



























Inter-American Institute for  
Cooperation on Agriculture

Process Manual 10 Information and Communication  
Technologies

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## Macroprocess

### 10 Information and Communication Technologies (ICTs).

<b>Objective</b>	Ensure that the Institute has access to the best information technology, to carry out effective institutional and technical cooperation processes, promoting collaborative work, applying innovative criteria and optimizing the available resources.
<b>Scope</b>	Hemispheric level. Technical-regulatory actions at a hemispheric level. Centralization at strategic levels and at Headquarters. Partial decentralization at tactical and operational levels, per region and country.

Inputs	Processes	Outcomes	
Institutional development needs, both strategic and tactical.  Requests for computer services.  Incident detection through monitoring systems.	ICTs Institutional Management.	Suitable technological architecture adapted to the collaborative and high-productivity principles of the institution.	
	Application Operations.	Databases effectively stored and available.  Innovative applications, implemented and available.	
	Infrastructure Operations.	Infrastructure and networks adequately maintained and operational.	
	Cross-Cutting Management.	Guaranteed integrity and safeguarding of the technology information flow.	
		Inventory of technological equipment to guide decision-making and actions.	

## Process

### 10.1 ICT Institutional Management.

<b>Objective</b>	Ensure that all the strategic, core and support macroprocesses of the Institution employ information and communication technologies in keeping with a principle of efficiency, innovation and continuous improvement.
<b>Scope</b>	Hemispheric level. Technical-regulatory actions at a hemispheric level. Centralization at strategic levels and at Headquarters. Partial decentralization at tactical and operational levels, per region and country.
<b>Specific Policies and rules</b>	<ol style="list-style-type: none"> <li>1. The ICT Tactical Plan (ICTTP) shall be valid for a period of no more than four years and must be validated by the Institutional Strategic Committee or its equivalent.</li> <li>2. The ICTTP must be revised every two years in order to reassess its validity or make any necessary amendments or updates.</li> <li>3. The follow-up of projects executed under the responsibility of the Information and Communications Technologies and Digital Agriculture Division must comply with the requirements set forth in the Project Master Plan, the ICTTP and the ICTAAP.</li> <li>4. The Information and Communication Technologies and Digital Agriculture Division must guarantee that all policies and regulations regulating the development and use of Information and Communication Technologies are correctly updated.</li> <li>5. The Information and Communication Technologies and Digital Agriculture Division must ensure the continuity of all services aimed at supporting operational and cross-cutting management processes.</li> </ol>
<b>Information Systems</b>	Office applications - Project control - E-mail, Web browsers.
<b>Indicators</b>	<ul style="list-style-type: none"> <li>• Ongoing projects and Plans: Percentage of actual progress in relation to percentage of programmed progress lower than or equal to 5%.</li> <li>• Actual execution time in relation to programmed execution time.</li> <li>• Executed budget in relation to estimated budget.</li> <li>• No incidents resulting from inconsistencies in current policies or regulations.</li> </ul>

Process	Subprocess
10.1 ICT Institutional Management.	10.1.1 ICT Project Management.
	10.1.2 ICT Contract Management.

## Subprocess

### 10.1.1 ICT Project Management.

<b>Objetive</b>	Provide IICA with Information and Communication Technologies aligned with the institutional strategy, developed through adequately created and controlled projects.	
<b>Inputs</b>	<b>Background information</b>	<b>Reference Material</b>
	<ul style="list-style-type: none"> <li>Projects based on the ICTTP and ICTAAP.</li> <li>Needs identified through institutional operations.</li> </ul>	<ul style="list-style-type: none"> <li>Tactical Plan - ICTTP.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Procedures Manual on Personal Data Protection.</li> <li>Reports generated through the cross-cutting management process.</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Annual Action Plan – ICTAAP.</li> <li>Financial regulations.</li> <li>Reference documents defined by the subprocess support systems.</li> </ul>
<b>Products</b>	Technological architecture in keeping with the collaborative, high-productivity principles of the Institution. Innovative applications, implemented and available.	

**10.1 ICT Institutional Management.**

**10.1.1 ICT Project Management.**

Corporate Services Management	Information and Communication Technologies and DA Management	Mixed	Comments
<p><b>INVOLVED</b></p> <p>Corporate Services Director ( CSD ) Information and Communication Technologies and DA Manager ( ICTM-DA ) ICT Technicians ( T ) Project Team ( PT )</p>	<p>ICTM-DA / PT 2- Define project team and draft the project work plan. (Ob1).</p> <p>ICTM -DA/ PT 3- Carry out execution or follow-up actions according to each role. (Ob1)</p> <p>ICTM-DA 4. What type of activities do they correspond to?</p> <p>EXECUTION</p> <p>FOLLOW-UP</p>	<p>START</p> <p>ICTM-AD 1- Identify project to be executed according to the ICTTP or the ICTAAP.</p>	<p><b>Ob1:</b> The Project Team defines the objectives, scope and project plan. A project leader is assigned to control progress and incidents that may occur. Follow-up standards shall be based on the guidelines of <b>Macroprocess 8, Project Management</b>. When applicable, execution times for contracting external agencies shall be considered. The procedures contained in the <b>Manual on Personal Data Protection</b> must be applied when the project requires collection of personal data from third parties to guarantee the rights of the data subjects.</p>
<p>Corporate Services Management</p>	<p>1</p> <p>TP 5- Project execution</p> <p>TP 5.1 Create a blueprint of the desired solution. (Ob2).</p> <p>PT 5.2 Develop, configure and test the defined solution in a test environment (Ob3).</p> <p>T / PT 5.3 Test processes with expert users to identify the necessary adjustments. (Ob4).</p> <p>T / EP 5.4 Install in a production environment and initiate the developed solution. Move on to Activity 7.(Ob5).</p> <p>3</p>	<p>Mixed</p>	<p><b>Ob2:</b> Design the to-be situation from a technical and business perspective.</p> <p><b>Ob3:</b> Se podrán ejecutar procesos de compras y contratación de terceros si el proyecto lo amerita (siempre y cuando estén soportados, presupuestariamente), Purchasing and third-party contracting processes may be carried out if so required by the project (as long as they are supported by the budget). In addition, if the project requires collection of personal data, the hiring of a third party (Data Processor) must be verified as indicated in Annex 6 of the <b>Manual on Personal Data Protection</b>. Designed and previously tested in a controlled environment.</p> <p><b>Ob4:</b> Designed and previously tested in a controlled environment.</p> <p><b>Ob5:</b> The solution shall be monitored during the stipulated time period to make all final adjustments.</p>
<p>Corporate Services Management</p>	<p>2</p> <p>ICTM-DA / PT 6- Project follow-up</p> <p>ICTM-DA / PT 6.1 Control the execution of the project pursuant to the defined program. (Ob6).</p> <p>ICTM-DA / PT 6.2 Define corrective actions if incidents are detected which may affect the defined time periods or resources.</p> <p>ICTM-DA / PT 6.3 Document the process evolution, progress and the applied corrective actions.</p> <p>ICTM-DA / PT 6.4 Follow-up on the process and notify the progress or finalization of the project to the corresponding units, following macroprocess 8 Project Management.</p> <p>PT 6.5 Is the process finalized?</p> <p>NO</p> <p>YES</p> <p>4</p>	<p>Mixed</p>	<p><b>Ob6:</b> The Corporate Services Director will be kept informed of the progress attained to update the Project Master Plan and related Tactical Plans, and the Institutional Strategic Committee must be notified.</p>
<p>Corporate Services Management</p> <p>CSD 10- Notify the final results to the Institutional Strategic Committee (or its equivalent).</p> <p>END</p>	<p>3</p> <p>4</p> <p>ICTM-DA / T / PT 7- Document the developed solution. (Ob7).</p> <p>ICTM-DA / PT 8- Hold a closing meeting and provide feedback to the project team. (Ob8).</p> <p>ICTM-DA 9- Notify the obtained results to the Corporate Services Directorate.</p>	<p>Mixed</p>	<p><b>Ob7:</b> The developed technical solution, the affected processes, the project management and the change management must be documented. This information may be included in the knowledge management process of the Institution.</p> <p><b>Ob8:</b> The project will be considered finalized when the solution becomes part of the regular operation, accompanied by an analysis of resolved and pending issues. Feedback will be given comparing the parameters of formulation with the actual execution, identified problems, adopted solutions and recommendations for future projects.</p>

## Subprocess

### 10.1.2 ICT Contract Management.

<b>Objective</b>	Ensure that all Information and Communication Technologies equipment and services required by IICA are readily available, in order to guarantee the continuous operation of the Institution's applications and infrastructure.	
<b>Inputs</b>	<b>Background information</b>	<b>Reference Material</b>
	<ul style="list-style-type: none"> <li>Equipment and service requirements identified in the ICT Tactical Plan.</li> <li>Equipment and service requirements identified through institutional operations.</li> </ul>	<ul style="list-style-type: none"> <li>ICT Tactical Plan.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Procedures Manual on Personal Data Protection.</li> <li>Reports generated through the cross-cutting management process.</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Project Master Plan.</li> <li>Service catalogue.</li> <li>Reference control reports.</li> <li>Application inventory.</li> <li>Infrastructure inventory.</li> <li>Reference documents defined by the subprocess support systems.</li> </ul>
<b>Products</b>	Support equipment and services adapted to institutional needs.	

