | dépôt de dossiers | Suivi des dossier | Aide en ligne

Nouveau depot Retrait Pour Homologation Enregistrer le Dossier

Information produit

NDP	Désignation	Marque	Modèle	Qte		
85171100913	Poste téléphonique IP WIFI	test1	test2	2	<input type="checkbox"/>	<input type="checkbox"/>

Pièces du dossier

Pièce	Réf. *	Date *	Fichier	
Demande		10/03/2014	E:\Nouveau dossierPHP-OR	<input type="button" value="Parcourir..."/>
Facture	<input type="text" value="fact1251"/>	<input type="text" value="05/03/2014"/>	E:\CP040.pdf	<input type="button" value="Parcourir..."/>
Avis d'arrivée	<input type="text" value="avis10"/>	<input type="text" value="06/03/2014"/>	E:\LPI_101.pdf	<input type="button" value="Parcourir..."/>
Documentation technique			E:\Sens interdit2.JPG	<input type="button" value="Parcourir..."/>

* : Il s'agit de la référence et la date de la pièce.

Ajouter d'autre(s) pièce(s)

Pièce	Réf.	Date	Fichier
NB.: Prière de numériser les documents avec une résolution Maximale 100 x 100 px et en format JPG, TIF, TIFF, PDF, GIF, XLS, XLSX.			

Terminé

démarrer ITU Training https://guichetunique... Formation_GU_UIT.d... Boîte de réception - ... FR 08:42



To guarantee more fluidity of its online services, the One-Stop Shop has provided a sub section to add more useful attachments that the customer. The customer can then attach these documents after selecting their names and introduce their references and dates.



1. Electronic deposit of a file withdrawal for approval



The screenshot shows a web browser window displaying a page for file upload. A file explorer window is open, showing a file named 'PHP-ORACLE-manual.pdf' selected. The web page has a table with columns 'Pièce', 'Réf.', 'Date', and 'Fichier'. The 'Date' column contains '10/03/2014'. Below the table, there is a section for adding more pieces and a note about document resolution.

Pièce	Réf.	Date	Fichier
Demande		10/03/2014	<input type="text"/> Parcourir...
Facture	<input type="text"/>	<input type="text"/>	<input type="text"/> Parcourir...
Avis d'arrivée	<input type="text"/>	<input type="text"/>	<input type="text"/> Parcourir...
Documentation technique			<input type="text"/> Parcourir...

* : Il s'agit de la référence et la date de la pièce.

Ajouter d'autre(s) pièce(s) +

Pièce	Réf.	Date	Fichier
-------	------	------	---------

NB.: Prière de numériser les documents avec une résolution **Maximale 100 x 100 px** et en format JPG, TIF, TIFF, PDF, GIF, XLS, XLSX.



1. Electronic deposit of a file withdrawal for approval



The screenshot shows a web browser window displaying a page titled "Consultation, dépôt et suivi des dossiers". The page has a navigation menu with "Consultation des dossiers", "dépôt de dossiers", "Suivi des dossier", and "Aide en ligne". The main content area is titled "Nouveau depot Retrait Pour Homologation" and includes a button "Enregistrer le Dossier".

Below this, there is a section "Information produit" with a table:

NDP	Désignation	Marque	Modèle	Qte		
85171100913	Poste téléphonique IP WIFI	test1	test2	2		

Next is the "Pièces du dossier" section, which contains a table with columns "Pièce", "Réf. *", "Date *", and "Fichier".

Pièce	Réf. *	Date *	Fichier
Demande		10/03/2014	E:\Nouveau dossier\PHP-OR <input type="button" value="Parcourir..."/>
Facture	<input type="text" value="fact1251"/>	<input type="text" value="05/03/2014"/>	E:\CP040.pdf <input type="button" value="Parcourir..."/>
Avis d'arrivée	<input type="text" value="avis10"/>	<input type="text" value="06/03/2014"/>	E:\LPI_101.pdf <input type="button" value="Parcourir..."/>
Documentation technique			E:\Sens interdit2.JPG <input type="button" value="Parcourir..."/>

A note below the table states: "* : Il s'agit de la référence et la date de la pièce." Below this is a section "Ajouter d'autre(s) pièce(s)" with a table for adding new pieces:

Pièce	Réf.	Date	Fichier
Liste N° de série	<input type="text"/>	<input type="text" value="10/03/2014"/>	E:\NonAuto.jpg <input type="button" value="Parcourir..."/>

At the bottom, a note reads: "NB.: Prière de numériser les documents avec une résolution Maximale 100 x 100 px et en format JPG, TIF, TIFF, PDF, GIF, XLS, XLSX."

For this stadium the customer is ready to pre-deposit his file by pressing on the button to record "Enregistrer le dossier".



1. Electronic deposit of a file withdrawal for approval



The screenshot shows a web browser window with the URL <https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf>. The page title is "Consultation, dépôt et suivi des dossiers". The main content area is titled "Confirmation de l'enregistrement" and contains the following information:

Annuler | **Confirmer** | **Imprimer**

Référence : **DOS-0197-10**
Type Dossier : **Retrait Pour Homologation**
Date : **10/03/2014**
Heure : **08:38:05**
Utilisateur : **Client test**
Information : **Votre document a été enregistré avec succès.**

Liste de Pièce Fournie :

- Demande : PHP-ORACLE-manual.pdf
- Facture : CP040.pdf
- Avis d'arrivée : LPI_101.pdf
- Documentation technique : Sens interdit2.JPG
- Liste N° de série : NonAuto.jpg

Information Produit

Type	Marque	Modèle	Qte
Poste téléphonique IP WIFI	test1	test2	2

The browser's taskbar at the bottom shows the system tray with the time 08:44 and the language set to FR. The taskbar also displays several open applications, including "Formation_GU_UIT.docx - Microsoft Word" and "Boîte de réception".



1. Electronic deposit of a file withdrawal for approval



https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf - Windows Internet Explorer

https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf

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Consultation, dépôt et suivi des dossiers

Consultation des dossiers dépôt de dossiers Suivi des dossier Aide en ligne

Confirmation de Dépôt de dossier.

[Imprimer](#)

Référence : **DOS-0197-10**

Type Dossier : **Retrait Pour Homologation**

Date : **10/03/2014**

Heure : **08:38:21**

Utilisateur : **Client test**

Information : **Votre document a été Déposé avec succès .**

Liste de Pièce Fournie :

- Demande : PHP-ORACLE-manual.pdf
- Facture : CP040.pdf
- Avis d'arrivée : LPI_101.pdf
- Documentation technique : Sens interdit2.JPG
- Liste N° de série : NonAuto.jpg

Information Produit :

Type	Marque	Modèle	Qte
Poste téléphonique IP WIFI	test1	test2	2

Boîte de réception - Microsoft Outlook Internet 115%

Guichet Unique Confirmation de pre-depot du dossier
Guichet unique<https://guichetunique-tic.cert.tn/images/cert-tete

Terminé

démarrer ITU Training https://guichetunique... Formation_GU_UIT.d... Boîte de réception - ... FR 08:44



The monitoring of this request is made by pressing “*Dossiers en cours de validation*” button in section MONITORING OF FILES



1. Electronic deposit of a file withdrawal for approval



https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf - Windows Internet Explorer

https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf

Fichier Edition Affichage Favoris Outils ? Traducteur PROMT Français-Russe Lexique général

http://192.168.10.7... Guichet Unique des ... Annuaire externe Google http://192.168.10.7... https://guichetu...

Consultation, dépôt et suivi des dossiers

Consultation des dossiers | dépôt de dossiers | **Suivi des dossier** | Aide en ligne

Complément
Dossiers en cours de validation
Dossier Dossiers en cours de validation

Information de Dépôt de dossier.

