



CCSBT-CC/1810/22

## **Proposal to Upgrade CCSBT's Databases and Develop On-line Data Submission/Data Access Facilities for Members**

### **1. Introduction**

The 2016 report from the Secretariat noted that an upgrade to its databases had become necessary. Further, in its report to the Extended Commission in October 2017 (paper CCSBT-EC/1710/04), the Secretariat advised that it was planning to use the Pacific Community's (SPC's) TUFMAN 2 software as the foundation for the Secretariat's new databases, and to implement an upgrade incrementally over the next few years.

As well as providing a much-needed upgrade, the TUFMAN 2 software has the added benefit that it will support the development of online data systems, including an electronic CDS (eCDS) if required.

This paper provides:

- A brief evaluation of the TUFMAN 2 software; and
- A proposal for developing on-line data submission/data access tools for CCSBT Members based on the TUFMAN 2 software.

The Compliance Committee is invited to consider the proposal and recommend which aspects of the project it would like to proceed with.

### **2. Evaluation of the TUFMAN 2 Software**

#### *TUFMAN 2 Software Evaluation and Testing*

The SPC Secretariat agreed to share its TUFMAN 2 database software with the CCSBT Secretariat initially for evaluation purposes and then also for subsequent use. The CCSBT Secretariat first received a copy of the TUFMAN 2 software in June 2016. During this initial evaluation period (up until the end of 2017), the SPC Secretariat made a series of modifications to TUFMAN 2 to accommodate the CCSBT Secretariat's development work. These modifications involved splitting the software into two main components: a 'core' component that could be shared with the CCSBT, and a second component consisting of SPC-specific elements that only SPC would utilise. Because the software was constantly being updated during this period, the CCSBT Secretariat was able to make only limited progress with its evaluation work.

#### *TUFMAN 2 Core Software Component*

The TUFMAN 2 'core' software has now been quite stable since early 2018. This stability has given the Secretariat the opportunity to further evaluate it as well as to develop and test some prototype CCSBT-specific components<sup>1</sup>. The results of this work have been very positive, and the CCSBT Secretariat has concluded that the TUFMAN 2 software is highly appropriate for the CCSBT's needs and would serve as a good foundation upon which to add

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<sup>1</sup> These include authorised vessel and transshipment lists, and basic module structures

CCSBT-specific software components. The TUFMAN 2 software also has the advantage that it could support the development of an eCDS in the future if required.

The main relevant features provided by the TUFMAN 2 ‘core’ software are:

- A database for tuna fisheries information;
- Data entry/data quality checking and reporting tools;
- Support for attaching files to data;
- A data repository allowing data to be shared between several organisations if required;
- Charts and mapping capabilities;
- A web-based interface;
- A family of compatible applications including a web-based data query system, and mobile applications that could be used by personnel such as fishers or inspectors if required;
- Secure authentication for users;
- User-level authorisation controls;
- Data sharing and visibility rules;
- Audit logs;
- A notification system including system-generated emails; and
- Flexibility to develop systems in a modular way.

Some example screen-shots from the SPC’s current TUFMAN 2-based system are provided at **Attachment A** for reference.

### **3. Agreement with the SPC**

CCSBT and SPC Secretariats have signed two Letters of Agreement to formalise the TUFMAN 2 software sharing arrangement, the first in June 2016 and then the current five-year agreement in August 2018. The latter is provided at **Attachment B** for Members’ information. The SPC has invested considerable resources into designing and developing the TUFMAN 2 software over the past five years, therefore being able to utilise the ‘core’ software represents significant savings to the CCSBT in terms of both time and expense.

### **4. Proposal for developing On-line Data Submission/Data Access tools for CCSBT Members**

Online data submission, access and reporting tools are already being used successfully in other tuna RFMOs such as by the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the Western and Central Pacific Fisheries Commission (WCPFC). The ICCAT has also implemented an eCDS for Atlantic Bluefin tuna.