## 10.1 ICT Institutional Management.

### 10.1.2 ICT Contract Management.

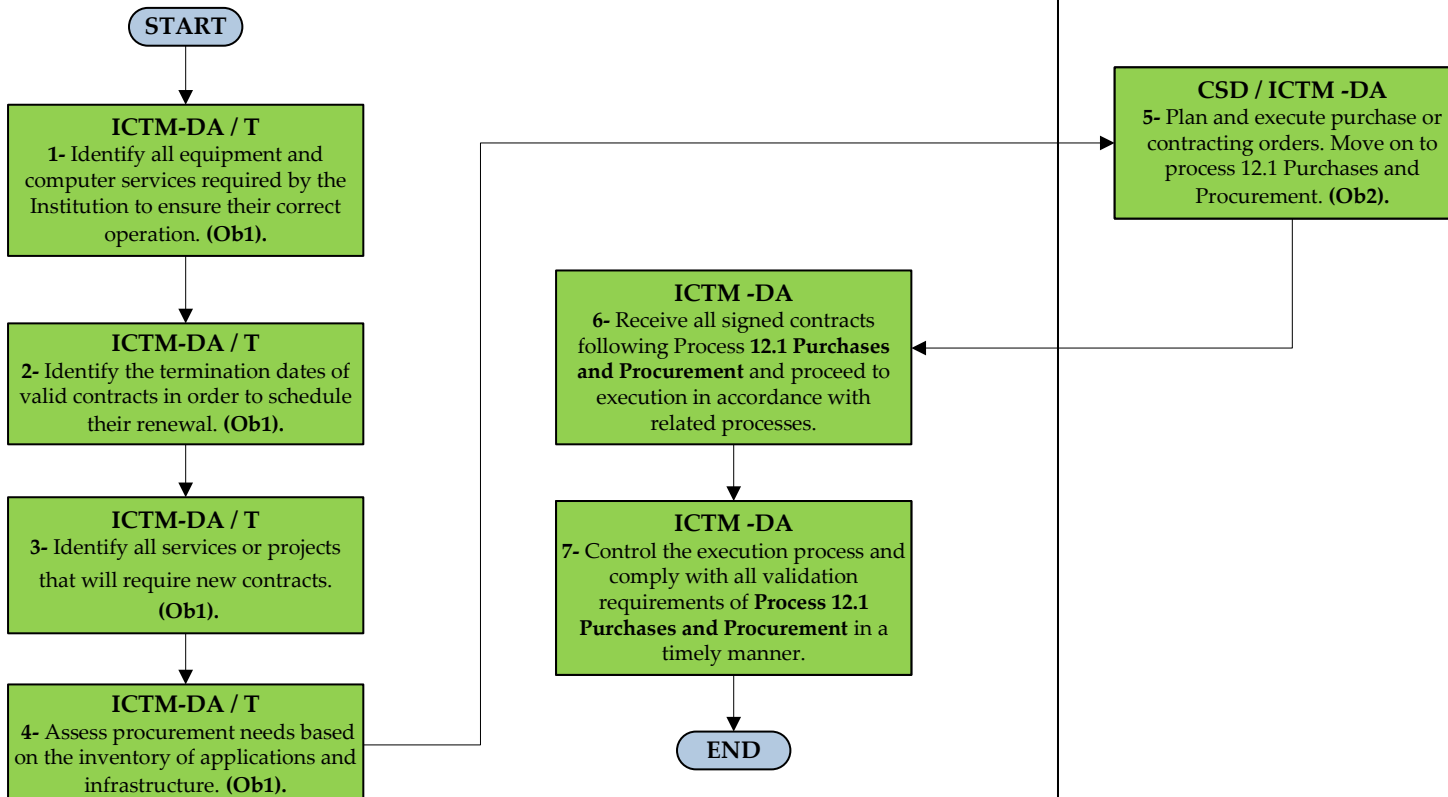
INVOLVED

Corporate Services Director ( DSC )  
Information and Communication Technologies and DA Manager ( ICTM-DA )  
ICT Technicians ( T )

#### Information and Communication Technologies and DA Management

Mixed

Comments



**Ob1:** These activities are carried out once a year.  
.Support services set forth in the Service Catalogue shall be taken into account, together with services required to implement update or innovation projects. These activities shall be part of the inputs used to define the budgetary and procurement planning of the ICTM-DA. When a third party is hired as a Data Processor the contract must include the requirements indicated in the Manual on Personal Data Protection.

**Ob2:** This process must take into account dates and time needed for the execution of the corresponding contracts.



## Process

### 10.2 Application operations.

<b>Objective</b>	Ensure that all applications installed at IICA are functional and available as required to maintain a continuous institutional operation.
<b>Scope</b>	<p>Hemispheric level.          Technical-regulatory actions at a hemispheric level.          Centralization at strategic levels and at Headquarters.          Partial decentralization at tactical and operational levels, per region and country.</p>
<b>Specific Policies and Rules</b>	<ol style="list-style-type: none"> <li>1. The ICTAAP shall provide the guidelines regarding compliance levels of programmed interventions and application availability goals.</li> <li>2. This process shall ensure the correct operation of applications, anticipating any need for expansion, replacement or renewal that may result in improvement projects for the ICT Institutional Management process.</li> <li>3. The need for support provided by external resources shall be considered. Contracting times must also be taken into account to guarantee the continuity of institutional operations.</li> <li>4. Cybersecurity initiatives implemented throughout the process must guarantee the safeguarding of information against intrusions from parties external to IICA.</li> <li>5. Three levels of responsibility are defined to address these tasks:             <ul style="list-style-type: none"> <li>• 1st level: end user resolves the issue with the support of ICTM.</li> <li>• 2nd level: ICTM resolves the issue directly.</li> <li>• 3rd level: issue is resolved by an external supplier.</li> </ul> </li> <li>6. All level 2 and level 3 incidents and requirements must be revised to determine whether corrective actions are to be taken or large-scale changes made.</li> </ol>
<b>Information Systems</b>	Monitoring systems.
<b>Indicators</b>	<ul style="list-style-type: none"> <li>• Applications installed with no errors after delivery.</li> <li>• Number of level 2 and level 3 incidents solved in a timely manner in relation to the total number of incidents received at said levels.</li> <li>• Number of incidents received by an end user in relation to the total number of incidents received.</li> </ul>

Process	Subprocess
10.2 Application operations.	10.2.1 Engineering of New Applications.
	10.2.2 Maintenance of Applications.
	10.2.3 Maintenance of Web and Cloud Developments.

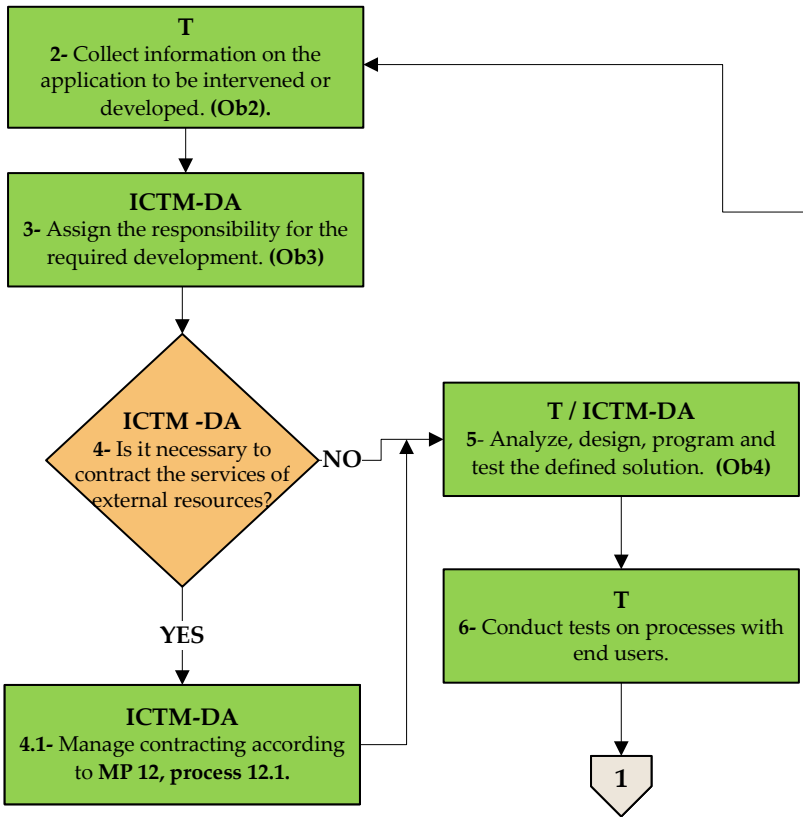
## Subprocess

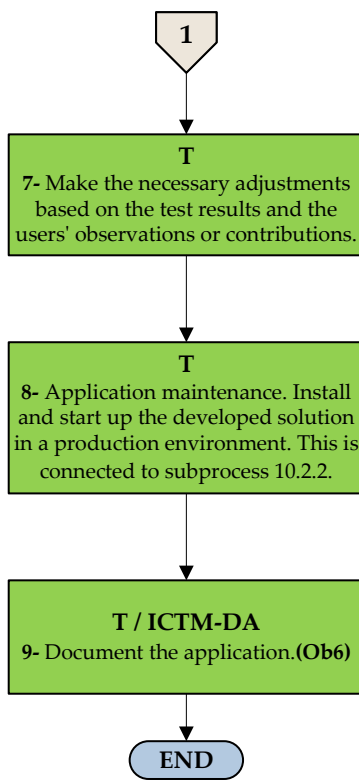
### 10.2.1 Engineering of New Applications.

<b>Objetive</b>	Ensure the timely detection and efficient implementation of additional developments, generated as a result of projects or incidents detected in the Cross-cutting Management process.	
<b>Inputs</b>	<b>Background information</b>	<b>Referente Materials</b>
	<ul style="list-style-type: none"> <li>Preventive intervention requirements (established by developers)</li> <li>Corrective action needs (based on incident monitoring)</li> </ul>	<ul style="list-style-type: none"> <li>Application inventory.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Procedures Manual on Personal Data Protection.</li> <li>Documentation generated by developers (internal or external).</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Service Catalogue.</li> <li>Statistical report from Process 10.4 Cross-cutting Management.</li> <li>Reference documents defined by subprocess support systems.</li> </ul>
<b>Products</b>	Installed applications with a level of availability equal to or higher than the current level.	