[Imprimer](#)

Référence : **DOS-0197-10**

Type Dossier : **Retrait Pour Homologation**

Date : **10/03/2014**

Heure : **08:39:42**

Utilisateur : **Client test**

Information : **Votre document a été Déposé avec succès .**

Liste de Pièce Fournie :

- Demande : PHP-ORACLE-manual.pdf
- Facture : CP040.pdf
- Avis d'arrivée : LPI_101.pdf
- Documentation technique : Sens interdit2.JPG
- Liste N° de série : NonAuto.jpg

Information Produit :

Type	Marque	Modèle	Qte
Poste téléphonique IP WIFI	test1	test2	2

Internet 115%

démarrer ITU Training Formation_GU_UIT.d... Boîte de réception - ... FR 08:45



1. Electronic deposit of a file withdrawal for approval



https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf - Windows Internet Explorer

https://guichetunique-tic.cert.tn/SiteGuichet/PeriodeValidation/MenuSite.nsf

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Consultation, dépôt et suivi des dossiers

Consultation des dossiers | dépôt de dossiers | Suivi des dossier | Aide en ligne

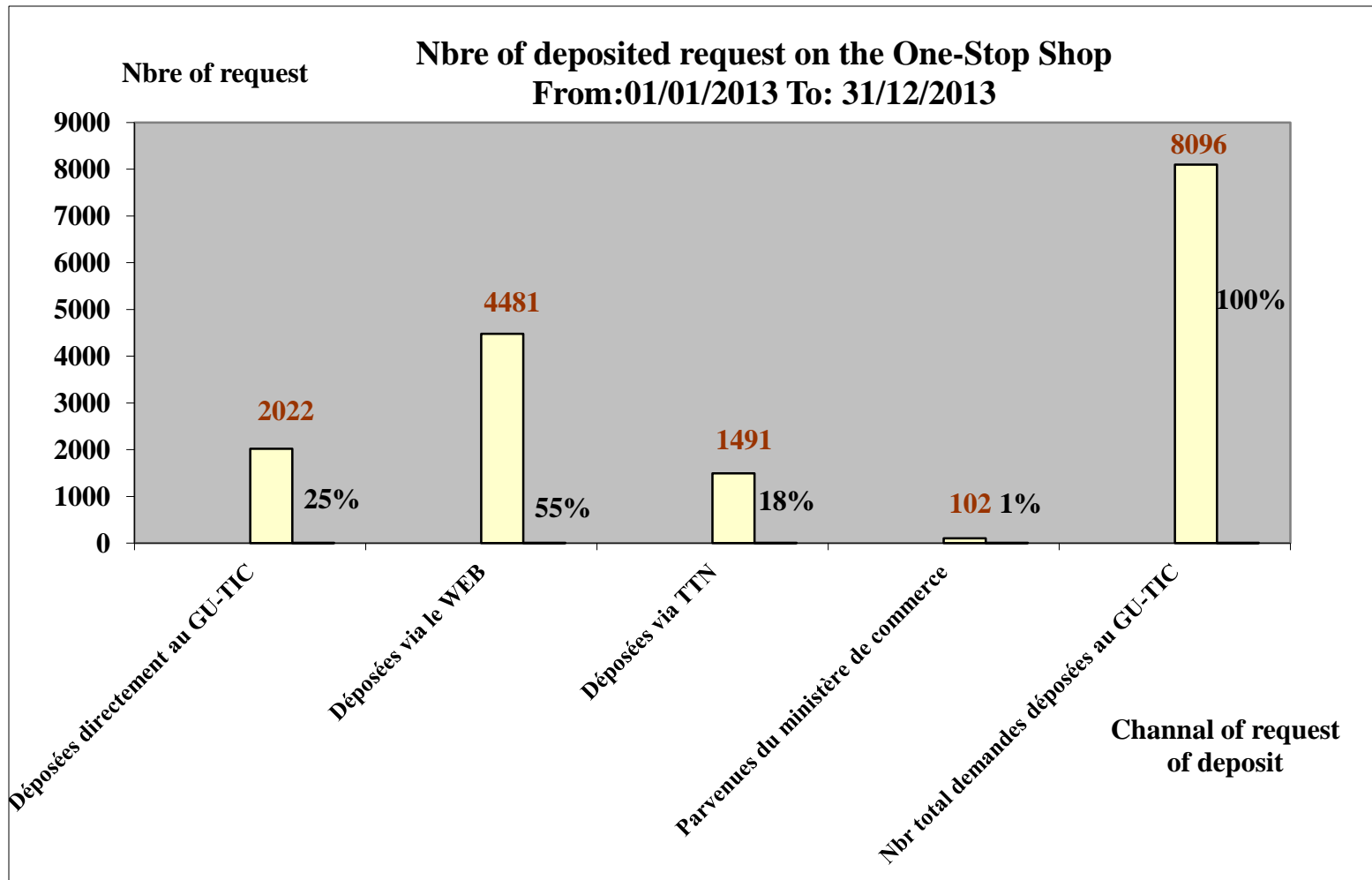
Précédent 1 Suivant

Type		Date Creation	Etape
Retrait Pour Homologation		10/03/2014	Dossier Déposé . En attente de Validation
AMC CONCESSIONNAIRE		07/01/2014	A Révisé par le Client

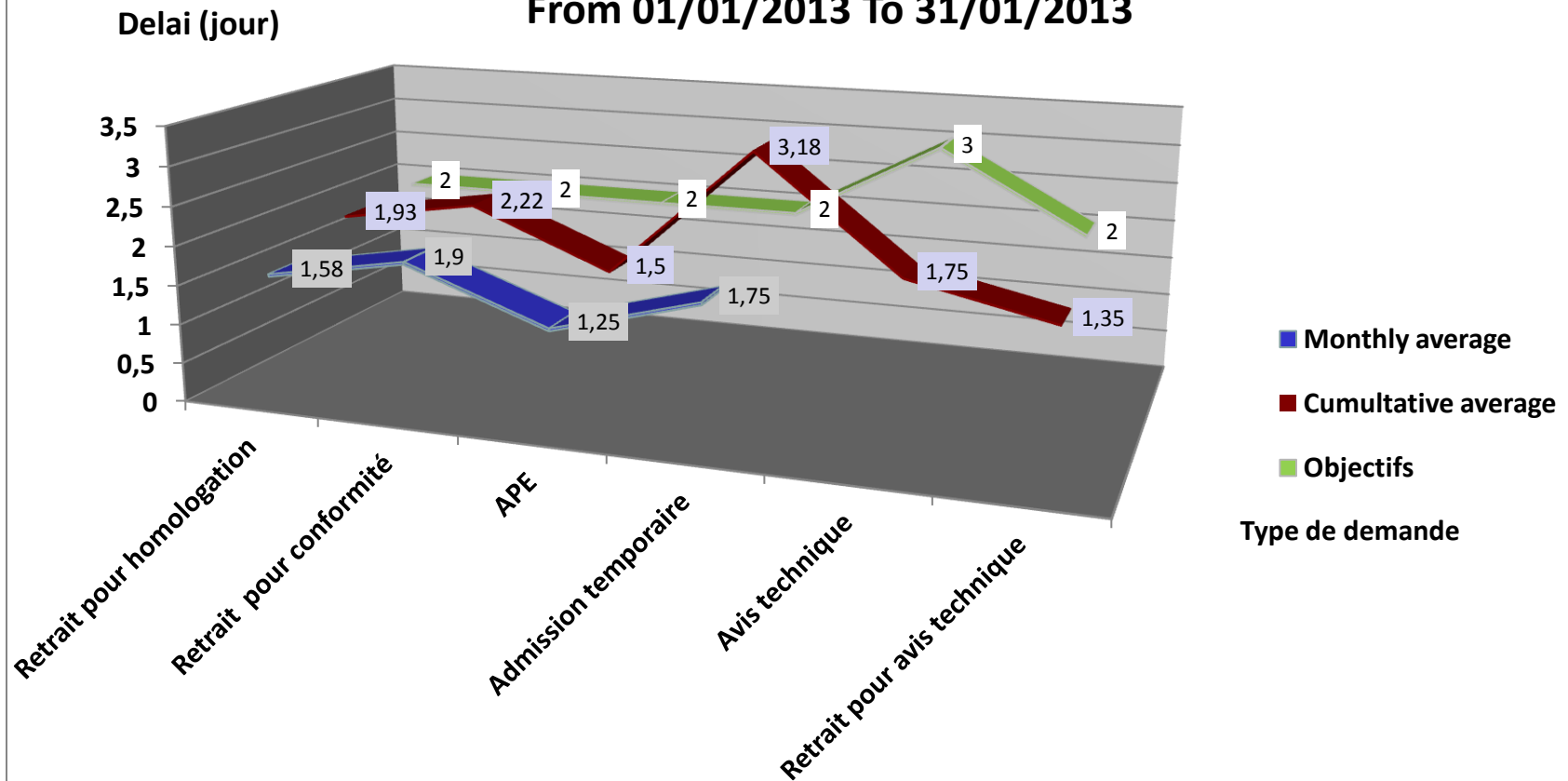
Précédent 1 Suivant

Terminé

démarrer ITU Training Formation_GU_UIT.d... Boîte de réception - ... FR 08:46



Processing delays From 01/01/2013 To 31/01/2013





- ✓ Following a well-written set of procedures helps employees to do all aspects of their jobs independently,
- ✓ They are also sets of instructions that employees follow to ensure carrying out specific tasks thoroughly and consistently



- ✓ By following procedure, even the newest employee can learn quickly about how the organism operates and why,
- ✓ Procedures are reviewed and updated periodically to reflect changes.