For CCSBT, the introduction of online tools would empower Members to submit, view, update and receive information directly and in real-time via an online portal. Such tools would also help to improve the efficiency of the Secretariat’s management of information sets such as monthly catch reports, authorised CDS validators, authorised vessels, and potentially also annual reports and the CDS.

The Secretariat proposes that the following enhancements be made to the CCSBT’s information systems using TUFMAN 2 over the next three years:

- 2019: Implementation of essential prerequisite elements; On-line submission and access to monthly catch reports and authorised validators.

- 2020: On-line submission of authorised vessels (both single and bulk upload); Automated reminder system; Maintenance and bug fixes; Move to cloud-hosting of the database<sup>2</sup>.
- 2021: Maintenance and bug fixes.

A description of these proposed new components is provided at **Attachment C**.

The Secretariat has evaluated its workload and has determined that it would not be able to make the above enhancements to its information systems in a timely manner without the support of a consultant. The estimated costs (AUD \$36,850 in 2019, \$34,650 in 2020 and \$3,300 in 2021) for contracting a consultant to develop these components over a three-year period are provided in **Attachment D**.

It should be noted that the development of the TUFMAN 2 software can proceed in a modular way which means there are many different options available for adding in supplementary elements at any stage during the future. The timing and priority of development of the components is flexible according to Members' priorities and the available budget. However, Component 1 (refer to **Attachments C & D**) is an essential prerequisite to all the other components and so must be completed first.

**Prepared by the Secretariat**

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<sup>2</sup> Although it is possible that this could commence during 2019.

## TUFMAN 2 Example Screenshots *(courtesy of SPC)*

The following screenshots are provided to give Members a visual representation of what online systems based on the TUFMAN 2 framework could look like.

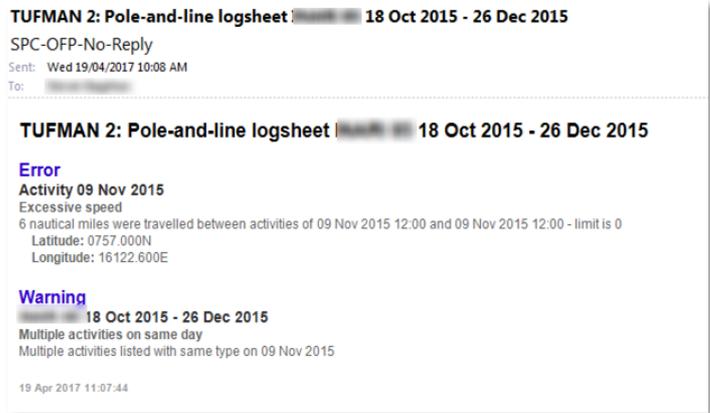
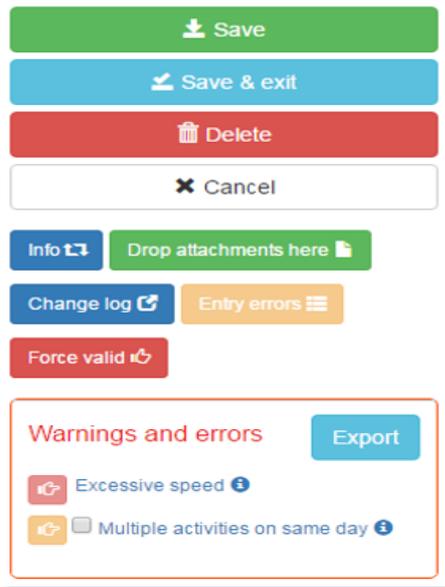
### User Authentication screen:

### User authorisations screen:

Module name	View	Add	Edit	Delete	All
Logs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Logsheets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tasks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RefTables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Data Quality Checking:**

Warnings and errors are displayed on the system as well as email alerts such as in the SPC examples below.



**Audit log of data updates:**

Audit logs of any data updates are produced.