## 10.2 Operation of applications.

### 10.2.1 Engineering of New Applications.

<b>INVOLVED</b>	Corporate Services Director ( DSC ) Information and Communication Technologies and DA Manager ( ICTM -DA ) ICT Technicians ( T )		
	<b>Information and Communication Technologies and DA Management</b>	<b>Mixed</b>	<b>Comments</b>
	 <pre>                     graph TD                         T2[T 2- Collect information on the application to be intervened or developed. (Ob2).] --&gt; ICTM3[ICTM-DA 3- Assign the responsibility for the required development. (Ob3)]                         ICTM3 --&gt; D4{ICTM-DA 4- Is it necessary to contract the services of external resources?}                         D4 -- YES --&gt; ICTM4[ICTM-DA 4.1- Manage contracting according to MP 12, process 12.1.]                         D4 -- NO --&gt; TICTM5[T / ICTM-DA 5- Analyze, design, program and test the defined solution. (Ob4)]                         TICTM5 --&gt; T6[T 6- Conduct tests on processes with end users.]                         T6 --&gt; 1_1{1}                         1_1 --&gt; T2                         CSD[CSD / ICTM-DA 1- Identify the need for new applications. (Ob1).] --&gt; T2                 </pre>	<p><b>START</b></p> <p><b>CSD / ICTM-DA</b> 1- Identify the need for new applications. (Ob1).</p>	<p><b>Ob1:</b> The follow-up on innovation or improvement projects and statistics produced in process 10.4 <b>Cross-cutting Management</b> may be used as background information for this subprocess.</p> <p><b>Ob2:</b> If the application to intervene or develop includes the processing of personal data, points 4 and 5 of Annex 2 Data Protection by Design and by Default, points 9.1.b and 10 of Annex 3 Obligation to Inform Data Subjects and to Obtain their Consent and Annex 8 Retention and Deletion of Personal Data of the Manual on Personal Data Protection must be considered</p> <p><b>Ob3:</b> May be executed with the installed capacity or using specialized external resources (outsourcing).</p> <p><b>Ob4:</b> When external resources are contracted, the ICTM-DA shall always supervise their activities.If the new application includes personal data process, the third party (Data Processor) hired must comply with the requirements indicated in the Manual on Personal Data Protection.</p> <p><b>Ob5:</b> In a controlled environment.</p>

<b>Information and Communication Technologies and DA Management</b>	<b>Mixed</b>	<b>Comments</b>
 <pre>                     graph TD                         1_2{1} --&gt; T7[T 7- Make the necessary adjustments based on the test results and the users' observations or contributions.]                         T7 --&gt; T8[T 8- Application maintenance. Install and start up the developed solution in a production environment. This is connected to subprocess 10.2.2.]                         T8 --&gt; TICTM9[T / ICTM-DA 9- Document the application.(Ob6)]                         TICTM9 --&gt; END([END])                 </pre>		<p><b>Ob6:</b> The ICTM-DA must validate the generated documentation. If external resources are used, this product shall be a requirement to make the corresponding payments.</p>

## Subprocess

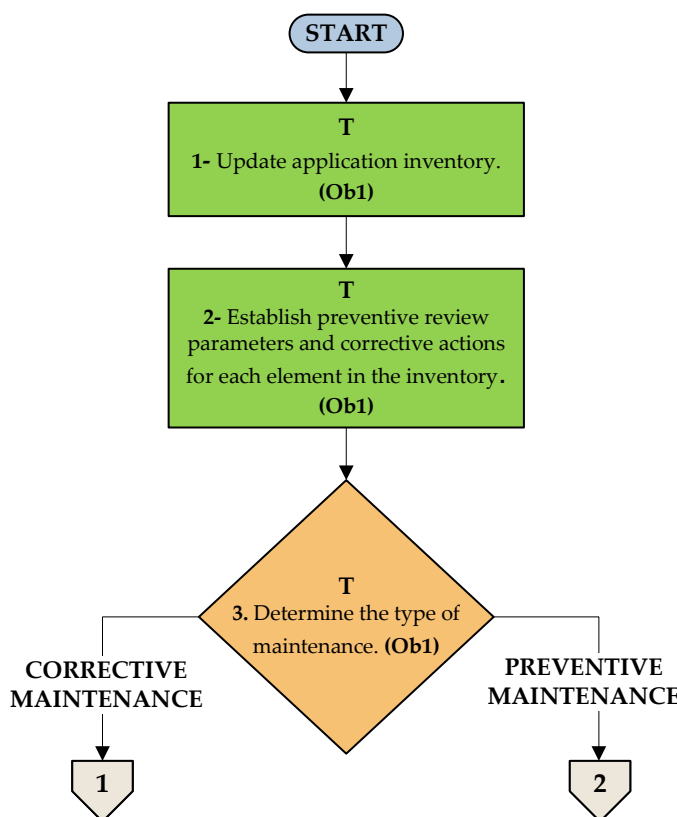
### 10.2.2 Maintenance of Applications.

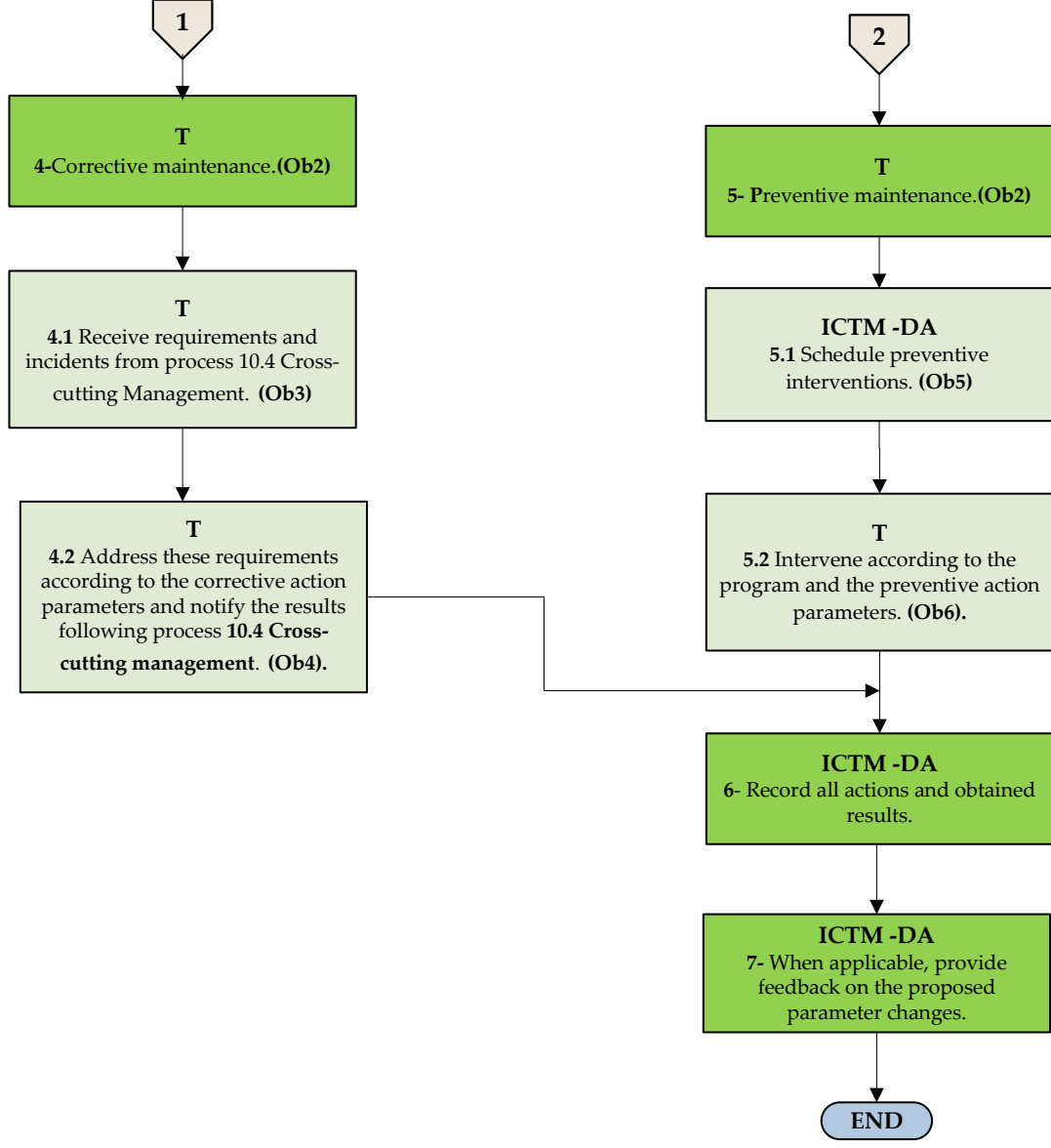
<b>Objetive</b>	Ensure that all applications installed at IICA are up-to-date and capable of providing the functionality and availability required by the processes they support.	
<b>Inputs</b>	<b>Background Information</b>	<b>Reference Materials</b>
	<ul style="list-style-type: none"> <li>Incidents detected in the Cross-cutting Management process regarding application development (levels 2 and 3).</li> <li>Identification of needs to modify installed applications (as a result of the implementation of innovation projects or improvements).</li> </ul>	<ul style="list-style-type: none"> <li>The ICTAAP shall establish the guidelines for programmed interventions and application availability goals.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Procedures Manual on Personal Data Protection.</li> <li>Inventory of applications installed at IICA.</li> <li>Documentation generated by developers (internal and external).</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Service catalogue.</li> <li>Reference documents defined by subprocess support systems.</li> </ul>
<b>Products</b>	Installed applications at IICA with a level of availability that is equal to or higher than the current level.	