**Thank you for
your attention**



Part 3 : APPROVAL OF TELECOMMUNICATIONS TERMINALS : PROCEDURES, TESTS AND MEASUREMENTS

March 2014



- Objective
- Introduction
- Procedure
- *Approval Methodology*
- Different types of devices
- Standards
- Tests and measurements
- Measuring devices
- ISO17025 accreditation
- Recommendations
- Conclusion



Detail procedures, administrative and technical mechanisms related to the activity of Type Approval of telecommunications terminals



- Every modern country organizes the local telecommunications sector via organizations and definite regulations.
- Telecommunications Standards and procedures for local country must be consistent and aligned with the organizations and international standards of regulation in the sector.



- Each country including telecommunications networks with all their components, and having defined a national frequency plan must have, obviously, a telecommunications terminal approval body .
- The approval process ensures conformity of telecommunications terminals connecting to the Access Network with the requirements of the country's network, national and international standards and to national frequency plan



Approval definition

The approval is the set of control operations and necessary tests, by which CERT ascertains and certifies that a representative sample of telecommunications terminal equipment or radio equipment complies with regulations, standards and technical specifications.



Type Approval definition

- Are subject to approval any terminal equipment or radio installation to be connected to a public network.
- Terminal equipment : Any device, any system or group of system, designed to be connected to an endpoint of a network and transmits, receives or processes telecommunications signals.
- Radio Equipment : Any telecommunications system that uses radio frequencies for wave propagation in free space



Definition of compliance

All operations that focus on the verification of the compatibility of the technical characteristics of the equipment with the technical requirements of interworking with public telecommunications networks and rules for use and operating frequency, it is intended for individual people (Equipment imported for public use).



Definition of Technical Control

Approval is always followed by a process of technical control during importation (border), on the basis of a certificate of approval, which ensures the compliance of imported products with the samples approved.



Objective

Approval aims to :

- Verify compliance of terminal equipment or radio equipment with needed requirements
- User safety
- Security of staff operating in public telecommunications networks



Objective

- Protection of networks and information exchanged
- Optimum use of the radio spectrum.
- interoperability of the terminal equipment with the network and with other terminals accessing same service.



- The customer presents the product to be approved to the One Stop Shop (OSS)
- The OSS examines the administrative request of the customer, then it transmits it to Type Approval Lab (CERTLABS)



A second preliminary engineering study is made by CERT Labs experts that includes:

- Verification of technical specifications of the equipment presented
- Verification of certificates of compliance and report tests of the manufacturer
- Verification of the smooth functioning of the equipment presented
- The definition of the tests to be performed



- Tests and measurements
- Generation of Approval report
- Elaboration of the approval certificate (fail or pass) based on the recommendations in the written approval report
- Closing process



Each telecommunication network contains components of different types that include several types of equipment:

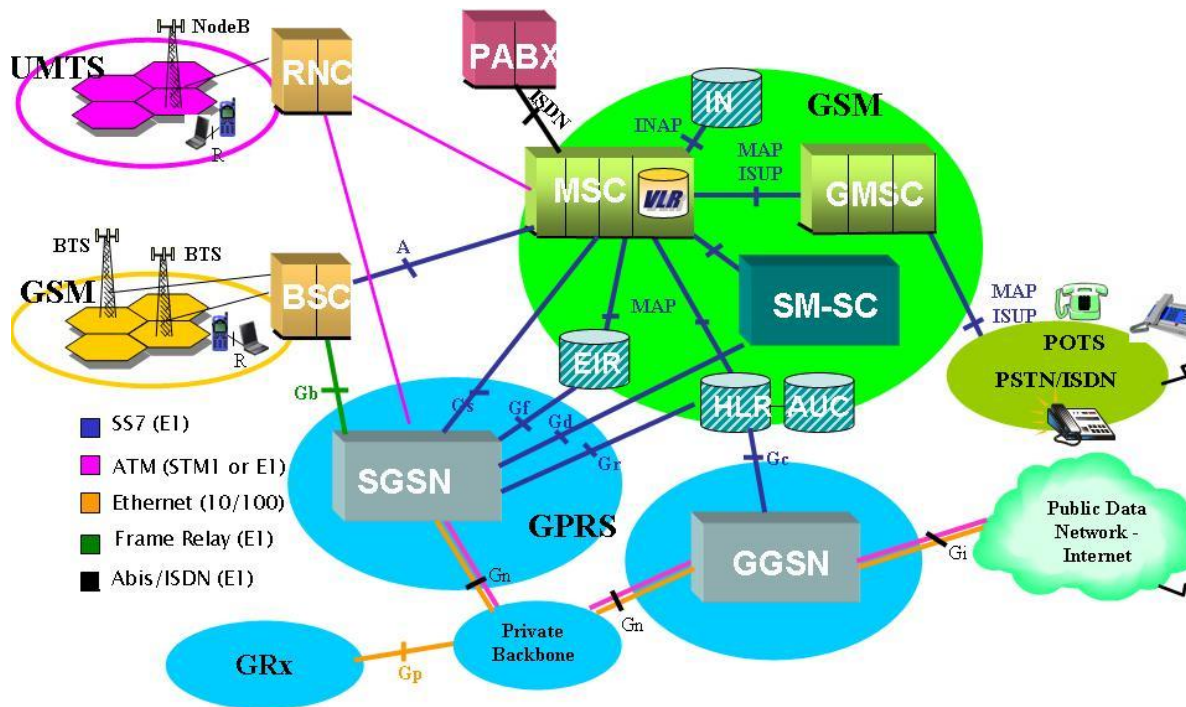
- Radio Components
- Transmission components
- Switching components
- Computer components



Each telecommunication network also contains different types of connections:

- The wired links
- Radio links
- Optical links

A telecommunication terminal may interface with the telecommunications network via one or more connections types





- Fixed terminals:
Fixed terminals of a telecommunication network are wired terminals, IP terminals, ADSL terminals ... (The telephones, routers, modems)



➤ Mobile terminals:

Mobile telecommunications terminals occupy a very wide and extensive range

These terminals can be transmitters / receivers, Bluetooth, WIFI, GSM, HSDPA, UMTS, GPS, geo-location equipment, the signal converter equipment

Define:

- Frequency bands allocated to radio equipment
- The maximum power and fields allowed
- The occupancy rate of the spectral band

Ensuring coexistence between different users of radio waves



Bande de fréquences	Puissance rayonnée max ou champ max/ portée max	Norme Européenne ou norme internationale équivalente	Largeur du canal	Applications
26,312 - 26,474 MHz	40 mW / 100m		12.5 KHz	Postes téléphoniques sans cordon
41,312 - 41,475 MHz	20 mW / 100m		12.5 KHz	
46-49 MHz	50 mW / 100m		--	
1880 - 1900 MHz	10 mW / 100m		2 MHz	
6765 - 6795 kHz	42dB μ A/m à 10m	EN 300 330	--	Equipements non spécifiques : Ils regroupent différents types d'applications sans fil, notamment de télécommande et télécontrôle, télémessure, transmission d'alarmes et de données. Ils ne doivent en aucun cas permettre la transmission de la voix. NB : Les équipements de télécommande n'utilisent pas la bande (40.66 -40.7) MHz.
26,957 - 27,283 kHz	10 mW / 10m		--	
40,66 - 40,7 MHz	10 mW / 100m		--	
433,05 - 434,79 MHz	10mW /20m	EN 300 220	--	



868,6 - 869,4 MHz	10mW / 50m	EN 300220	25 KHz	Alarmes	
869,65 - 869,7 MHz	25 mW / 100m				
9 - 59,750 kHz	72dB μ A/m à 10 m	EN 300 330	--	Matériels à boucle d'induction: Ils regroupent les systèmes d'immobilisation de véhicules, d'identification des animaux, de détection de câbles, de gestion des déchets, d'identification des personnes, de contrôle d'accès, les capteurs de proximité, les systèmes antiviol, d'identification automatique d'articles, de commande sans fil et de péage routier automatique.	
59,750 - 60,250 kHz	42 dB μ A/m à 10 m		--		
60,250 - 70 kHz	69dB μ A/m à 10 m		--		
70 - 119 kHz	42dB μ A/m à 10 m		--		
119-135 kHz	66dB μ A/m à 10 m		--		
			--		
135 -148,5 kHz	42dB μ A/m à 10 m		--		
3155 - 3400 kHz	13,5 dB μ A/m à 10 m		--		
13 553 - 13 567 kHz	42 dB μ A/m à 10 m		EN 302 291		--
170 - 181,5 MHz	10m W / 50m				--
196,6 - 200,2 MHz	10m W / 50m	EN 300 422	--	Microphones sans fil et aides à l'audition	
470 - 790 MHz	50m W/50m		--		
863 - 865 MHz	10.m W / 50m	EN 300 422 EN 301 357	--		