Change log details			
Details			
Revision 93139	made at 10-Nov-2016 23:20 by [redacted]	in OFP - 2 changes (Verified by [redacted] in SB)	
Revision 91079	made at 02-Nov-2016 14:07 by [redacted]	in OFP - 1 change (VMS EEZ data retrieved from FFA)	
Revision 91043	made at 02-Nov-2016 03:47 by [redacted]	in OFP - 33 changes	
Revision 91042	made at 02-Nov-2016 03:46 by [redacted]	in OFP - 2 changes	
Entity	Property	Before	After
Activity 11 Sep 2016	Latitude	0255.000S	0300S
Activity 11 Sep 2016	Longitude	15500.00E	16000E

**General Visual Data Interface:**

TUFMAN 2 provides a rich visual interface which includes visual symbolisation of data quality, and easy access to attachments and linked data such as in the following examples:

TUFMAN 2													
Tasks		Logsheets		Observer		Port		Ref tables		Security		Logs	
		Trip #		Vessel		Gear		Prog...		Departur...		Departure...	
2017													
[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]
[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]
[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]
[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]
[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]
[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]
[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]
[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]	[icon]

Prog.	Observer	Trip #	Vessel	Departure date	Re				
PFOB				15 Sep 2017	05				
LL-1	LL-2/3	GEN-1 (Sightings)	GEN-1 (Transfers)	GEN-2 (Sightings)	GEN-2 (Vess. Interaction) 2016	GEN-3	GEN-6	DCT	Map
Sets									
Ship date	Time	UTC date	UTC time	Time diff.	Set number	# haul logs	# species		
18 Sep 2017	06:14	18 Sep 2017	16:14	-10	1	10	12	More...	LL-2 LL-2 notes LL-4 Baskets
19 Sep 2017	05:25	19 Sep 2017	15:25	-10	2	10	20	More...	LL-2 LL-2 notes LL-4 Baskets
21 Sep 2017	05:56	21 Sep 2017	15:56	-10	3	12	30	More...	LL-2 LL-2 notes LL-4 Baskets
22 Sep 2017	05:30	22 Sep 2017	15:30	-10	4	11	25	More...	LL-2 LL-2 notes LL-4 Baskets
23 Sep 2017	08:01	23 Sep 2017	18:01	-10	5	12	41	More...	LL-2 LL-2 notes LL-4 Baskets

This visual interface includes visibility rules for each Member, and even user, which show/hide modules and features, and filter the data appropriately.



**Letter of Agreement**  
**between**  
**THE PACIFIC COMMUNITY (SPC)**  
**and**  
**THE COMMISSION FOR THE CONSERVATION OF SOUTHERN BLUEFIN TUNA**  
**(CCSBT)**

This Letter of Agreement (LOA) sets out the agreement between SPC and the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) regarding the provision of the SPC-developed TUFMAN 2<sup>1</sup> code to the CCSBT ('the Agreement').

**I. The Agreement**

The Agreement sets out the conditions whereby SPC provides CCSBT access to TUFMAN 2 core code, developed by SPC :

**RECOGNIZING** the previous Letter of Agreement (LOA) that provided CCSBT with access to the SPC TUFMAN 2<sup>©</sup> code from 27<sup>th</sup> July 2016 for a period of 12 months to evaluate its potential for a basis for developing a system to manage CCSBT data, including its CCSBT Catch Documentation System (CDS);

**RECOGNIZING** that both organisations compile tuna fisheries data for the main purpose of research, conservation and management of respective stocks of oceanic tuna species (CCSBT for Southern Bluefin Tuna and SPC for the key species of the Western and Central Pacific Fisheries Commission (WCPFC));

**RECOGNIZING** that SPC has developed a comprehensive database system (TUFMAN 2<sup>©</sup>) for managing and integrating tuna fisheries data, and that CCSBT recognises the efficiencies and synergies in using the core of this system;

