Tool for the conversion of Excel inventories into XML: XlsXmlConverter

Management Summary
Document describing the tool to convert Excel inventories into XML observation for FIRMS.

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Revision History		
Date	**Author**	**Summary**

Summary

1 Introduction

1.1 Purpose of this document

This document is a guideline to explain the tool **XlsXmlConverter** that allows to convert automatically into XML files the Excel inventories, according to FIRMS XML schema.

1.2 Target audience

Professionals using the inventories

1.3 Scope

How to use the services and methods provided by this application

1.4 Assumptions

Persons should know what a macro VBA is.

1.5 Technical needs

PC with Excel.

2 Inventories

Information about fisheries, marine resources are stored in the context of FIRMS into Excel files. Each excel file contains information associated to one specific partner. These files are based on the template designed by the FIGIS team (more in the Fishcode-STF website: http://www.fao.org/figis/servlet/static?xml=STF_proj.xml&dom=org&xp_nav=4,2) and are divided into 3 different sheets.

The first one contains Fisheries information provided by partner stored in a specific format with one row corresponding to one fishery.
The fisheries sheets don't contain complete set of data for all partners.

The second one contains Marine resources provided by partner stored in a specific format with one row corresponding to one marine resource.
The marine resources sheets are almost completed for all partners.

The last sheet named "References" contains all the information for the sources and bibliography listed using codes in the marine resource sheet in the corresponding columns.

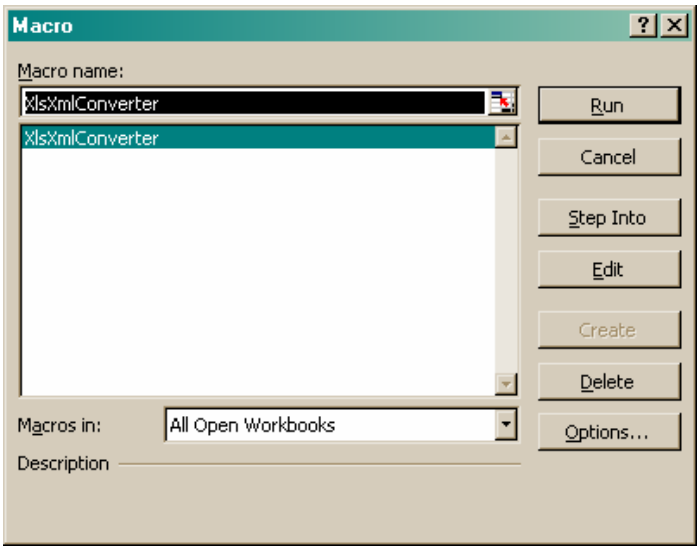
The tool is based for the moment only on the conversion of the marine resources inventory linked with the references sheet.

3 Excel-XML conversion tool

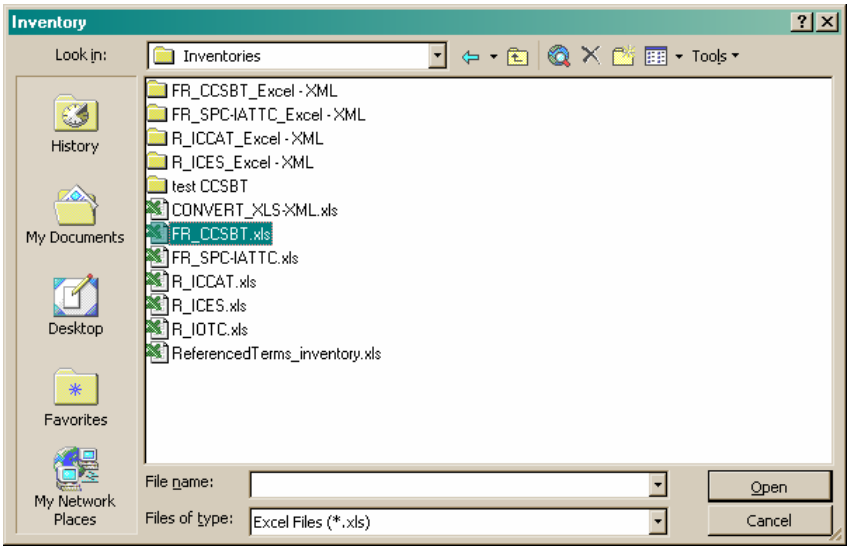
The tool is a VBA macro into an Excel file. By opening this file, an interface invites the user to choose an inventory using the explorer. The inventory to be valid must contains at least the 2 sheets “Marine resources” and “References”. If not, an error message will indicate to the user to verify the selected inventory.
The tool extracts automatically data from the Excel structure and put them into XML files compliant with the FIRMS schema:
http://figis01/Dtd/Beta/3.5/firms_schema/editor/aqres_editor.xsd .