Bande de fréquences	Puissance rayonnée max ou champ max/ portée max	Norme Européenne ou norme internationale équivalente	Largeur du canal	Applications
0.050 - 0.130 MHz	500m W / 100m	--	--	Traduction simultanée
0.125 - 0.134 MHz	42 dB μ A/m à 10m	--	--	Dispositifs d'identification (RFID)
13.553 - 13.567 MHz	60 dB μ A/m à 10m	EN 300 330	200 KHz	
865 - 868 MHz	2 Wp.a.r. / 10m	EN 302 208		
9-315 kHz	30 dB μ A/m à 10m	EN 302 195	--	Implants médicaux à faible puissance
315 - 600 kHz	- 5 dB μ A/m à 10m	EN 302536	--	
401 - 402 MHz	25 μ W p.a.r.	EN 302 537	25 KHz	
402 - 405 MHz	25 μ W p.a.r.	EN 301 839	25 KHz	
405 - 406 MHz	25 μ W p.a.r.	EN 302537	25 KHz	
2 400 - 2 483,5 MHz	100mW / 100m	EN 300 328 EN 301 893	-- --	Equipements des réseaux locaux radioélectriques de transmission de données à l'intérieur des bâtiments
5150 – 5350 MHz	200m W / 100m			
24.05 - 24.25 GHz	100m W	EN 300 440	--	Système d'information routière et radars à courte portée destinés aux véhicules
76-77 GHz	55 dBm/MHz p.i.r.e	EN 302 372	--	



Definition

By applying the appropriate standard and with a set of measuring instruments and test benches, we ensure the conformity of the equipment under test, submitted for approval, compared to standard that supports them



Measurements

Among the tests and measurements performed during the approval of a telecommunication terminal :

- Verification of the frequency band
- Measuring the frequency error
- Measurement of the emitted power
- Measurement of reception levels
- Measurement of BER (bit error rate)
- Measurement of internal impedance



Functional test

During the approval, all telecommunication terminals are subject to functional tests in terms of commissioning and testing of the product and its smooth functioning

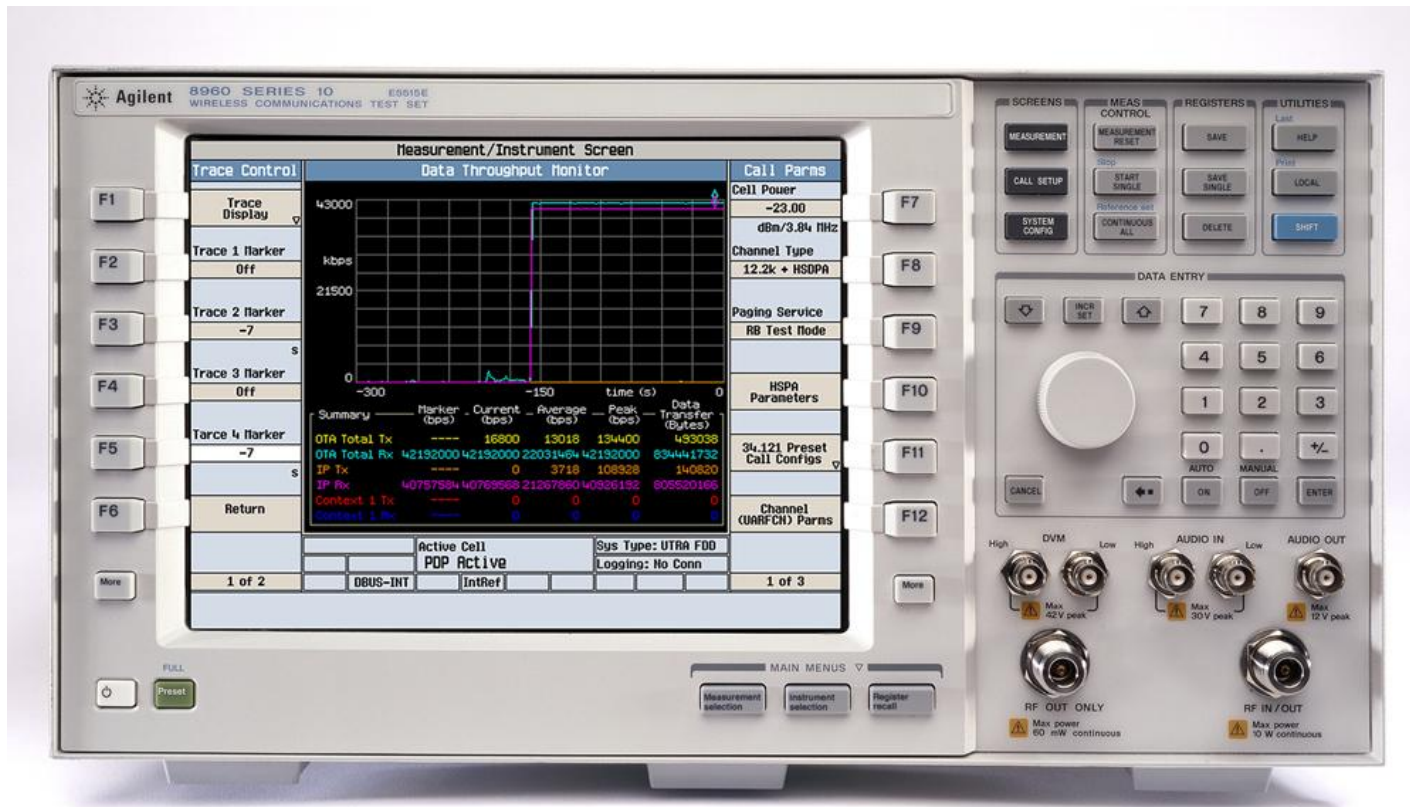


Agilent Technologies 8960 Series 10

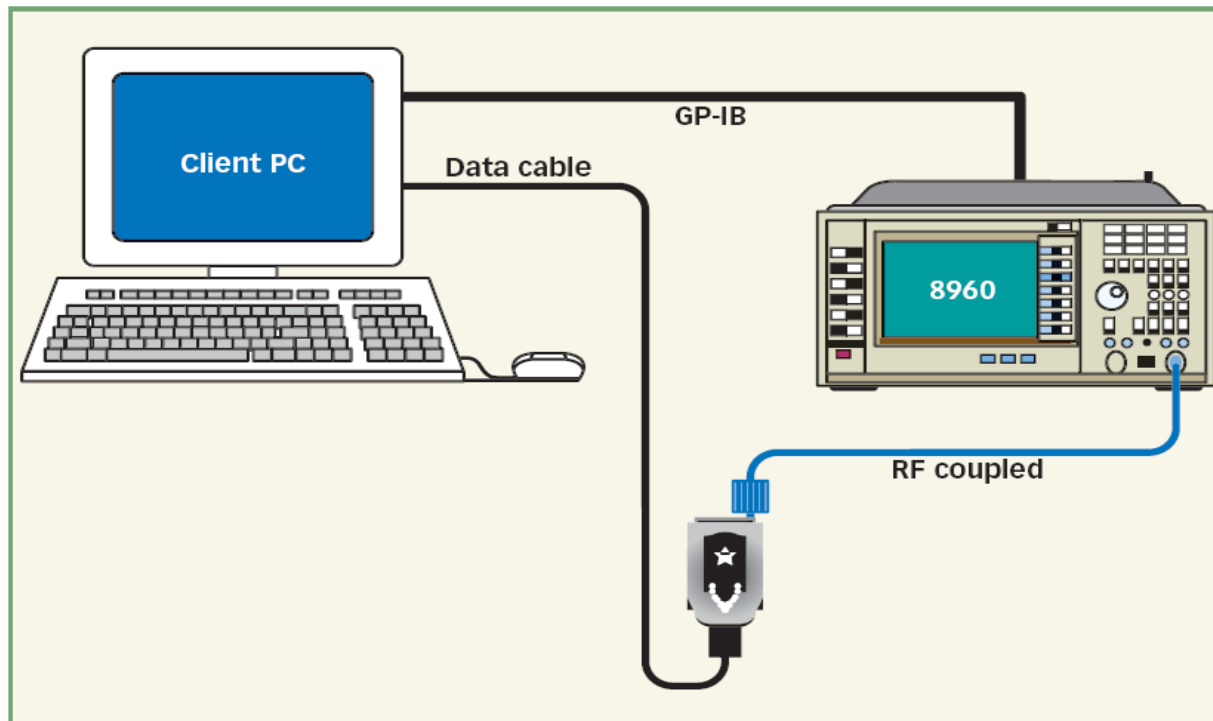
- The test bench of a GSM terminal consists of three essential components:
- Simulator test radio (eg Agilent 8960)
- computer
- A test application installed on the computer (eg WTM)