**RECOGNIZING** that SPC understands the benefits they will receive for the enhancements made to the TUFMAN 2<sup>©</sup> system by CCSBT through written mutual agreement;

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<sup>1</sup> 'TUFMAN 2' is defined to be the code, any part of the code, or modification thereof ; this LOA recognises the intellectual property rights of SPC to TUFMAN 2

## II. Agreed activities and conditions

With respect to the use of the TUFMAN 2 code:

- (a) CCSBT have responsibility for satisfying any licensing requirements with respect to third party code or software components that are incorporated into the TUFMAN 2 code provided.
- (b) CCSBT acknowledges that SPC owns and retains the right to maintain the core without consultation.
- (c) CCSBT will advise SPC on any requirements to change the TUFMAN 2 core code and that the decision to change the core code will be taken by written mutual agreement.
- (d) CCSBT (covering their staff) will not allow access or distribution of the TUFMAN 2 code to any third party without the consent of SPC.
- (e) CCSBT will ensure that the conditions for use of the TUFMAN 2 code in any contract with a party that is not SPC, does not allow them to use or distribute the TUFMAN 2 code beyond their specific work for CCSBT.
- (f) If CCSBT decides to discontinue the use of the TUFMAN 2 code then this agreement will terminate, and SPC will remove access to the TUFMAN 2 code.
- (g) CCSBT will acknowledge the use of the TUFMAN 2 code by including the following text in the software 'ABOUT' form:
 

*This system has been derived from TUFMAN 2© platform, developed by Oceanic Fisheries Programme of the Pacific Community*
- (h) CCSBT will allow access of any code they are responsible for developing under the TUFMAN 2 core, to SPC.

With respect to this LOA:

- (a) SPC will allow access to the TUFMAN 2 code to CCSBT for the period of this LOA.
- (b) SPC has no liability or responsibility for any third party code or software components that are incorporated into the TUFMAN 2 code provided.
- (c) SPC will consider any requirements to change the TUFMAN 2 core code provided by CCSBT, noting that the decision to change the core will be taken by mutual agreement.
- (d) SPC will maintain a log of modifications to the TUFMAN 2 core code.
- (e) SPC reserves the right to revoke<sup>2</sup> CCSBT access and continued use of the TUFMAN 2 core code if there is evidence that the spirit of this agreement or any CONDITIONS of this agreement have been breached.

The following general conditions apply:

- (a) An informal annual review will be conducted, by email, to report: (i) general updates of Tufman 2 from SPC during the previous year, and (ii) general description of the use of Tufman 2 by CCSBT during the previous year.
- (b) While the agreement is active, the CONDITIONS of this agreement may be modified at any time by mutual consent.
- (c) SPC shall not be liable for any errors/decisions/faults in the TUFMAN 2 core code.
- (d) At the termination of this LOA, SPC will remove<sup>2</sup> access to the TUFMAN 2 code.

Both parties agree to:

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<sup>2</sup> Removal or revoking of CCSBT's access to TUFMAN 2 core code means the removal or revoking of access to code maintained by SPC. The CCSBT may continue to use the version of the Tufman 2 core code that it has at that time, so that its system can continue to be used and further developed.

- a) communicate regularly with each other and provide timely information on matters relating to the activities
- b) raise any issues of concern with the nominated focal point

Additional responsibilities, or changes to these responsibilities, may be generated and agreed to by the Parties as part of the planning process.

### **III. Timing of activities**

The term of the Agreement will be an initial term of 60 months from the signing of this document by both parties. At the end of this initial term, this agreement will be jointly reviewed by SPC and CCSBT and extended by mutual consent.

### **IV. Budget**

The only budget implication for the Agreement is that SPC will need to recover the costs for any questions/support related to TUFMAN 2 that exceed 2 person-hours per month at the SPC nominated rate of USD 120 per hour.