3.1 Technique and prerequisites

To use this tool, you just have to double-click on the Excel file named “XlsXmlConverter.xls”. Then you have to go to *Tools/Macro/Macros* and run “XlsXmlConverter”.



An open-file interface is running directly, you just have to specify an Excel file containing inventory data structured according to the template defined above.



To validate the references terms listed in the inventory and verify that the georeferencing system stored in the inventory is compliant with the CodeSystem attribute of a WaterAreaRef ForeignID element in XML, the tool uses an other Excel file containing all valid terms. This file named “ReferencedTerms_inventory.xls” must be in the same folder as “XlsXmlConverter.xls” to be used by the tool. The lists of terms in this file are in the annex 2.

The tool uses the References sheet to extract bibliography and sources description listed with codes in the Marine resources sheet into the resulting XML.

The conversion tool creates a folder with the same name as the inventory file and puts in it all the XML created from the inventory data.

2 types of XML will be formed depending on the content of the inventory.
We will have for each marine resource i) a Reference Observation XML and ii) a secondary observation XML if the information is available (based on data supplied for the FIRMS report to UNGA: State of Marine Resources and Year of observation).
It will be indicated in the inventory by the “reference observation” column. This column allows to specify for each marine resource what will be the resulting XML:

- If **yes**: the references (sources and bibliography) if available in the inventory, are written into the reference observation XML. If UNGA data is available in the inventory for that row, there is also creation of a secondary observation XML.
- If **no**: The line must contain only UNGA data + inventory identifier + FIRMS Title + collectionRef identifier + CoverPageRef identifier. The references (bibliography and sources) if available in the inventory, are written into the secondary observation XML. The corresponding Reference XML observation must already exist.

The naming convention of a Reference Observation XML is: “RefObs_” followed by the value of the inventory identifier. (Example in annex 3: RefObs_005_0001.xml)
The naming convention of a Secondary Observation XML is: “SecObs_” followed by the value of the inventory identifier. (Example in annex 4: SecObs_005_0001.xml)

The correspondence between the structure and the XML is described in annex 1.

3.2 Results

After the conversion of the inventory, an ErrorFile.txt in the result folder lists all the problems and points out what need to be updated in the inventory to obtain valid XML:

- Reference terms not compliant
- Codes for Sources and Bibliography without correspondence in the References sheet in Excel
- Duplication of information in fields that should contain unique value
- Absence of data that are needed to have a valid XML
- Absence of corresponding reference observation XML for a secondary observation XML…

It allows to improve the content of the inventory and to provide valid and complete XML for input to the FIRMS system.
These errors are also written in the XML.
On the other hand, this tool doesn’t verify the code attribute of the ForeignId element (WaterAreaRef, SpeciesRef,FisheryRef) in the XML. It doesn’t check also if the titles are relevant. These controls are part of the following on-line upload step.

4 Developments and evolution of the tool

The tool has been developed to create rapidly and efficiently Reference Observation XML and Secondary observation XML directly from the structured inventories.

This tool could be improved to become a complete application to create all types of XML (fact sheets, observations). In this way, the partners would be able to provide compliant XML directly to the loading system of FIRMS. New Excel structures and inventories should be, in that case, developed to be suited to the new information to store.
We could later, if the need is important, redevelop the tool in Java, for example, in order to have an independent application that could be run without Excel.