**10.2 Operation of applications.**

**10.2.2 Maintenance of Applications.**

<b>INVOLVED</b>	<p>Corporate Services Director ( CSD ) Information and Communication Technologies and DA Manager ( ICTM-DA ) ICT Technicians ( T )</p>
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Information and Communication Technologies and DA Management	Comments
 <pre> graph TD     START([START]) --&gt; T1[T: 1- Update application inventory. (Ob1)]     T1 --&gt; T2[T: 2- Establish preventive review parameters and corrective actions for each element in the inventory. (Ob1)]     T2 --&gt; T3{T: 3. Determine the type of maintenance. (Ob1)}     T3 -- CORRECTIVE MAINTENANCE --&gt; 1{{1}}     T3 -- PREVENTIVE MAINTENANCE --&gt; 2{{2}}             </pre>	<p><b>Ob1:</b> These are annual activities based on documentation supplied by developers and the Knowledge Management Unit, and result in a plan (dates, frequencies, responsible individuals). The implementation of TIC projects may require the reconfiguration of active applications (preventive maintenance). In addition, in case the system contains personal data, the retention period must be considered as indicated in Annex 7 Conservation and Destruction of Personal Data of the Manual on Personal Data Protection.</p>

Information and Communication Technologies and DA Management	Comments
 <pre> graph TD     1{{1}} --&gt; T4[T: 4-Corrective maintenance. (Ob2)]     T4 --&gt; T41[T: 4.1 Receive requirements and incidents from process 10.4 Cross-cutting Management. (Ob3)]     T41 --&gt; T42[T: 4.2 Address these requirements according to the corrective action parameters and notify the results following process 10.4 Cross-cutting management. (Ob4)]     2{{2}} --&gt; T5[T: 5- Preventive maintenance. (Ob2)]     T5 --&gt; ICTM51[ICTM-DA: 5.1 Schedule preventive interventions. (Ob5)]     ICTM51 --&gt; T52[T: 5.2 Intervene according to the program and the preventive action parameters. (Ob6)]     T52 --&gt; ICTM6[ICTM-DA: 6- Record all actions and obtained results.]     T42 --&gt; T52     T52 --&gt; ICTM7[ICTM-DA: 7- When applicable, provide feedback on the proposed parameter changes.]     ICTM7 --&gt; END([END])             </pre>	<p><b>Ob2:</b> If preventive maintenance is needed in applications intended for data processing and when it is necessary to modify the requested data, the data subjects must be informed and their consent must be requested, based on the provisions of Annex 3 Obligation to Inform Data Subjects and to Obtain their Consent of the Manual on Personal Data Protection.</p> <p><b>Ob3:</b> Three levels of responsibility are defined: 1st level: end user resolves the issue with the support of ICTM-DA. 2nd level: ICTM solves the issue. 3rd level: an external vendor resolves the issue.</p> <p><b>Ob4:</b> Depending on the incident level, external resources may be needed. The Change Control shall be managed through the Cross-cutting Management Process.</p> <p><b>Ob5:</b> This subprocess allows for executing subprocess 10.2.1 Engineering of New Applications.</p> <p><b>Ob6:</b> Depending on the type of intervention or incident level, external resources may be used.</p>

## Subprocess

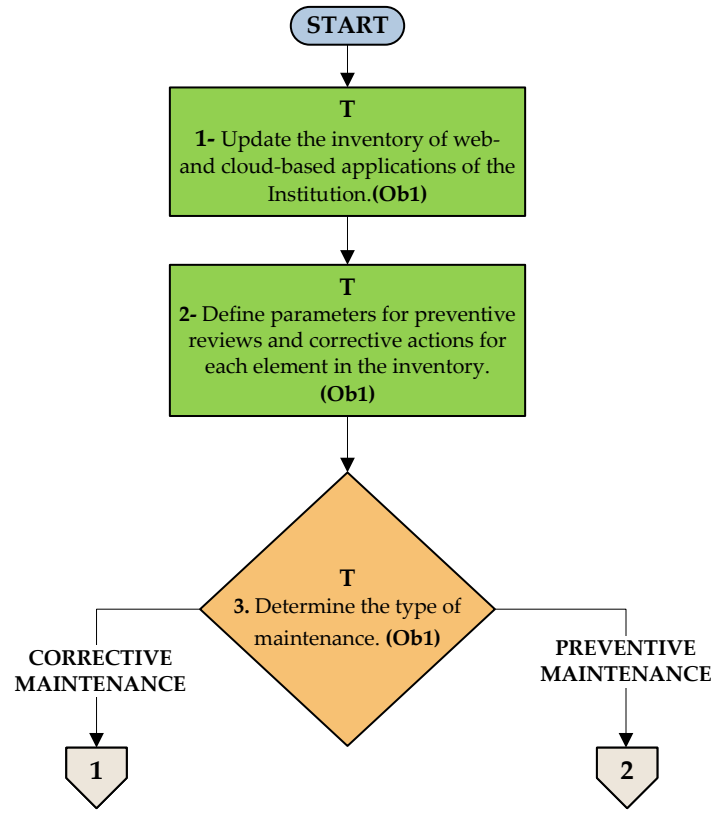
### 10.2.3 Maintenance of Web and Cloud Developments.

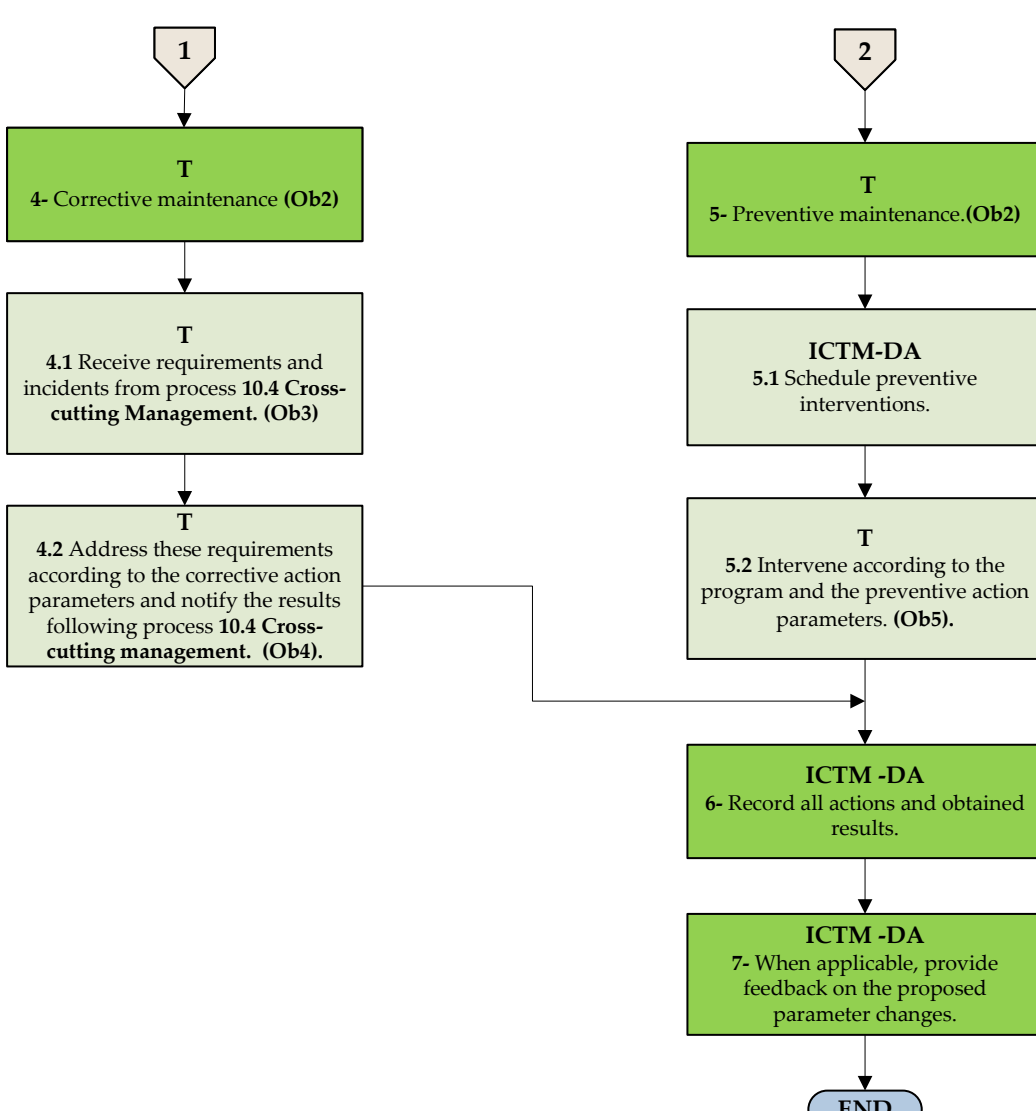
<b>Objective</b>	Ensure that all web and cloud applications acquired or developed at IICA are updated and in suitable condition to offer the required availability and functionality.	
<b>Inputs</b>	<b>Background Information</b>	<b>Reference Materials</b>
	<ul style="list-style-type: none"> <li>Incidents detected in the Cross-cutting Management process related to web and cloud applications.</li> </ul>	<ul style="list-style-type: none"> <li>Inventory of web and cloud applications.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Procedures Manual on Personal Data Protection.</li> <li>Documentation generated by developers (internal or external).</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Reference documents defined by the subprocess support systems.</li> </ul>
<b>Products</b>	Installed applications at IICA with a level of availability that is equal to or higher than the current level.	