### **V. Confidentiality and use of data**

Each party will maintain the confidentiality of any information it receives from the other Party that has been designated as confidential or which by its nature is deemed to be confidential. The parties will only use confidential information for purposes of this LoA.

### **VI. Intellectual property rights and use of collected data**

Pre-existing intellectual property rights remain the property of their current owner. Any intellectual property rights vest in SPC.

### **VII. Child protection**

CCSBT acknowledges SPC's Child Protection Policy as updated from time to time, and will use its best endeavours to act in accordance with those principles and to abide by other relevant international declarations, conventions and arrangements.

### **VIII. Visibility**

The Parties maintain sole authority over their respective names, logos and emblems. Neither Party is authorised under this Agreement to make use of the other Party's name, logo nor emblem, except as separately agreed in writing.

**IX. Focal points**

The focal points for this LOA are:

Mr Bruno Deprez  
Systems Development Manager  
Oceanic Fisheries Programme  
Pacific Community (SPC)  
Noumea, New Caledonia

E: [brunod@spc.int](mailto:brunod@spc.int)  
Ph: (687) 26.20.00

Mr. Colin Millar  
Database Manager  
Commission for the Conservation of Southern  
Bluefin Tuna (CCSBT)  
Canberra, Australia

E: [CMillar@ccsbt.org](mailto:CMillar@ccsbt.org)  
Ph:

**X. Resolution of disputes**

The Parties shall make their best efforts to amicably settle any dispute, controversy or claim arising out of this LoA. Any disputes that might arise from or in relation to this Agreement, if not settled by negotiation, shall be settled by arbitration in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL). This LOA will be governed by the general principles of international law.

**XI. Privileges and immunities**

Nothing in or relating to this LOA shall be deemed a waiver of SPC's privileges and immunities.

**XII. Entry into force, termination and extension**

This LoA will enter into force on the date of its signature by both Parties and will remain into force until 60 months after the date of its signature. Clause IV will extend beyond the termination of the LoA.



Mr. Cameron Diver  
Deputy Director-General  
Pacific Community (SPC)

7 August 2018



Mr. Robert Kennedy  
Executive Secretary  
CCSBT

Date: 7 August 2018

## COMPONENT DESCRIPTIONS

### 1: TUFMAN 2 Essentials

This “essentials” component would need to be implemented as part of the basic system framework before any of the additional components/ modules listed below could be developed/ implemented.

A brief description of the elements included in this package are:

- Authentication and authorisation of users, with role-based security levels;
- Data security / visibility – ensuring a Member’s data that is only be visible to other Members when appropriate;
- Uploading of files and supplementary attachments;
- Application notifications and system email alerts;
- User administration interface;
- Deployment – setting up the server to run the website and data service; and
- Documentation.

### 2: Monthly Catch Reports

The monthly catch report module would enable monthly catch report data to be uploaded online by each Member and amended (if necessary).

A summary of each season’s monthly catch report information would be presented in tabular format similar to how it is currently displayed in the Excel spreadsheet on the CCSBT’s website. Email notifications would be sent whenever Members made updates.

### 3: Authorised Validators

The authorised validator module would enable the following functionality:

- Searching for and displaying current and past authorised CDS validators;
- Amendment of existing authorised validator details;
- Addition of new authorised validators; and
- Notifying Members and the Secretariat when updates are made.

Currently the CCSBT website does not enable Members to search for validators by name or date. This module would make it much easier for Members to locate specific validator information.

### 4: Authorised Vessels

The authorised vessels module would allow Members to update existing vessel details online, as well as to add *single* new vessel records. This would provide a more efficient way of maintaining individual vessel records than currently as it would reduce the duplication in work required by Members and the Secretariat.

This module would enable the following functionality:

- Searching for and displaying current and past authorised vessels;
- Amendment of existing authorised vessels by Members/ the Secretariat (if amendment passes validation checks);
- Addition of new authorised vessels (one by one) by Members/ the Secretariat; and
- Notifying the Secretariat when updates are made.