5 Annex 1

The following table provides instructions to describe each marine resource inventoried using the EXCEL form **FR_Templates.xls** (sheet **Marine resources**). The schema used to validate the XML is: \\figis01\Dtd\Beta\3.5\firms_schema\ editor/aqres_editor.xsd.
In RED, in the ATTRIBUTE column, it is indicated for which XML, the field is used: Reference for the reference observation XML, UNGA for the secondary observation XML

<table>
<tr><th colspan="3">EXCEL ATTRIBUTE</th><th>XML</th></tr>
<tr><td rowspan="2">MARINE RESOURCE REFERENCE</td><td colspan="2">Inventory identifier
Reference/UNGA</td><td><!--, this value will allow to extract the FIGIS ID using inventory identifier of the inventory Excel file-->
<!--only 1 ID possible-->
<fi:ForeignID CodeSystem="InvID" Code="005:0001"/></td></tr>
<tr><td colspan="2">Parent marine resource</td><td>No correspondence</td></tr>
<tr><td colspan="3">EXPLOITING FISHERIES
Reference</td><td><!—Several exploiting fisheries possible→
<!—1 fi:FisheryRef per exploiting fisheries – must be separated by comma→
<fi:Exploit>
<fi:FisheryRef>
<fi:ForeignID CodeSystem="InvID" Code="Value from Excel"/>
<fi:FisheryRef>
</fi:Exploit></td></tr>
<tr><td rowspan="3">MARINE RESOURCE TITLE</td><td colspan="2">FIRMS Marine Resource Title
Reference</td><td><!--Inventory Excel file: Marine Resource Title\FIGIS Marine Resource Title-->
<!--only 1 FIGIS title possible-->
<fi:AqResIdent>
<dc:Title>Southern Bluefin tuna - Global</dc:Title>
</fi:AqResIdent></td></tr>
<tr><td rowspan="2">Local title</td><td>Title
Reference</td><td><!--Inventory Excel file:Marine Resource Title\Local Title\Language and \Title-->
<!--only 1 local title possible-->
<fi:AqResIdent>
<fi:AdditionalRefData>
<dcterms:Alternative xml:lang="language value from Excel">Title value from Excel</dcterms:Alternative>
</fi:AdditionalRefData>
</fi:AqResIdent></td></tr>
<tr><td>Language
Reference</td><td>“”</td></tr>
<tr><td colspan="3">Stock Structure
Reference</td><td><!--Inventory Excel file:Stock Structure-->
<!--I considered that the S means that the marine resource is a stock but it should be more explicit if S is not automatic for all inventories-->
<fi:AqResStruct BiologicalStock="true"/></td></tr>
<tr><td colspan="3">Management unit
Reference</td><td><!--Inventory Excel file:Management unit (true|false)-->
<fi:Management ManagementUnit="true"/></td></tr>
</table>

<table>
<tr><th colspan="3">ATTRIBUTE</th><th>DESCRIPTION</th></tr>
<tr><td rowspan="5"></td><td rowspan="3">Primary Georeferencing System</td><td>Georeferencing System Name
Reference</td><td rowspan="2"><!—Several area codes possible, 1 WaterAreaRef per Area code→
<fi:AqResIdent>
<fi:WaterAreaList>
<dc:Title>Fishing Area Name</dc:Title>
<fi:WaterAreaRef >
<fi:FigisID/>
<fi:ForeignID CodeSystem="Georeferencing system value from Excel" Code="Area code value from Excel"/>
</fi:WaterAreaRef>
</fi:WaterAreaList>
</fi:AqResIdent></td></tr>
<tr><td>Area Codes in this system
Reference</td></tr>
<tr><td>Fishing Area Name
Reference</td><td>See Above <dc:Title></td></tr>
<tr><td rowspan="3">Other Georeferencing System</td><td>System Name
Reference</td><td rowspan="2">See the primary georeferencing system. Instead using fi:WaterAreaList it will be into fi:WaterAreaOverview:
Example:

<fi:WaterAreaOverview>
<fi:WaterAreaRef>
<fi:FigisID/>
<fi:ForeignID CodeSystem="Fao_area" Code="Fao_area value from Excel"/>
</fi:WaterAreaRef>
</fi:WaterAreaOverview ></td></tr>
<tr><td>Area Codes in this system
Reference</td></tr>
<tr><td>Fishing Area Name
Reference</td><td><fi:WaterAreaOverview>
<dc:Title>Area Name from Excel file</dc:Title>
</fi:WaterAreaOverview ></td></tr>
<tr><td colspan="2">Spatial scale
Reference</td><td><!---Inventory Excel file:Area of dist.\Spatial scale
<!--only 1 Spatial Scale possible-->
<fi:WaterAreaOverview >
<fi:SpatialScale Value=” Regional”/>
</fi:WaterAreaOverview></td></tr>
<tr><td colspan="2">Juridictional distribution
Reference</td><td><!---Inventory Excel file:Area of dist.\Juridictional distribution-->
<!--only 1 juridictional distribution possible-->
<fi:GeoDist>
<fi:JurisdictionalDistribution Value=”highly migratory”/>
</fi:GeoDist></td></tr>
</table>

ATTRIBUTE		DESCRIPTION
SPECIES	Order Reference	<!--if the column Genus and Species and Family are empty, the SpeciesRef tag will contain Order information:--> <!--Inventory Excel file:Species\order.--> <!-- several order possible : 1 SpeciesRef tag per order listed in this cell - must be separated by comma--> <fi:AqResIdent> <fi:SpeciesList> <fi:SpeciesRef Taxonomy="Order"> <fi:ForeignID CodeSystem="Scientific_name" Code="Order value in the Excel file"/> </fi:SpeciesRef> </fi:SpeciesList> </fi:AqResIdent>
	Family Reference	<!--if the column Genus and Species is empty, the SpeciesRef tag will contain family information:--> <!--Inventory Excel file:Species\Family--> <!-- several family possible :1 SpeciesRef tag per family listed in this cell - must be separated by comma--> <fi:AqResIdent> <fi:SpeciesList> <fi:SpeciesRef Taxonomy="Family"> <fi:ForeignID CodeSystem="Scientific_name" Code="Scombridae"/> </fi:SpeciesRef> </fi:SpeciesList> </fi:AqResIdent>
	Genus and species Reference	<!--if the column Genus and Species is not empty--> <!--Inventory Excel file:Species\Genus and Species.--> <!-- several species possible :1 SpeciesRef tag per specie listed in this cell - must be separated by comma--> <fi:AqResIdent> <fi:SpeciesList> <fi:SpeciesRef Taxonomy="Species"> <fi:ForeignID CodeSystem="Scientific_name" Code="Thunnus maccoyi"/> </fi:SpeciesRef> </fi:SpeciesList> </fi:AqResIdent>
	Environmental group Reference	<!--Inventory Excel file:Species\Environmental Group--> <!-- Several environnemntal group possibles, 1 fi:EnvironGroup per environmental group - must be separated by comma--> <fi:HabitatBio> <fi:EnvironGroup Value=''Large pelagic''/> </fi:HabitatBio>

ATTRIBUTE			DESCRIPTION
	Marine habitat	Depth zone Reference	<!--Inventory Excel file:Species\Marine Habitat\Depth Zone--> <!-- in this inventory, depth zone appears as seawater environment: to be updated in Excel--> <!--several depth zone possibles: 1 fi:WaterEnv per zone - must be separated by comma--> <fi:HabitatBio> <fi:WaterEnv Value="Neritic - Shelf"/> <fi:WaterEnv Value="Oceanic - Surface water offshore (high sea"/> <fi:HabitatBio>
		Bottom type Reference	<!--Inventory Excel file:Species\Marine Habitat\Bottom type--> <!--several bottom type possibles: 1 fi:BottomEnv per type - must be separated by comma--> <fi:HabitatBio> <fi:BottomEnv Value="Bottom type value from Excel"/> </fi:HabitatBio>
		Climatic zone Reference	<!--Inventory Excel file:Species\Marine Habitat\Climatic Zone--> <!--several climatic zone possible: 1 fi:ClimateEnv per zone - must be separated by comma--> <fi:HabitatBio> <fi:ClimateEnv Value="climatic zone value from Excel"/> <fi:HabitatBio>
STATE OF THE MARINE RESOURCES	Exploitation status UNGA		<!--Inventory Excel file:State of Marine resources (UNGA info)\Exploitation Status--> <!—Several exploitation status possible:1 ExploitStatus tag per status - must be separated by comma--> <fi:AqResStatusTrends> <fi:ExploitStatus Value="Fully exploited"/> </fi:AqResStatusTrends>
	Status trends description UNGA		<!--Inventory Excel file:State of Marine resources (UNGA info)\Status trends description--> <fi:AqResStatusTrends> <fi:Text><![CDATA[Status Stock Notes: (1) At current catch levels, the stock being …would be required to achieve that goal]]></fi:Text> </fi:AqResStatusTrends>