**10.2 Operation of applications.**

**10.2.3 Maintenance of Web and Cloud Developments.**

<b>INVOLVED</b>	<p>Corporate Services Director ( CSD ) Information and Communication Technologies and DA Manager ( ICTM -DA ) ICT Technicians ( T )</p>
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Information and Communication Technologies and DA Management.	Comments
 <pre> graph TD     START([START]) --&gt; T1[T 1- Update the inventory of web- and cloud-based applications of the Institution.(Ob1)]     T1 --&gt; T2[T 2- Define parameters for preventive reviews and corrective actions for each element in the inventory. (Ob1)]     T2 --&gt; D1{T 3. Determine the type of maintenance. (Ob1)}     D1 -- CORRECTIVE MAINTENANCE --&gt; I1{{1}}     D1 -- PREVENTIVE MAINTENANCE --&gt; I2{{2}}                     </pre>	<p><b>Ob1:</b> This step includes e-mail platforms and virtual cloud services (OneDrive, Dropbox, etc.). These are annual activities based on documentation supplied by developers and the knowledge management unit, and result in a plan (dates, frequencies, responsible individuals). In addition, in case the system contains personal data, the retention period must be considered as indicated in Annex 7 Conservation and Destruction of Personal Data of the Manual on Personal Data Protection.</p>

Information and Communication Technologies and DA Management.	Comments
 <pre> graph TD     I1{{1}} --&gt; T4[T 4- Corrective maintenance (Ob2)]     T4 --&gt; T41[T 4.1 Receive requirements and incidents from process 10.4 Cross-cutting Management. (Ob3)]     T41 --&gt; T42[T 4.2 Address these requirements according to the corrective action parameters and notify the results following process 10.4 Cross-cutting management. (Ob4)]     I2{{2}} --&gt; T5[T 5- Preventive maintenance.(Ob2)]     T5 --&gt; ICTM51[ICTM-DA 5.1 Schedule preventive interventions.]     ICTM51 --&gt; T52[T 5.2 Intervene according to the program and the preventive action parameters. (Ob5).]     T42 --&gt; T52     T52 --&gt; ICTM6[ICTM -DA 6- Record all actions and obtained results.]     ICTM6 --&gt; ICTM7[ICTM -DA 7- When applicable, provide feedback on the proposed parameter changes.]     ICTM7 --&gt; END([END])                     </pre>	<p><b>Ob2:</b> If preventive maintenance is needed in applications intended for data processing and when it is necessary to modify the requested data, the data subjects must be informed and their consent must be requested, based on the provisions of Annex 3 Obligation to Inform Data Subjects and to Obtain their Consent of the Manual on Personal Data Protection.</p> <p><b>Ob3:</b> Three levels of responsibility are defined: 1st level: end user resolves the issue with the support of ICTM. 2nd level: ICTM-DA solves the issue. 3rd level: an external vendor resolves the issue.</p> <p><b>Ob4:</b> Depending on the incident level, external resources may be needed. The Change Control shall be managed through the Cross-cutting Management Process.</p> <p><b>Ob5:</b> Depending on the incident level, external resources may be needed.</p>

**Process**

**10.3 Infrastructure Operations.**

<b>Objective</b>	Ensure that all infrastructure installed at IICA is functional and available as required to maintain a continuous institutional operation.
<b>Scope</b>	Hemispheric level. Technical-regulatory actions at a hemispheric level. Centralization at strategic levels and at Headquarters. Partial decentralization at tactical and operational levels, per region and country.
<b>Specifics Policies and Rules</b>	<ol style="list-style-type: none"> <li>1. The ICTAAP shall provide the guidelines regarding compliance levels of programmed interventions and infrastructure availability goals.</li> <li>2. This process shall ensure the correct operation of software and hardware, anticipating any need for expansion, replacement or renewal that may lead to improvement projects for the ICT Institutional Management process.</li> <li>3. The need for support provided by external resources shall be considered. Contracting times must also be taken into account to guarantee the continuity of institutional operations.</li> <li>4. Cybersecurity initiatives implemented throughout the process shall guarantee the safeguarding of information against intrusions from parties external to IICA.</li> <li>5. Three levels of responsibility are defined to address these tasks: <ul style="list-style-type: none"> <li>• 1st level: end user resolves the issue with the support of ICTM-DA.</li> <li>• 2nd level: ICTM resolves the issue directly.</li> <li>• 3rd level: issue is resolved by an external vendor.</li> </ul> </li> <li>6. All level 2 and level 3 incidents and requirements must be revised to determine whether corrective actions are to be taken or wide-scope changes made.</li> </ol>
<b>Information Systems</b>	
<b>Indicators</b>	<ul style="list-style-type: none"> <li>• The infrastructure availability (telecommunications, system availability, servers, etc.) must be equal to or higher than 99%.</li> <li>• Number of level 2 and level 3 incidents solved in a timely manner in relation to the total number of incidents received at said levels.</li> <li>• Number of incidents received by an end user in relation to the total number of incidents received.</li> </ul>

<b>Process</b>	<b>Subprocess</b>
10.3 Infrastructure Operations..	10.3.1 Management of Network and Telecommunications Wiring.
	10.3.2 Network Management.
	10.3.3 Telecommunications Management.
	10.3.4 Maintenance of Technology Infrastructure.



## Subprocess

### 10.3.1 Management of Networks and Telecommunications Wiring.

<b>Objetivo</b>	Ensure that all wiring infrastructure is in optimal condition to support the flow of information that IICA must generate for voice and data transmission processes.	
<b>Inputs</b>	<b>Background Information</b>	<b>Reference Materials</b>
	<ul style="list-style-type: none"> <li>Preventive intervention requirements (defined by the manufacturers), established based on relevant issues identified through failure monitoring or by internal users.</li> </ul>	<ul style="list-style-type: none"> <li>Inventory of network wiring.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Documentation generated by manufacturers.</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Service Catalogue.</li> <li>Reference documents defined by the subprocess support systems.</li> </ul>
<b>Products</b>	Network and telecommunications wiring suitably controlled in operational conditions.	

## 10.3 Infrastructure Operations.

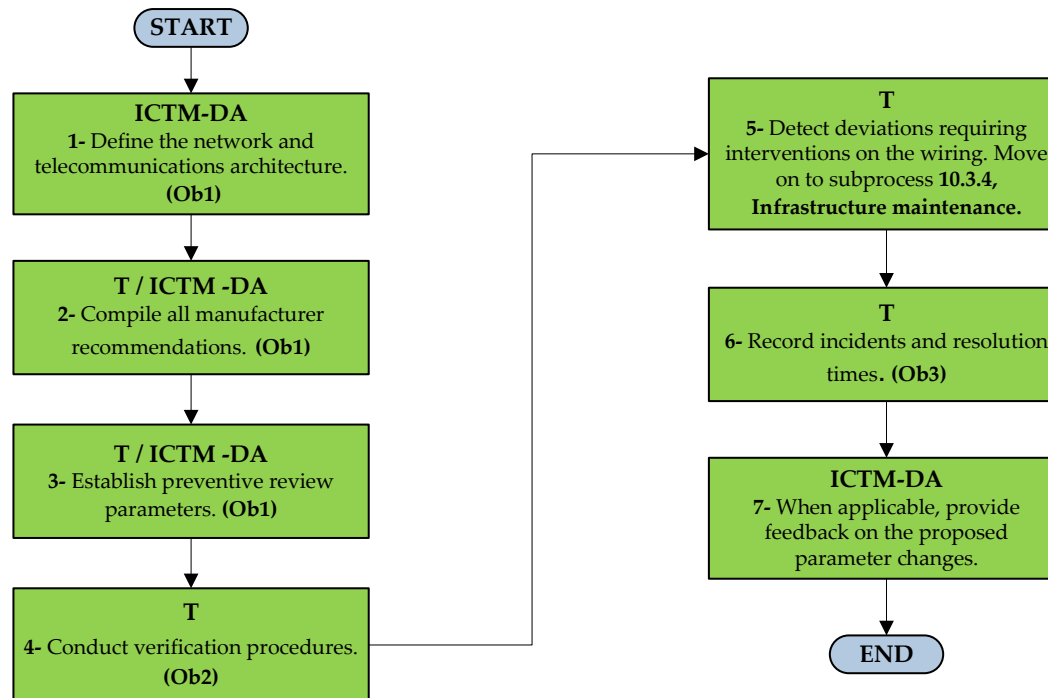
### 10.3.1 Management of Networks and Telecommunications Wiring.

INVOLVED

Corporate Services Director ( CSD )  
Information and Communication Technologies and DA Manager ( ICTM-DA )  
ICT Technicians ( T )

#### Information and Communication Technologies and DA Management

#### Comments



**Ob1:** These are annual activities and are based on documentation provided by developers and the knowledge management unit, and result in a plan (dates, frequencies, responsible individuals).

**Ob2:** Procedures are defined based on each element in the inventory.

**Ob3:** Incident statistics must be produced.

## Subprocess

### 10.3.2 Management of Networks.

<b>Objective</b>	Ensure that all wiring infrastructure is in optimal condition to support the flow of information that IICA must generate for voice and data transmission processes, with the required security levels.	
<b>Inputs</b>	<b>Background Information</b>	<b>Reference Materials</b>
	<ul style="list-style-type: none"> <li>Preventive intervention requirements (defined by the manufacturers), established based on relevant issues identified through failure monitoring or by internal users.</li> </ul>	<ul style="list-style-type: none"> <li>Inventory of network wiring.</li> <li>Documentation generated by manufacturers.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Service Catalogue.</li> <li>Reference documents defined by the subprocess support systems.</li> </ul>
<b>Products</b>	Data and voice networks correctly maintained and operational. Guaranteed integrity and safeguarding of the Institute's technological information flow.	