A link between these components is necessary
USB / GPIB

Agilent Technologies 8960 Series 10

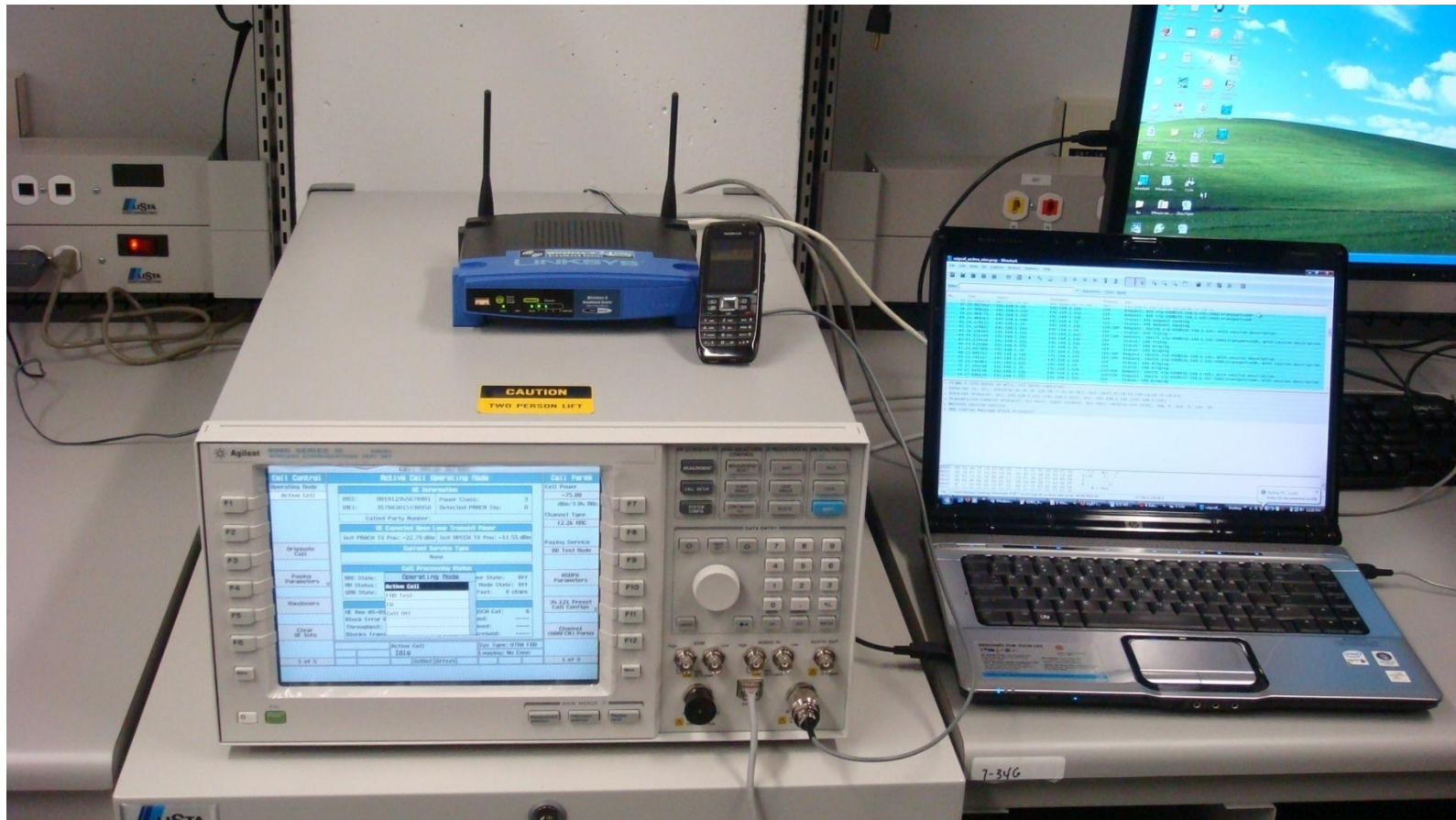


Agilent Technologies 8960 Series 10



6. A practical external PAVT measurement system is based on the Agilent 8960 wireless-communications test set.

Agilent Technologies 8960 Series 10





Wavetek 4107

As for the approval of a GSM terminal, technical control testing requires a radiated radio simulator mode, it's not conducted mode and we take a minimum number of tests (Wavetek 4107)



Wavetek 4107



Wavetek 4107





Spectrum Analyzer

A spectrum analyzer is a measuring instrument for displaying the different frequencies contained in a signal and their respective amplitudes. The signals can be of various types: electrical, optical, acoustic, radio



Spectrum Analyzer

- A digital spectrum analyzer used to measure the voltage of electric signals in the frequency domain. The measurements can range from a few tenths of Hz to several tens of GHz.
- For the approval of telecommunications terminal a spectrum analyzer (0-60GHz) can support all types of products to be approved



Spectrum Analyzer

Among the things to check :

- The frequency band
- The transmission power
- Channel spacing
- The number of channels

Spectrum Analyzer





Spectrum Analyzer



Power meter

- The power meter is a device that measures the electrical power consumed by a receiver or supplied by an electric generator.
- The power meter is used in Approval activities to measure the minimum and maximum output power for Radio equipment

Power meter





S.A.R

SAR (Specific Absorption Rate) characterizes the power absorbed by a unit mass of body tissue. It is expressed in watts per kilogram (W / kg). This value quantifies the peak exposure level (when the equipment transmits at full power) user to electromagnetic waves



S.A.R

With regard to mobile phones, the French regulations set by Decree No. 2003-961 of 8 October 2003 and the RTTE Directive imposes a SAR in less than 2 W / kg head. For other terminal equipment (not used at the head) regulations require a SAR of less than 2 W / kg and 0.08 W / kg for whole body trunk.



S.A.R

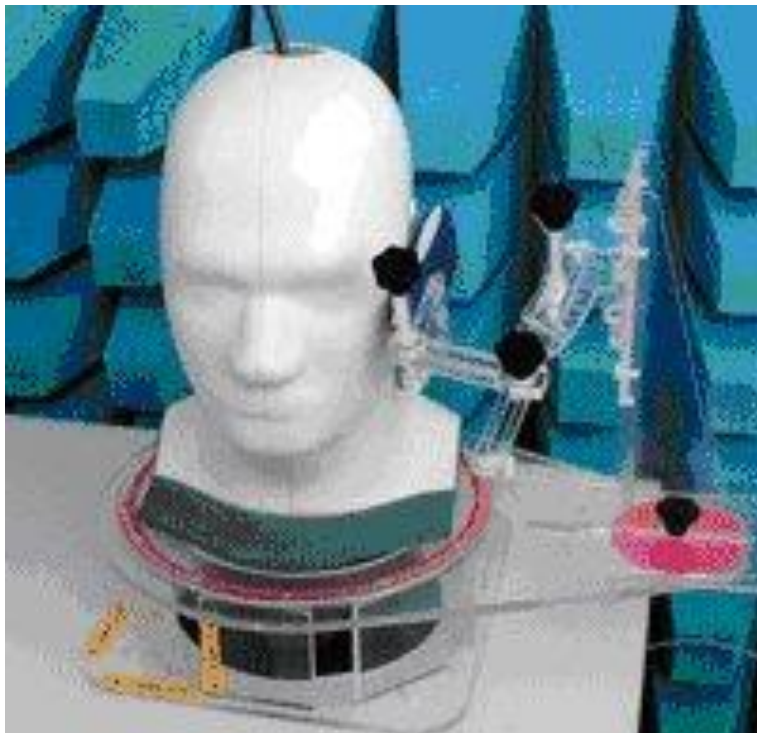
	ICNIRP "Health Physics" Avril 1998	CENELEC ENV 50166-2 1995	IEEE C95.1-1991
Secteur d'application	International	Europe	Etats-Unis
Gamme de fréquence	100kHz-10GHz	10kHz-300GHz	100kHz-6GHz
SAR moyen sur le corps entier	0,08W/kg	0,08W/kg	0,08W/kg
SAR local sur une masse de référence	2W/kg	2W/kg	1,6W/kg
Masse de référence	10 g	10 g (cube)	1 g (cube)
SAR local pour les mains, poignets, pieds et chevilles	4W/kg	4W/kg	4W/kg
Masse de référence	10 g	10 g (cube)	10 g (cube)
Seuil de densité de puissance ((W/rn²))	f(MHz)/200	f(MHz)/200	f(MHz)/150
Seuil de champ électrique (V/m)	1,375 f(MHz) ⁰⁵	1,37 f(MHz) ⁰⁵	-
Seuil de champ magnétique (A/m)	0,0037 f(MHz) ⁰⁵	3,64.1 0~ f(MHz) ⁰⁵	-



S.A.R

SAR determination requires the use of an intrusive probe, which makes experiments on living beings. Laboratories performing these steps, all using the same test procedures defined by CENELEC (European Committee for Electrotechnical Standardization). The phone is adhered to a "ghost", a dummy head having liquid filled propagation properties identical to those of the human brain waves. Then transmits at full power in various orientations. In practice, the actual exposure level is generally less than this value. The sensors measure the power absorbed by the head and trunk through the electric field or temperature.

S.A.R





S.A.R

Step 1:

The radio is placed in maximum emission in several nominal positions of use. The measurement is carried out on a phantom of which represents the inner surface shape of the face.