ATTRIBUTE		DESCRIPTION
REFERENCES	**Bibliography** **Reference/UNGA if available**	<!--Inventory Excel file: References (UNGA info)\Bibliography --> <!-- the code correspond to a reference in the References spreadsheet--> <!--several bibliography possible, 1 BiblioEntry tag per bibliography - must be separated by comma--> <fi:Bibliography> <fi:BiblioEntry> <dc:Title>Report of the Eight Meeting of the Extended Scientific Committee. (1-4 September 2003. Christchurch, New Zealand)</dc:Title> <ags:CreatorCorporate>Extended Scientific Committee (CCSBT)</ags:CreatorCorporate> <dcterms:Created>2003-01-01</dcterms:Created> <fi:Series/> <dc:Publisher>CCSBT</dc:Publisher> </fi:BiblioEntry> </fi: Bibliography>
	Source **Reference/UNGA if available**	<!-- the code correspond to a reference in the References spreadsheet--> <!--several sources references possible, 1 BiblioEntry tag per sources references - must be separated by comma--> <fi:Sources> <fi:BiblioEntry> <dc:Title>Report of the Eight Meeting of the Extended Scientific Committee. (1-4 September 2003. Christchurch, New Zealand)</dc:Title> <ags:CreatorCorporate>Extended Scientific Committee (CCSBT)</ags:CreatorCorporate> <dcterms:Created>2003-01-01</dcterms:Created> <fi:Series/> <dc:Publisher>CCSBT</dc:Publisher> </fi:BiblioEntry> </fi: Sources>
	Year of observation **UNGA**	<!--Inventory Excel file: References (UNGA info)\Year of Observation--><!--only 1 year of reference possible--> <fi:AqResIdent> <fi:ReportingYear>2003</fi:ReportingYear> </fi:AqResIdent>
Ownership	**Inventoried by** **Reference**	<!--only 1 personal creator possible--> <fi:CoverPage> <ags:CreatorPersonal>Name</ags:CreatorPersonal> </fi:CoverPage>
	Collection identifier **Reference/UNGA**	<!--only 1 collection identifier possible--> <fi:CollectionRef> <fi:FigisID>1</fi:FigisID> </fi:CollectionRef >
	Cover page identifier **Reference/UNGA**	<!--only 1 CoverPage identifier possible--> <fi:CorporateCoverPage> <fi:FigisID>1</fi:FigisID> </fi:CorporateCoverPage>
Reference observation		If **yes**: the references (sources and biblio) if available, are written into the reference observation XML. If UNGA infos available for that row, creation of a secondary observation XML. If **no**: The line must contain only UNGA infos + inventory identifier + FIRMS Title + collectionRef + CoverPageRef. The references (biblio and sources) if available, are written into the secondary observation XML. The corresponding Reference XML observation must already exist.