### 10.3 Infrastructure operations.

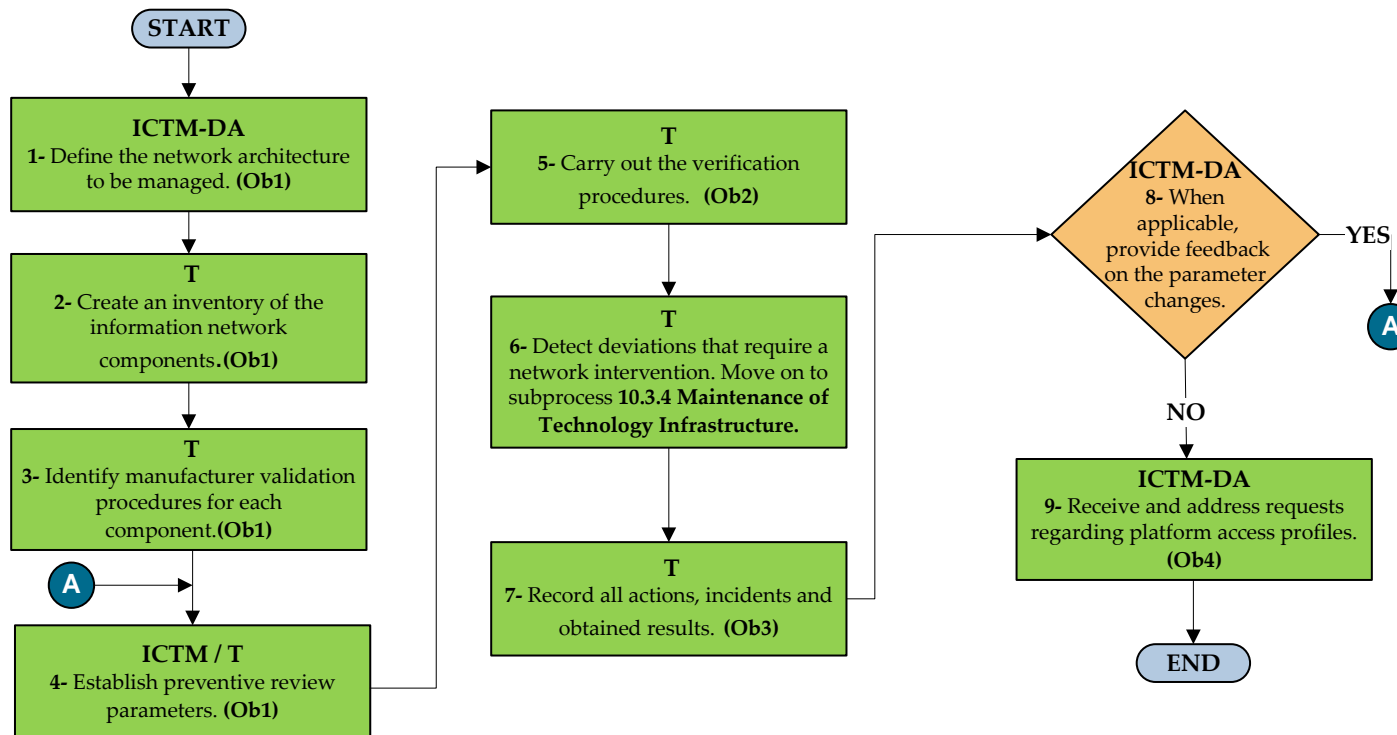
#### 10.3.2 Management of Networks.

INVOLVED

Corporate Services Director ( CSD )  
Information and Communication Technologies and DA Manager ( ICTM-DA )  
ICT Technicians ( T )

#### Information and Communication Technologies and DA Management

#### Comments



**Ob1:** These are annual activities and are based on documentation provided by developers and the knowledge management unit of the ICTM, and result in a plan (dates, frequencies, responsible individuals) in the case of preventive reviews.

**Ob2:** Procedures are defined based on each element in the inventory.

**Ob3:** Produce incident statistics.

**Ob4:** These requests will be received through process 10.4 Cross-cutting Management.

## Subprocess

### 10.3.3 Telecommunications Management.

<b>Objetive</b>	Ensure that the telecommunications service is operational, readily available, efficient and functional in order to support the voice communication needs of IICA.	
<b>Inputs</b>	<b>Background Information</b>	<b>Reference Materials</b>
	<ul style="list-style-type: none"> <li>Preventive or corrective intervention requirements (defined by the manufacturers), established based on relevant issues identified through failure monitoring or by internal users.</li> </ul>	<ul style="list-style-type: none"> <li>Logical network schemes and telecommunication components.</li> <li>Documentation generated by suppliers.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Service Catalogue.</li> <li>Reference documents defined by the subprocess support systems</li> </ul>
<b>Products</b>	Available telecommunication service with the functionality required to meet institutional demands.	

### 10.3 Infrastructure operations.

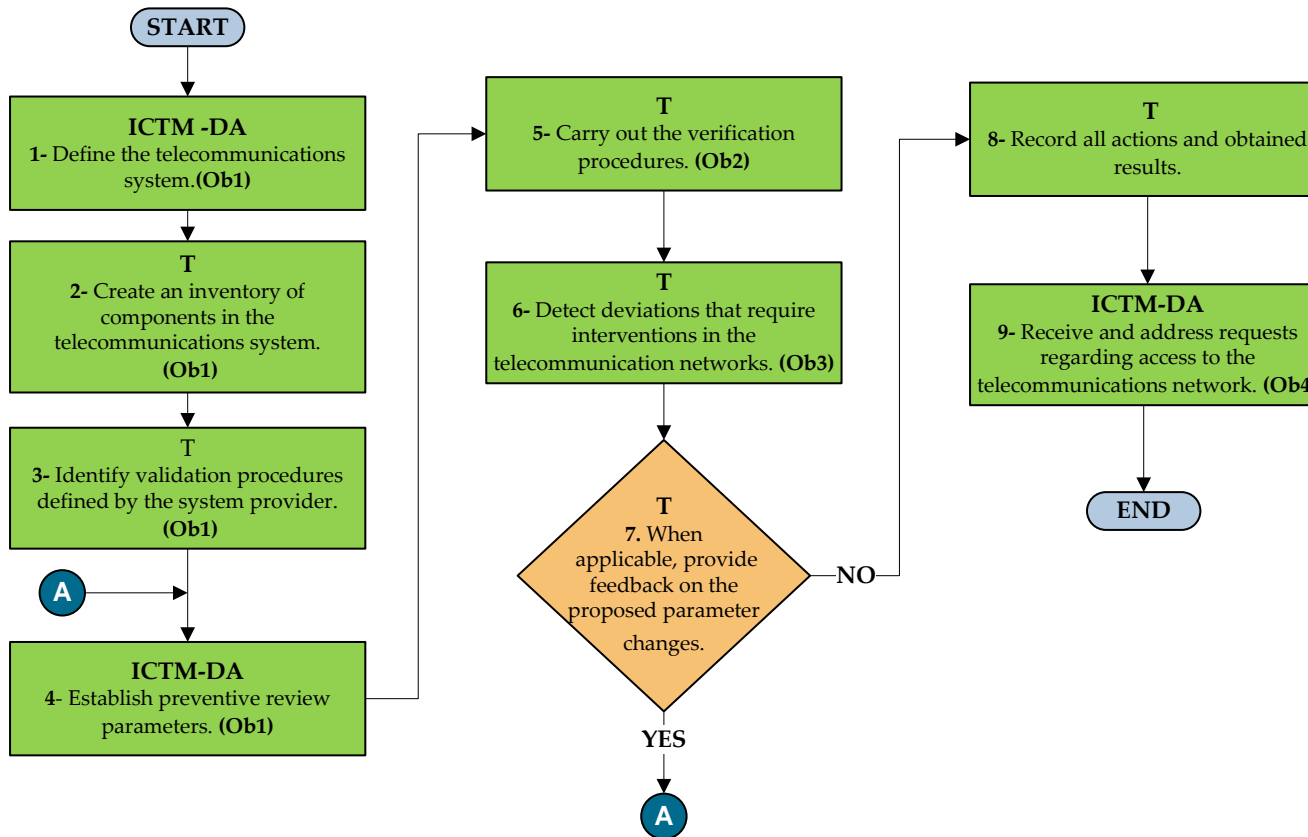
#### 10.3.3 Telecommunications Management.

INVOLVED

Corporate Services Director ( CSD )  
Information and Communication Technologies and DA Manager ( ICTM-DA )  
ICT Technicians ( T )

#### Information and Communication Technologies and DA Management.

#### Comments



**Ob1:** These are annual activities and are based on documentation provided by developers and the knowledge management unit of the ICTM-DA, and result in a plan (dates, frequencies, responsible individuals) in the case of preventive reviews.

**Ob2:** Procedures are defined based on each element in the inventory.

**Ob3:** Coordinated with the system provider.

**Ob4:** These requests will be received following process 10.4 Cross-cutting Management

## Subprocess

### 10.3.4 Maintenance of Technology Infrastructure.

<b>Objetive</b>	Ensure that IICA's technology infrastructure is available and operates as required, through preventive or corrective interventions originated at administrative levels or based on requests submitted by users.	
<b>Inputs</b>	<b>Background Information</b>	<b>Reference Materials</b>
	<ul style="list-style-type: none"> <li>Incidents detected in the Cross-cutting Management process regarding technology infrastructure (levels 2 and 3).</li> <li>Hardware and software inventory.</li> </ul>	<ul style="list-style-type: none"> <li>Annual Infrastructure Plan.</li> <li>Documentation generated by suppliers.</li> <li>Information and Communication Technology Policy.</li> <li>Procedures Manual on Information and Communication Technologies at IICA.</li> <li>Procedures Manual for the Procurement of Goods and Services.</li> <li>Service Catalogue.</li> <li>Reference documents defined by the subprocess support systems.</li> </ul>
<b>Products</b>	Infrastructure and networks adequately maintained and operational.	