Note: the liquid equivalent to biological tissues are composed of a mixture of chemicals simulating the dielectric behavior of tissue to different frequencies of common use.



S.A.R

Step 2:

The measurement is performed using an electric field sensor which provides the module of the three components of the field in the phantom in a regular mesh thereof.

Note: Before any series of measurements, calibration bench is doubly controlled in part by measuring a reference phone and secondly by measuring a calibrated phantom plane dipole. Additional checks are also performed daily (property of liquids ...).



S.A.R

To give an order of magnitude of the emissions

A comparison between some SAR equipment, knowing that the maximum values are obtained on the phone to 900 MHz:

- Cell phone ~ 700 mW / kg
- Wired Headset ~ 60 mW / kg
- Bluetooth ~ 7 mW / kg



E.M.C

Electromagnetic compatibility (EMC) is the ability of a device or an electrical or electronic system, to operate in its electromagnetic environment satisfactorily without producing itself intolerable electromagnetic disturbances to anything that is in this environment. Good electromagnetic compatibility describes a state of "good electromagnetic neighborhood" :

- Limit the level of unwanted emissions from the device, to not interfere with radio reception or other equipments
- Be adequately immunized against interference from other equipment, or more generally the environment.

Electromagnetic and radio noise are the result of all electrical currents inducing a multitude of fields and spurious signals.



E.M.C

Two types of problems can occur :

- emitted interference
- immunity

There are two modes of propagation of EM waves:

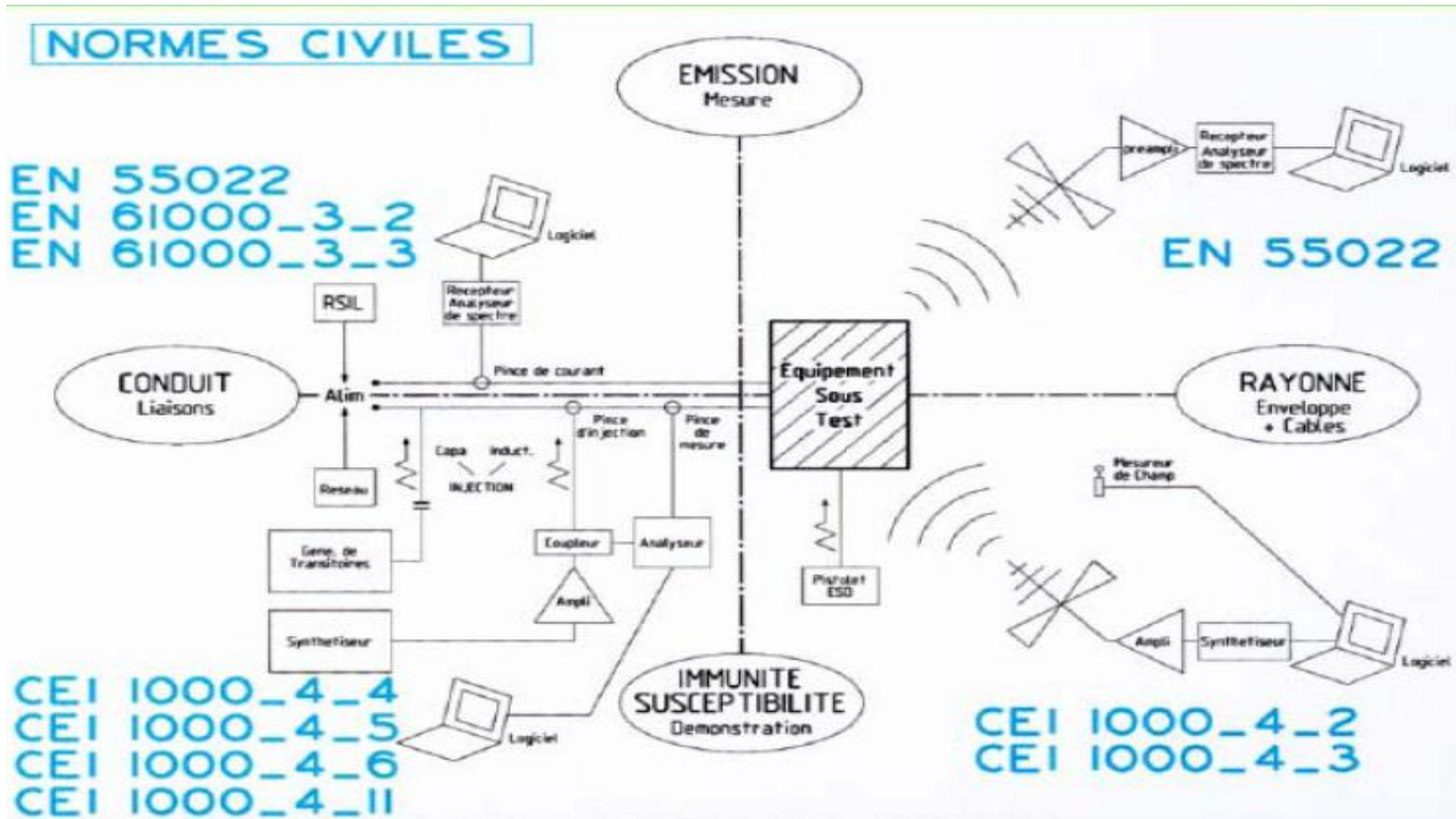
- radiation
- conduction

E.M.C

Standards will therefore define four types of tests:

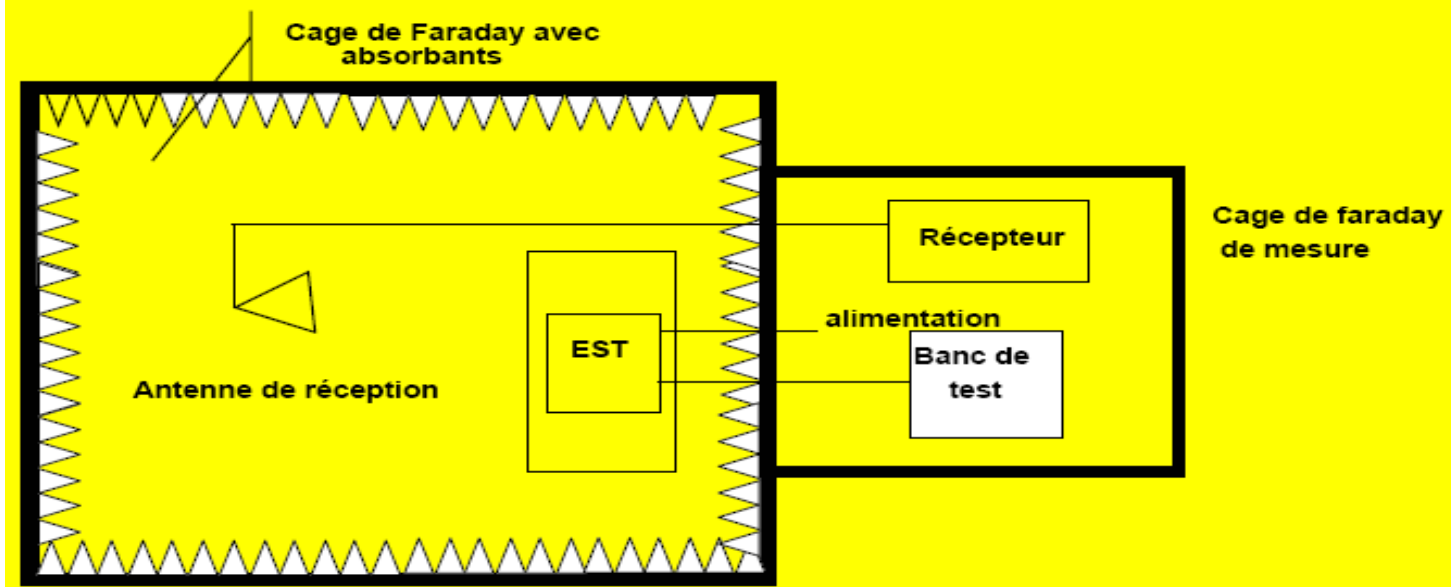
- Disturbances from conduction
- Disturbances from emitted radiation
- conducted immunity
- radiated immunity