6 Annex 2

6.1 Reference terms used in the inventories:

Climatic Zone
Polar
Temperate
Tropical

Bottom Type
seegrass
coral reef
soft bottom
- soft bottom with pebbles
- soft bottom with gravel
- soft bottom, gravel-sandy
- soft bottom, clean sand
- soft bottom, muddy or muddy-sand
- soft bottom with some turbidity

hard bottom
- hard rocky bottom
- hard bottom with clear water

Depth Zone
Littoral
- Littoral - Estuaries Lagoons mangrove, brackishwater
- Littoral - Intertidal
- Littoral - Close to the shore, littoral (0 m - 20 m)
- Littoral - Shallow waters, inshore waters (0 m - 50 m)

Neritic
- Neritic - Shelf
- Neritic - Shelf - Upper shelf (up to 100 m)
- Neritic - Shelf - Deep shelf (100 m - 200 m)
- Neritic - Edge of shelf
- Neritic - Midwater offshore

Oceanic
- Oceanic - Upper slope (200 m - 500 m)
- Oceanic - Deep slope (500 m -1000 m)
- Oceanic - Deep-sea
- Oceanic - Abyssal plain
- Oceanic - Surface water offshore (high sea)

Environmental Group
Demersal
Demersal fish
Demersal invertebrate
Pelagic
Pelagic fish
Pelagic invertebrate

Spatial Scale
Global
Local
National
Regional
Sub-Regional

Juridictional Distribution
Not applicable
Shared
Shared - Transboundary
Shared - Straddling out
    Demersal - Straddling out
    Pelagic - Straddling out
Shared - Highly migratory
    Highly migratory Trans-oceanic
    Highly migratory - Straddling
Shared - High seas
    High Seas - Straddling in
    Purely High Seas

Status of exploitation
Condition of equilibrium
Depleted
Exhausted
Fully exploited
In recuperation
Moderately exploited
No specific assessment
Over exploited
Uncertain
Under extreme stress
Under exploited
Unexploited

6.2 CodeSystem values for WaterAreaRef element in XML

CodeSystem-WaterAreaRef
fao_area
fao_major
fao_sub_area
fao_div
fao_sub_div
fao_sub_unit
spc_iattc
iccat_smu
iccat_smu_alb
iccat_smu_bet
iccat_smu_bft
iccat_smu_sai
iccat_smu_skj
iccat_smu_swo
iccat_smu_yft
iccat_smu_bum
iccat_smu_whm
iccat_smu_smt
gfcm_sub_area
iccat_comp
iattc_comp
cecaf_comp
gfcm_comp
eez
lme
tuna_pac_rep
tuna_pac_ew_rep
tuna_pac_ns_rep
tuna_pac_maj_rep