### **5: Authorised Vessels: Bulk Upload Add-on**

This authorised vessel ‘add-on’ would allow Members and the Secretariat to upload many new authorised vessels and amendments at once/ in bulk. The authorised vessels information would be stored in an Excel file similar to the current authorised vessels template Members currently use. The system would immediately validate the information in the file and then if the validation was successful, update the CCSBT authorised vessels database, as well as the website.

### **6: Automated Reminder Facility**

This component would enable automated data submission reminders to be sent to Members as appropriate in advance of due dates.

### **7 & 9: Maintenance & Bug Fixes**

Maintenance components 7 and 9 have been included in the budget to cover any unexpected maintenance issues, fixes, and minor enhancements as required, as is the usual practice with software developments.

### **8: Cloud Hosting**

It is planned that in the short-term any new online information system would be hosted by the Secretariat’s internal network server (*i.e.* a website hosted by the Secretariat) and would be accessible to Members. However, for reasons of efficiency<sup>1</sup>, robustness and security, it is preferable that the system should be moved to the cloud and hosted by a major provider such as Microsoft or Amazon as soon as possible. Note that not all of the CCSBT’s databases would need to move to the cloud, only the data used by the online system which would be synchronised to the CCSBT’s databases in the Secretariat office.

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<sup>1</sup> Hosting the system in the cloud would mean the Secretariat would not need to upgrade and then maintain its in-house servers/backup systems for this new development which would result in considerable cost savings.

**Budget: 2019 – 2021****Total estimated cost for work to be done by consultant: AUD \$74,800<sup>2</sup> over 3 years**

Year	Component Description	Estimated Cost (rounded)
2019	<b>(PREREQUISITE FOR ALL OTHER ITEMS)</b> 1. Coding of required TUFMAN 2 framework elements including: <ul style="list-style-type: none"> <li>• User authentication</li> <li>• User authorisation</li> <li>• User administration</li> <li>• Enabling visibility rules</li> <li>• Enabling notifications</li> <li>• Documentation</li> <li>• Maintenance</li> <li>• Deployment (to in-house server)</li> </ul>	\$24,200
	2. Monthly catch reports: <ul style="list-style-type: none"> <li>• Populate with all current and historical monthly catch data</li> <li>• Submit, display and edit</li> </ul>	\$1100 \$8,250
	3. Authorised validators: <ul style="list-style-type: none"> <li>• Submit, display and edit (no bulk upload)</li> </ul>	\$3,300
	<b>Subtotal (2019):</b>	<b>\$36,850</b>
2020	4. Authorised vessels (FVs & CVs): Submit, display and edit (bulk upload is separate – see item 5)	\$6,600
	5. Authorised vessels (FVs & CVs): <ul style="list-style-type: none"> <li>• Include a bulk upload facility</li> </ul>	\$5,500
	6. Automated reminder facility: <ul style="list-style-type: none"> <li>• To provide system-wide automated data submission reminders</li> </ul>	\$6,050
	7. Maintenance/ bug fixes: <ul style="list-style-type: none"> <li>• As required</li> </ul>	\$5,500
	8. Cloud hosting: <ul style="list-style-type: none"> <li>• Move to cloud-hosting</li> </ul>	\$11,000
<b>Subtotal (2020):</b>	<b>\$34,650</b>	
2021	9. Maintenance/ bug fixes: <ul style="list-style-type: none"> <li>• As required</li> </ul>	\$3,300
	10. Other work modules may be requested by Members and could be added into the budget as agreed, <i>e.g.</i> graphical representation of monthly catch reports or other data	-
<b>Subtotal (2021):</b>	<b>\$3,300</b>	
<b>2019 - 2021</b>		<b>\$74,800</b>
<b>Potential Alternative and/or Additional Components</b>	Develop selected eCDS modules	Not estimated

<sup>2</sup> This figure and all of the figures in this table include Australian Goods and Services Tax of 10%