E.M.C



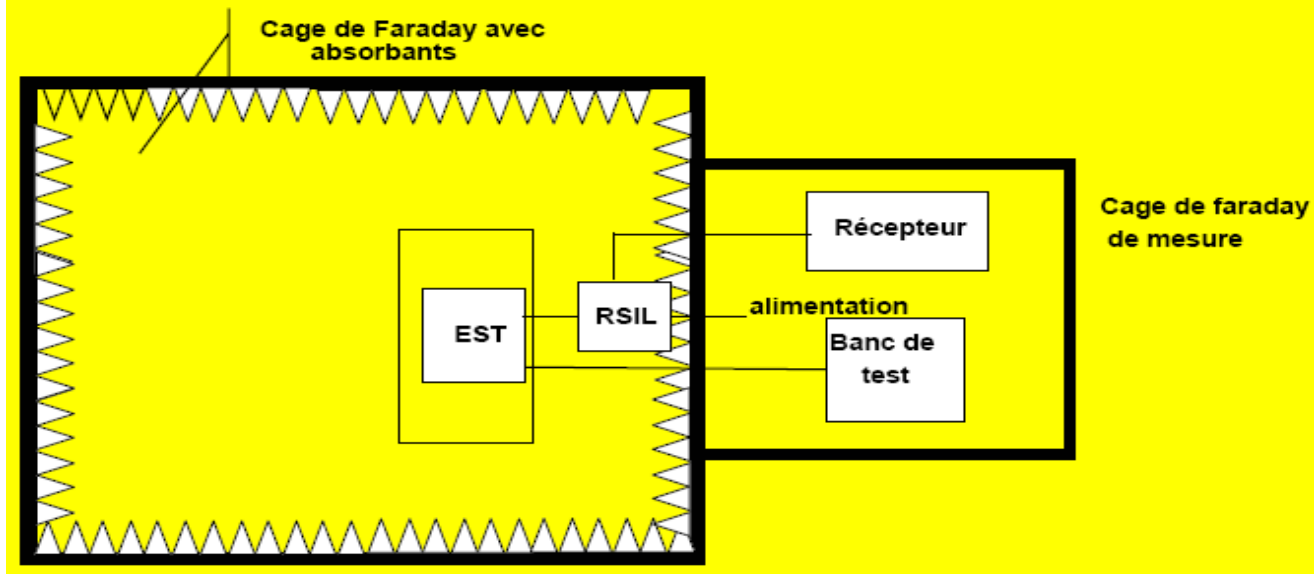
E.M.C

Emission Rayonnée



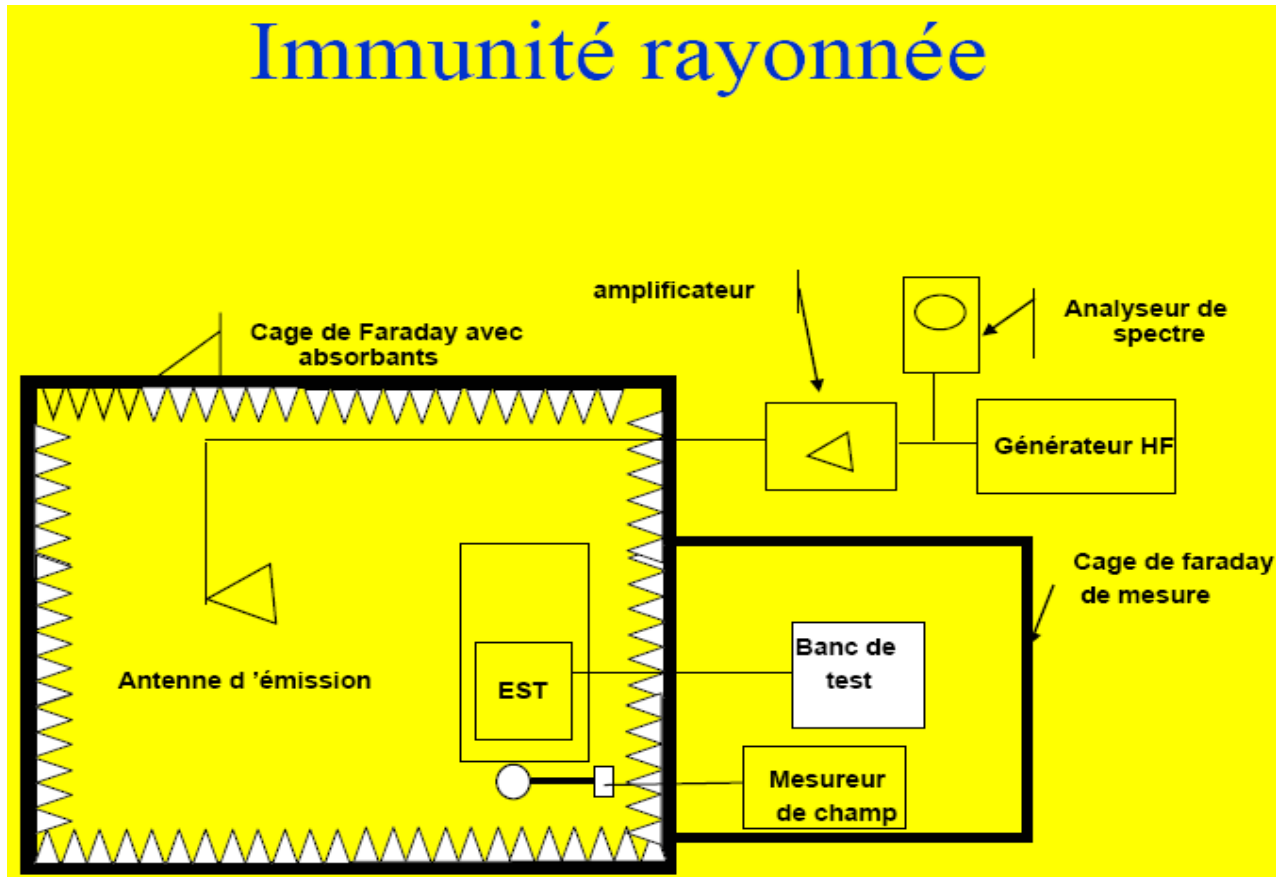
E.M.C

Emission conduite



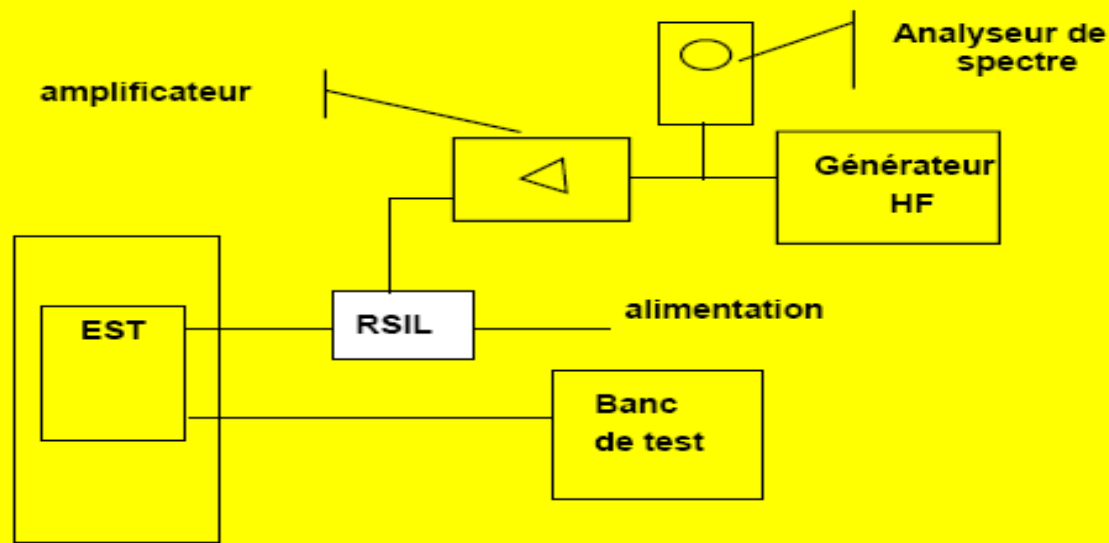
E.M.C

Immunité rayonnée



E.M.C

Immunité conduite





- ISO / IEC 17025 is the global standard for calibration and testing laboratories. The reference document used is that published in 2005 by the concerned organization

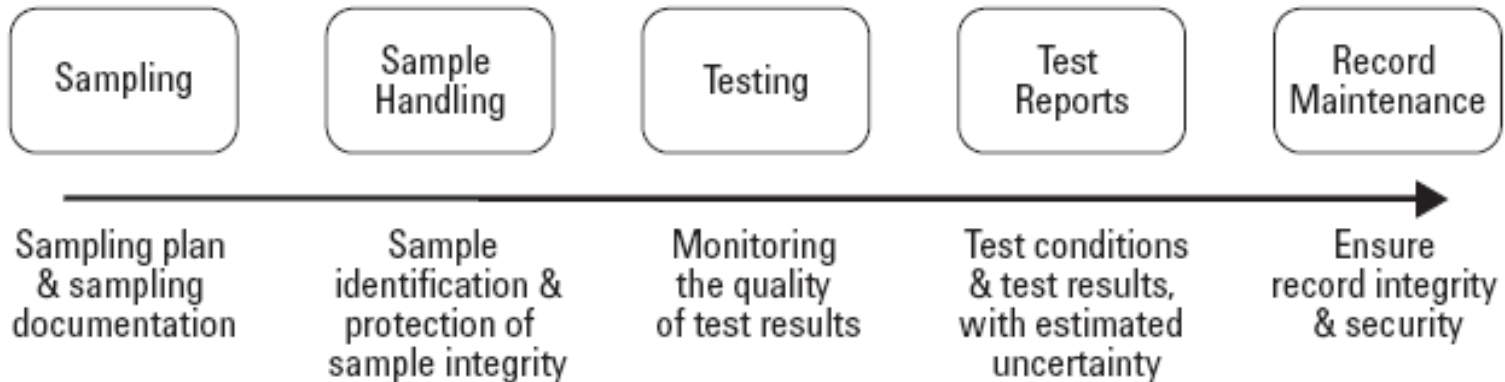


ISO17025 accreditation ▶▶▶▶



- There are two main clauses in ISO / IEC 17025 :
management requirements and technical requirements.
- Management requirements are related to the operation and effectiveness of the system of quality management within the laboratory and the requirements of this clause are similar to those of the ISO 9001 standard.
- The technical requirements cover the skills of the team, the testing methodology, equipment and quality reports on the results of tests and calibrations.