**10.3 Infrastructure operations.**

**10.3.4 Maintenance of Technology Infrastructure**

<b>INVOLVED</b>	<p>Corporate Services Director ( CSD ) Information and Communication Technologies and DA Manager ( ICTM-DA ) ICT Technicians ( T )</p>
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Information and Communication Technologies and DA Management	Comments
<pre> graph TD     START([START]) --&gt; T1[T 1- Maintain the hardware and software inventory. (Ob1)]     T1 --&gt; T2[T 2- Define preventive review parameters and corrective actions for each element in the inventory. (Ob1)]     T2 --&gt; D3{T 3. Determine the type of aintenance. (Ob1)}     D3 -- CORRECTIVE MAINTENANCE --&gt; C1{1}     D3 -- PREVENTIVE MAINTENANCE --&gt; C2{2}     C3{3} --&gt; T1     </pre>	<p><b>Ob1:</b> These are annual activities and are based on documentation provided by developers and the knowledge management unit of the ICTM-DA, and result in a plan (dates, frequencies, responsible individuals) in the case of preventive reviews.</p>

Information and Communication Technologies and DA Management	Comments
<pre> graph TD     C1{1} --&gt; T4[T 4- Perform corrective maintenance.]     T4 --&gt; T41[T 4.1 Receive requirements and incidents from process 10.4 Cross-cutting Management. (Ob2)]     T41 --&gt; T42[T 4.2 Address requirements according to corrective action parameters and notify the results through process 10.4 Cross-cutting Management. (Ob3).]     C2{2} --&gt; T5[T 5- Perform preventive maintenance.]     T5 --&gt; ICTM51[ICTM-DA 5.1 Schedule preventive interventions.]     ICTM51 --&gt; T52[T 5.2 Intervene according to the program and the preventive action parameters. (Ob4).]     T52 --&gt; ICTM6[ICTM-DA 6- Record all actions and results obtained. (Ob5)]     ICTM6 --&gt; D7{T 7. When applicable, provide feedback on the proposed parameter changes.}     D7 -- YES --&gt; C3{3}     D7 -- NO --&gt; END([END])     T42 --&gt; END     C3 --&gt; END     </pre>	<p><b>Ob2:</b> Three levels of responsibility are defined: 1st level: end user resolves the issue with the support of ICTM. 2nd level: ICTM-DA solves the issue. 3rd level: an external vendor resolves the issue.</p> <p><b>Ob3:</b> Depending on the incident level, external resources may be needed. The Change Control shall be managed through the Cross-cutting Management Process.</p> <p><b>Ob4:</b> Depending on the incident level, external resources may be needed.</p> <p><b>Ob5:</b> Produce incident statistics.</p>