7 Annex 3

Reference Observation XML: RefObs_005_0001.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<fi:FIGISDoc xmlns:fi="http://www.fao.org/fi/figis/devcon/" xmlns:ags="http://www.purl.org/agmes/1.1/"
xmlns:aida="http://www.idmlinitiative.org/resources/dtds/AIDA22.xsd" xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:dcterms="http://purl.org/dc/terms/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.fao.org/fi/figis/devcon/ http://figis01/Dtd/Beta/3.5/firms_schema/editor/aqres_editor.xsd">
    <fi:DataEntry>
        <fi:Editor/>
    </fi:DataEntry>
    <fi:ObjectSource>
        <fi:Owner>
            <fi:CollectionRef>
                <fi:FigisID>1</fi:FigisID>
            </fi:CollectionRef>
        </fi:Owner>
        <fi:CorporateCoverPage>
            <fi:FigisID>11</fi:FigisID>
        </fi:CorporateCoverPage>
    </fi:ObjectSource>
    <fi:AqRes>
        <fi:AqResIdent>
            <dc:Title>Southern Bluefin tuna - Global</dc:Title>
            <fi:SpeciesList>
                <fi:SpeciesRef Taxonomy="Species">
                    <fi:ForeignID CodeSystem="Scientific_name" Code="Thunnus maccoyii"/>
                </fi:SpeciesRef>
            </fi:SpeciesList>
            <fi:WaterAreaList>
                <dc:Title>Southern hemisphere</dc:Title>
                <fi:WaterAreaRef>
                    <fi:ForeignID CodeSystem="fao_area" Code="81"/>
                </fi:WaterAreaRef>
                <fi:WaterAreaRef>
                    <fi:ForeignID CodeSystem="fao_area" Code="51.6"/>
                </fi:WaterAreaRef>
            </fi:WaterAreaList>
            <fi:ReportingYear>0000R</fi:ReportingYear>
            <fi:ForeignID CodeSystem="InvID" Code="005:0001"/>
        </fi:AqResIdent>
        <fi:HabitatBio>
            <fi:WaterEnv Value="Neritic - Shelf"/>
            <fi:WaterEnv Value="Oceanic - Surface water offshore (high sea)"/>
            <fi:EnvironGroup Value="Pelagic fish"/>
        </fi:HabitatBio>
        <fi:GeoDist>
            <fi:JurisdictionalDistribution Value="Shared - Highly migratory"/>
        </fi:GeoDist>
        <fi:WaterAreaOverview>
            <fi:SpatialScale Value="Global"/>
        </fi:WaterAreaOverview>
        <fi:AqResStruct BiologicalStock="true"/>
        <fi:Exploit>
            <fi:FisheryRef>
                <fi:ForeignID CodeSystem="InvID" Code="CCSBT01"/>
            </fi:FisheryRef>
        </fi:Exploit>
        <fi:Management ManagementUnit="true"/>
        <fi:Bibliography>
            <fi:BiblioEntry>
                <dc:Title>Report of the Eight Meeting of the Extended Scientific Committee. (1-4 September 2003.
Christchurch, New Zealand)</dc:Title>
                <ags:CreatorCorporate>Extended Scientific Committee (CCSBT)</ags:CreatorCorporate>
                <dcterms:Created>2003-01-01</dcterms:Created>
                <fi:Series/>
                <dc:Publisher>CCSBT</dc:Publisher>
            </fi:BiblioEntry>
        </fi:Bibliography>
    </fi:AqRes>
</fi:FIGISDoc>
```

8 Annex 4

Secondary Observation XML: SecObs_005_0001.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<fi:FIGISDoc xmlns:fi="http://www.fao.org/fi/figis/devcon/" xmlns:ags="http://www.purl.org/agmes/1.1/"
xmlns:aida="http://www.idmlinitiative.org/resources/dtds/AIDA22.xsd" xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:dcterms="http://purl.org/dc/terms/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.fao.org/fi/figis/devcon/ http://figis01/Dtd/Beta/3.5/firms_schema/editor/aqres_editor.xsd">
    <fi:DataEntry>
        <fi:Editor/>
    </fi:DataEntry>
    <fi:ObjectSource>
        <fi:Owner>
            <fi:CollectionRef>
                <fi:FigisID>1</fi:FigisID>
            </fi:CollectionRef>
        </fi:Owner>
        <fi:CorporateCoverPage>
            <fi:FigisID>1</fi:FigisID>
        </fi:CorporateCoverPage>
    </fi:ObjectSource>
    <fi:AqRes>
        <fi:AqResIdent>
            <dc:Title>Southern Bluefin tuna - Global</dc:Title>
            <fi:SpeciesList>
                <fi:SpeciesRef Taxonomy="Order">
                    <fi:ForeignID CodeSystem="Scientific_name" Code="SCOMBROIDEI"/>
                </fi:SpeciesRef>
            </fi:SpeciesList>
            <fi:WaterAreaList>
                <dc:Title/>
            </fi:WaterAreaList>
            <fi:ReportingYear>2003</fi:ReportingYear>
            <fi:ForeignID CodeSystem="InvID" Code="005:0001"/>
        </fi:AqResIdent>
        <fi:AqResStatusTrends>
            <fi:ExploitStatus Value="Fully exploited"/>
            <fi:Text><![CDATA[Status Stock Notes: (1) At current catch levels, the probability of the SBT spawning stock being
larger in 2020 than it is today is about 50%, with an equal probability the stock will be smaller in 2020. (2) At current catch levels
there is little chance that the SBT spawning stock will be rebuilt to the 1980 levels by 2020, and substantial quota reductions
would be required to achieve that goal.]]></fi:Text>
        </fi:AqResStatusTrends>
    </fi:AqRes>
</fi:FIGISDoc>
```