ISO/IEC 17025 Requirements for Testing Laboratories



Compliance across all workflow steps

- Validation of analytical methods & procedures
- Equipment calibration testing & maintenance
- Qualification of material
- Traceability
- Control of nonconforming testing
- Qualification of personnel
- Controlled environmental conditions
- Written procedures

Compliance across the laboratory

Documentation control, corrective & preventive actions, complaint handling, supplier & subcontractor management, non-conflicting organizational structure, internal audits



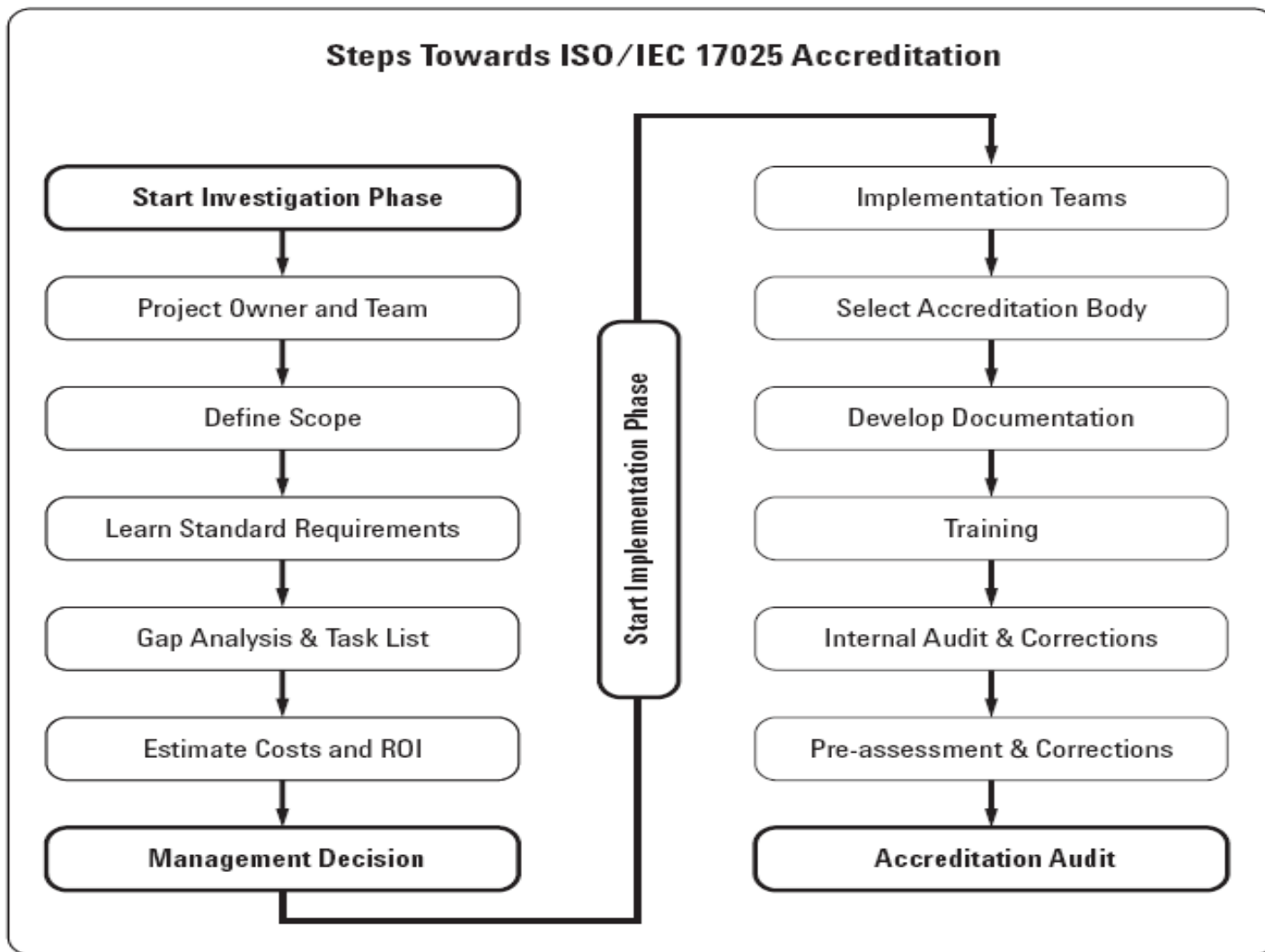
Management requirements

1. Organization
2. Management system
3. Documentary checks
4. Review of requests, tenders and contracts
5. Subcontracting of tests and calibrations
6. Purchasing services and supplies
7. Customer Service
8. Claims
9. Control calibrations and / or non-compliant testing.
10. Improvements
11. Corrective actions
12. Preventive actions
13. Control recordings
14. Internal audits



Technical requirements

1. Staff
2. Housing conditions and environmental
3. Of testing and calibration methods and method
4. Validation
5. Equipment
6. Measurement Traceability
7. Sampling
8. Handling of calibration and testing elements
9. Quality assurance of test results and calibration
10. Reporting of results





In the study phase , information is collected to determine if accreditation is economically reasonable and generally follows the following steps:

- 1 . Management allocates funds and resources to the study.
- 2 . Management refers to a project manager. Ideally, this person should have experience of laboratory operations , business sense , a good understanding of quality systems and excellent communication skills.
- 3 . The project manager must recruit a project team with the assistance of management. The team members must come from the laboratory management , quality assurance of financial services , human resources, training and documentation.
- 4 . The project team determines the scope of accreditation considered. This may include all the calibrations and / or in laboratory tests or only part of them .



5. The project team study in detail the requirements for accreditation. The main source is the ISO / IEC 17025, with the advice of external experts.
6. The project team develops a list of requirements. This list should include all the necessary documents for the standard
7. The project team prepare a gap analysis comparing the requirements to what is already available and implemented. A gap exists where the policies, processes and existing procedures are not fully compliant with the requirements.



8. Using the results of the gap analysis, the project team develope the list.
9. The project manager with the help of an external consultant performs a global cost estimate for implementation of the ISO / IEC standard. Costs are compared to the estimated tangible benefits resulting directly from obtaining accreditation
10. The team make an estimate of the return on investment in both the short and long term.
11. Management decides to accept or reject these proposals and whether to proceed with the accreditation process.



Once the decision to apply for accreditation to ISO / IEC 17025 plug, laboratory studies, designs and realizes the preparatory documentation for the accreditation assessment. A typical implementation proceeds according to the following steps:

1. The project manager as team implementation in different areas. It is very important that all services involved are represented in the teams at all levels of management.
2. The project manager looking for a notified body and chooses the one that best fits the needs of the laboratory.
3. Teams develop documentation such as procedures under the supervision of the project manager.



4. The project manager sets up the training of the team.
5. The quality assurance department conducts an internal audit and, if necessary, initiates corrective actions.
6. The notified body chosen performs a pre-assessment.
7. The project manager initiates Corrective actions.
8. The notified body carries out an accreditation audit.



The foundation of a certification service must be overwhelming followed by three other services: standardization, technology monitoring and training, quality

- Service standards: it ensures the development and monitoring of standards and national and international requirements. It develops very specific reports to be followed by laboratory technicians



- The technology monitoring and training service which provides:
 - 1- Monitoring of all new technologies
 - 2- The annual training plan development for laboratory technicians
- Quality Service : it ensures the implementation and updating of approval procedures and preparation of means of accreditation and ISO.



The approval process in a country is a very necessary step for the safety of the state, final consumers and the proper functioning of its telecommunication network.

But it must not be an economic and regulatory obstacles for investors and traders.

So we must put this project in place with flexible and reliable procedures.



THANKS