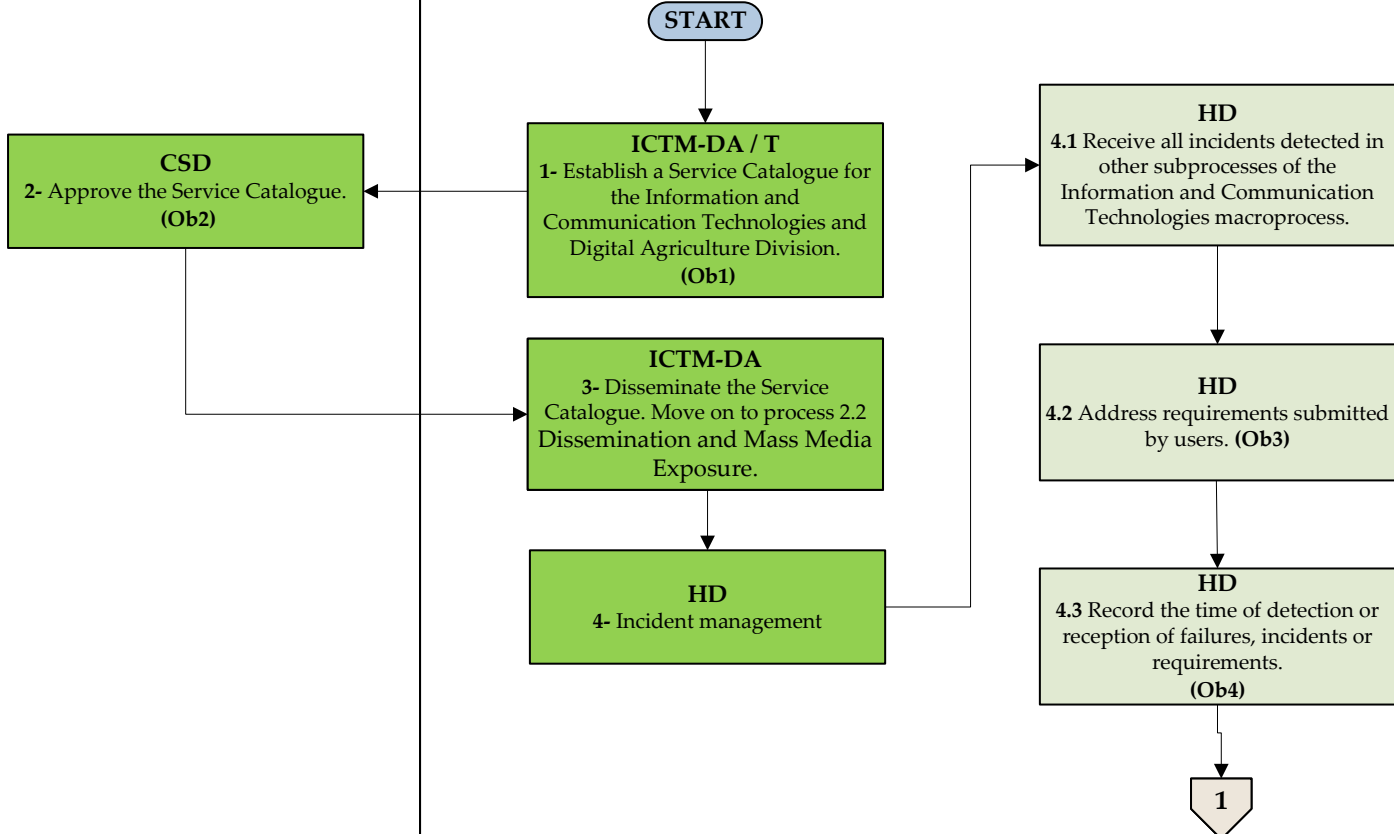
**Process**

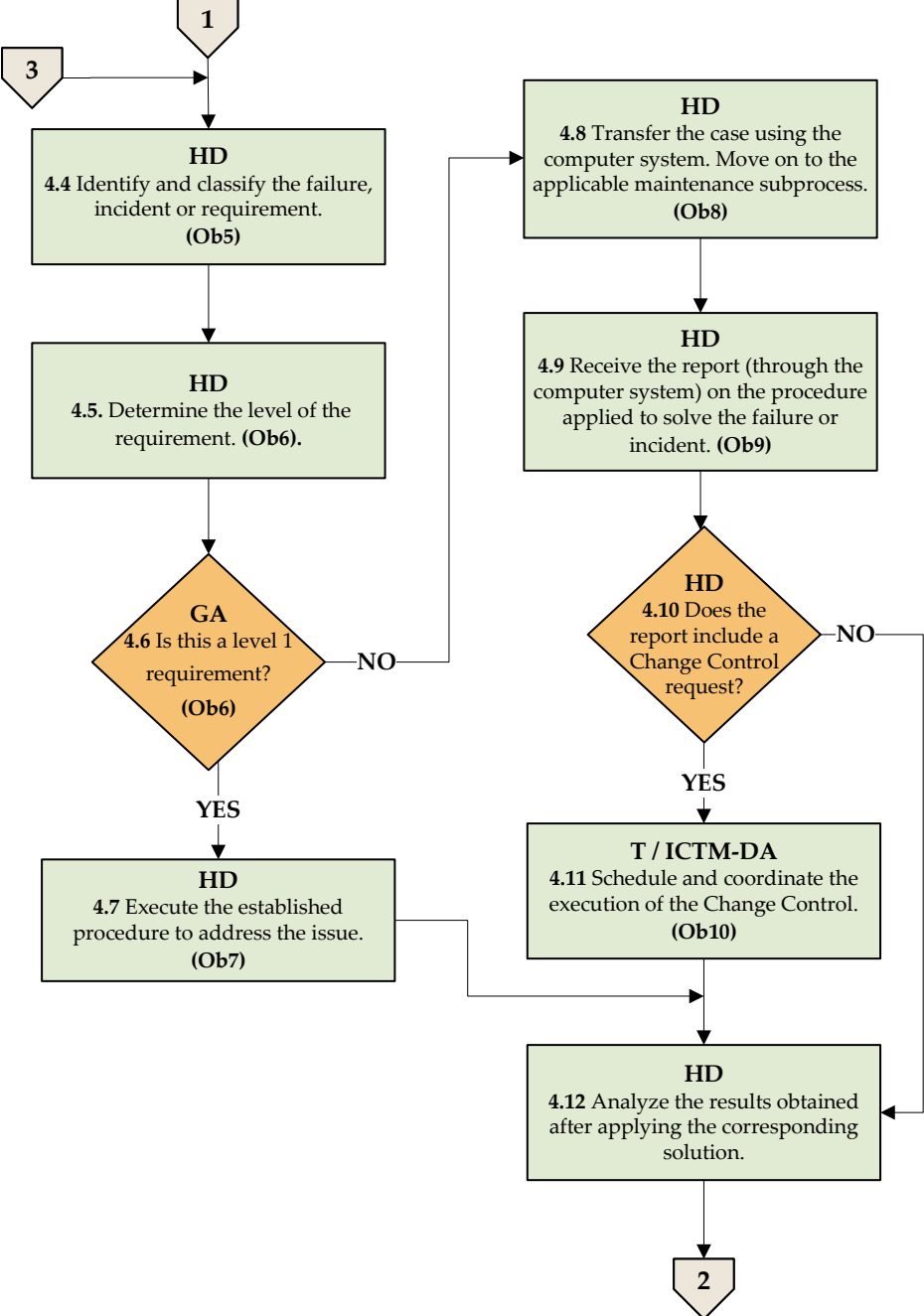
**10.4 Cross-cutting Management.**

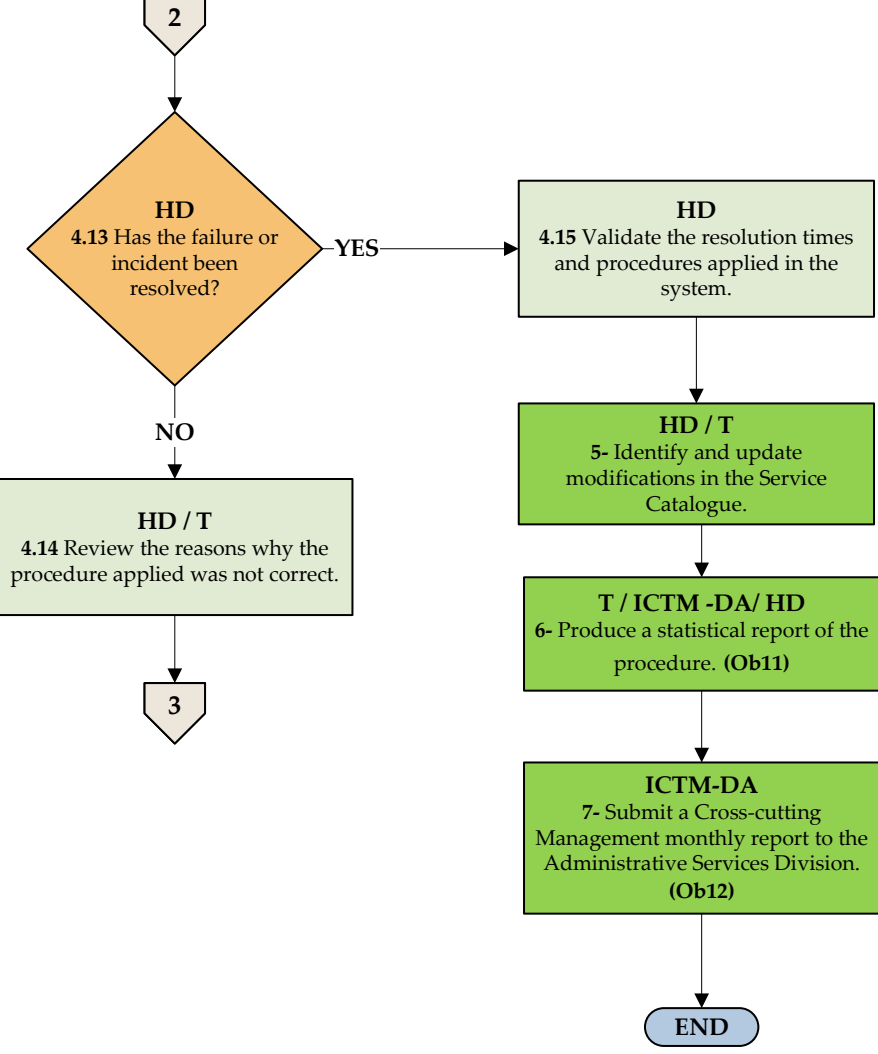
<b>Objective</b>	Ensure the continuity of macroprocesses and the promotion of continuous improvement initiatives through the effective management of relevant requirements, failure and/or incident resolution.
<b>Scope</b>	Hemispheric level. Technical-regulatory actions at a hemispheric level. Centralization at strategic levels and at Headquarters. Partial decentralization at tactical and operational levels, per region and country.
<b>Specific Policies and Rules</b>	<ol style="list-style-type: none"> <li>1. The ICTAAP shall set forth the guidelines for programmed interventions and infrastructure availability goals.</li> <li>2. This process includes corrective action requirements generated through operative processes or by the end user.</li> <li>3. The Service Catalogue shall determine the scope of ICT management. Any request unrelated to this document shall be deemed unacceptable for this process.</li> <li>4. The Service Catalogue must be updated each time new incidents are detected or corrective measures are applied.</li> <li>5. The Service Catalogue must be accessible (controlled inquiries) for all IICA staff members.</li> <li>6. All of the addressed incidents and requirements shall be reviewed on a monthly basis to identify issues that require a large-scale intervention or modifications in the technology infrastructure, which in turn require improvement or innovation projects.</li> <li>7. The need for support provided by external resources shall be considered. Contracting times must also be taken into account to guarantee the continuity of institutional operations.</li> </ol>
<b>Information Systems</b>	
<b>Indicators</b>	<ul style="list-style-type: none"> <li>• Number of level 1 incidents solved in a timely manner in relation to the total number of incidents received at said levels.</li> <li>• Number of incidents addressed in a timely manner in relation to the total number of incidents received.</li> <li>• New recorded incidents.</li> <li>• Degree of user satisfaction.</li> </ul>

	<b>Background Information</b>	<b>Reference Materials</b>
<b>Inputs</b>	<ul style="list-style-type: none"> <li>• Detection of failures or incidents identified in other subprocesses of the Information and Communication Technologies macroprocess.</li> <li>• Requirements to address failures or incidents received by users.</li> <li>• Service Catalogue (valid).</li> </ul>	<ul style="list-style-type: none"> <li>• Reference documents defined by the subprocess support systems.</li> <li>• Information and Communication Technology Policy.</li> <li>• Procedures Manual on Information and Communication Technologies at IICA.</li> </ul>
<b>Products</b>	Service Catalogue (updated). End-user requirements adequately addressed. Monitoring and control of infrastructure and network functionality at an end-user level.	

**10.4 Cross-cutting Management.**

<b>INVOLVED</b>	<p>Corporate Services Director ( CSD ) Information and Communication Technologies and DA Manager ( ICTM-DA ) ICT Technicians ( T ) Help Desk ( HD )</p>	
<b>Corporate Services Management</b>	<b>Information and Communication Technologies and DA Management</b>	<b>Comments</b>
	 <pre> graph TD     START([START]) --&gt; B1[ICTM-DA / T 1- Establish a Service Catalogue for the Information and Communication Technologies and Digital Agriculture Division. (Ob1)]     B1 --&gt; B2[ICTM-DA 3- Disseminate the Service Catalogue. Move on to process 2.2 Dissemination and Mass Media Exposure.]     B2 --&gt; B3[HD 4- Incident management]     B3 --&gt; B4[HD 4.1 Receive all incidents detected in other subprocesses of the Information and Communication Technologies macroprocess.]     B4 --&gt; B5[HD 4.2 Address requirements submitted by users. (Ob3)]     B5 --&gt; B6[HD 4.3 Record the time of detection or reception of failures, incidents or requirements. (Ob4)]     B6 --&gt; P1{1}     B1 --&gt; B7[CSD 2- Approve the Service Catalogue. (Ob2)]     B7 --&gt; B2     </pre>	<p><b>Ob1:</b> The Service Catalogue must include an inventory of products and components managed by ICT and the services originating from them, along with resolution procedures, responsibility levels, individuals in charge and time frames for resolution (SLAs) for each defined service. This document must be reviewed and updated on an annual basis or each time a new application, hardware component, etc., is installed.</p> <p><b>Ob2:</b> The Service Catalogue may have a local, regional or hemispheric level depending on the defined scope.</p> <p><b>Ob3:</b> Received through a focus group or a help desk system.</p> <p><b>Ob4:</b> The date and time are recorded to establish resolution times (compliance with SLAs).</p>

<b>Corporate Services Management</b>	<b>Information and Communication Technologies and DA Management</b>	<b>Comments</b>
	 <pre> graph TD     P1{1} --&gt; B8[HD 4.4 Identify and classify the failure, incident or requirement. (Ob5)]     B8 --&gt; B9[HD 4.5 Determine the level of the requirement. (Ob6).]     B9 --&gt; D1{4.6 Is this a level 1 requirement? (Ob6)}     D1 -- YES --&gt; B10[HD 4.7 Execute the established procedure to address the issue. (Ob7)]     D1 -- NO --&gt; B11[HD 4.8 Transfer the case using the computer system. Move on to the applicable maintenance subprocess. (Ob8)]     B11 --&gt; B12[HD 4.9 Receive the report (through the computer system) on the procedure applied to solve the failure or incident. (Ob9)]     B12 --&gt; D2{4.10 Does the report include a Change Control request?}     D2 -- YES --&gt; B13[T / ICTM-DA 4.11 Schedule and coordinate the execution of the Change Control. (Ob10)]     D2 -- NO --&gt; B14[HD 4.12 Analyze the results obtained after applying the corresponding solution.]     B13 --&gt; B14     B14 --&gt; P2{2}     B10 --&gt; P3{3}     P3 --&gt; B8     </pre>	<p><b>Ob5:</b> As defined in the Service Catalogue.</p> <p><b>Ob6:</b> To determine these categories, three levels of responsibility are defined: 1st level: end user resolves the issue with the support of ICTM. 2nd level: ICTM solves the issue. 3rd level: an external vendor resolves the issue.</p> <p><b>Ob7:</b> As defined in the Service Catalogue.</p> <p><b>Ob8:</b> The individual responsible for the corresponding maintenance subprocess shall define, based on the level of the requirement, whether an ICT Technician (level 2) or an external vendor (level 3) shall be in charge of resolving the issue.</p> <p><b>Ob9:</b> The applied procedure and obtained results must be notified.</p> <p><b>Ob10:</b> The change control may need to be communicated if said change is significantly affect end users</p>

<b>Corporate Services Management</b>	<b>Information and Communication Technologies and DA Management</b>	<b>Comments</b>
	 <pre> graph TD     P2{2} --&gt; D3{4.13 Has the failure or incident been resolved?}     D3 -- YES --&gt; B15[HD 4.15 Validate the resolution times and procedures applied in the system.]     D3 -- NO --&gt; B16[HD / T 4.14 Review the reasons why the procedure applied was not correct.]     B15 --&gt; B17[HD / T 5- Identify and update modifications in the Service Catalogue.]     B17 --&gt; B18[T / ICTM -DA/ HD 6- Produce a statistical report of the procedure. (Ob11)]     B18 --&gt; B19[ICTM-DA 7- Submit a Cross-cutting Management monthly report to the Administrative Services Division. (Ob12)]     B19 --&gt; END([END])     B16 --&gt; P4{3}     </pre>	<p><b>Ob11:</b> This report must include relevant requirements, detected failures or incidents and their respective resolution times.</p> <p><b>Ob12:</b> This procedure may result in strategic, tactical or operational decisions, or requirements to develop ICT improvement or updating projects.</p>