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# VESSEL MONITORING SYSTEMS:
# A key tool for Fisheries Monitoring, Control and Surveillance

## WHAT IS VMS?

A **vessel monitoring system** (VMS) is a satellite-based **monitoring system** that, at regular intervals, provides fisheries authorities data on the **location, course and speed of fishing vessels**.

## BENEFITS OF A VMS PROGRAM

VMS programs are integral to effective fisheries management. They support monitoring, control and surveillance of the activities of vessels involved in the catch and transportation of fisheries resources. VMS programs also provide additional information to fisheries scientists and are important for estimating CPUE.

## HOW DOES VMS WORK?

On-board transceiver units (automatic location communicators or ALCs) automatically transmit, via satellite, reports to a land based receiver stations. These reports can be either simultaneously transmitted, or re-reported, to flag State Fisheries Management Centres, coastal States and/or RFMO Secretariats.

## WHAT ARE THE COMMON ELEMENTS OF VMS PROGRAMS?

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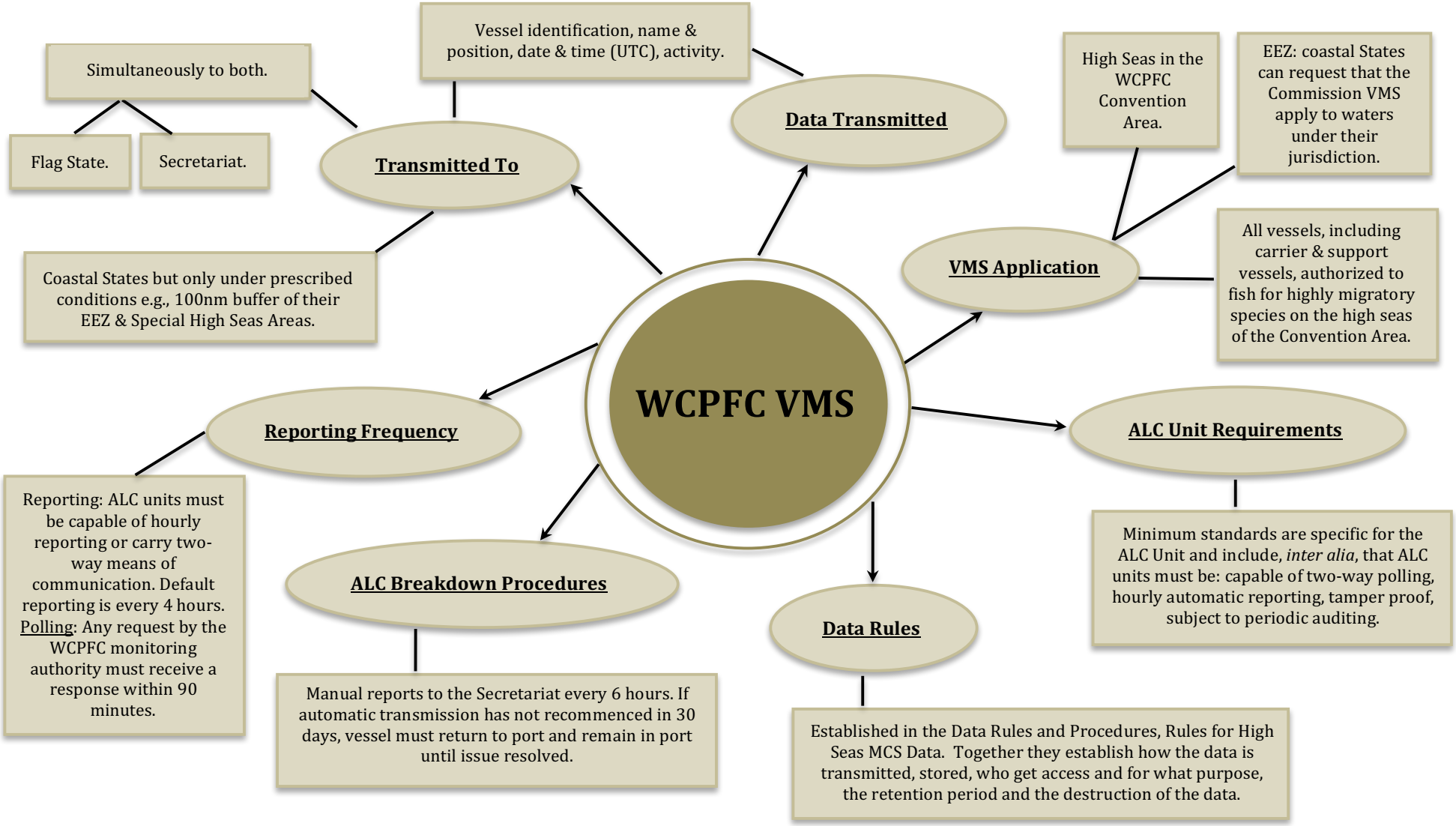
|---|---|
| **VMS Application** | • Define the specific size of vessel that the VMS program applies to and/or the geographical area where the VMS applies (e.g. high seas, EEZ, or both).<br>• Define the class of vessel that the VMS program covers (e.g. fishing vessels, carrier and support vessels). |
| **ALC Unit Requirements** | • Define minimum technical standards for the ALC units to create harmonization between existing VMS programs.<br>• At minimum this must include requirements for ALCs units to be tamper-proof, but can also include other technical specifications of the ALC units such as two way polling and minimum polling rates. |
| **Rules for the Collection, Storage and Use of VMS Data** | • Specify the confidentiality requirements surrounding the collection, dissemination, use and storage of VMS data.<br>• This may include specification of how long the data is kept for, who can access the data and for what purpose (e.g. by RFMO Science Committees following a prescribed time lag or by the Compliance Committee for assessing flag State compliance with RFMO rules and/or in relation to IUU cases). |
| **Data Transmitted by VMS** | • Defines what data is transmitted via the VMS program. Existing RFMO VMS programs all require the following data to be transmitted:<br>o Vessel identification number and vessel name<br>o Position, either current or most recent, with minimum accuracy requirements, e.g. minimum margins of error of less than 100m<br>o Date and time expressed as UTC.<br>• Other information can also be collected and reported using the VMS program e.g. the vessels course and speed, an estimate of the catch onboard, the fishing effort, estimated port of landing, the vessels activity e.g. fishing, searching, transit, transhipment, etc. |
| **Data Transmitted to** | • Define which organisations the VMS data are reported to.<br>• At minimum, VMS data must be reported to the flag States Fisheries Management Centre. Some programs require simultaneous or re-reporting of the VMS data to the coastal State if inside waters under their national jurisdiction or to the RFMO Secretariat for centralized VMS programs (e.g., WCPFC). |
| **Data Reporting Frequency** | • Specify how frequently the VMS data is to be reported.<br>• Minimum requirements can depend on the type and geographical locations of the fishery, but are typically between 1 and 6 hour intervals; best practice is every 2 hours. |
| **Procedures in event of ALC Breakdown** | • Define the procedures the fishing vessel must follow in the event of an ALC unit breakdown.<br>• Most RFMOs specify that the unit must be fixed or replaced within 30 days, that there is no fishing after the 30 day period until the unit is working and that the vessel must report manually at prescribed intervals. |

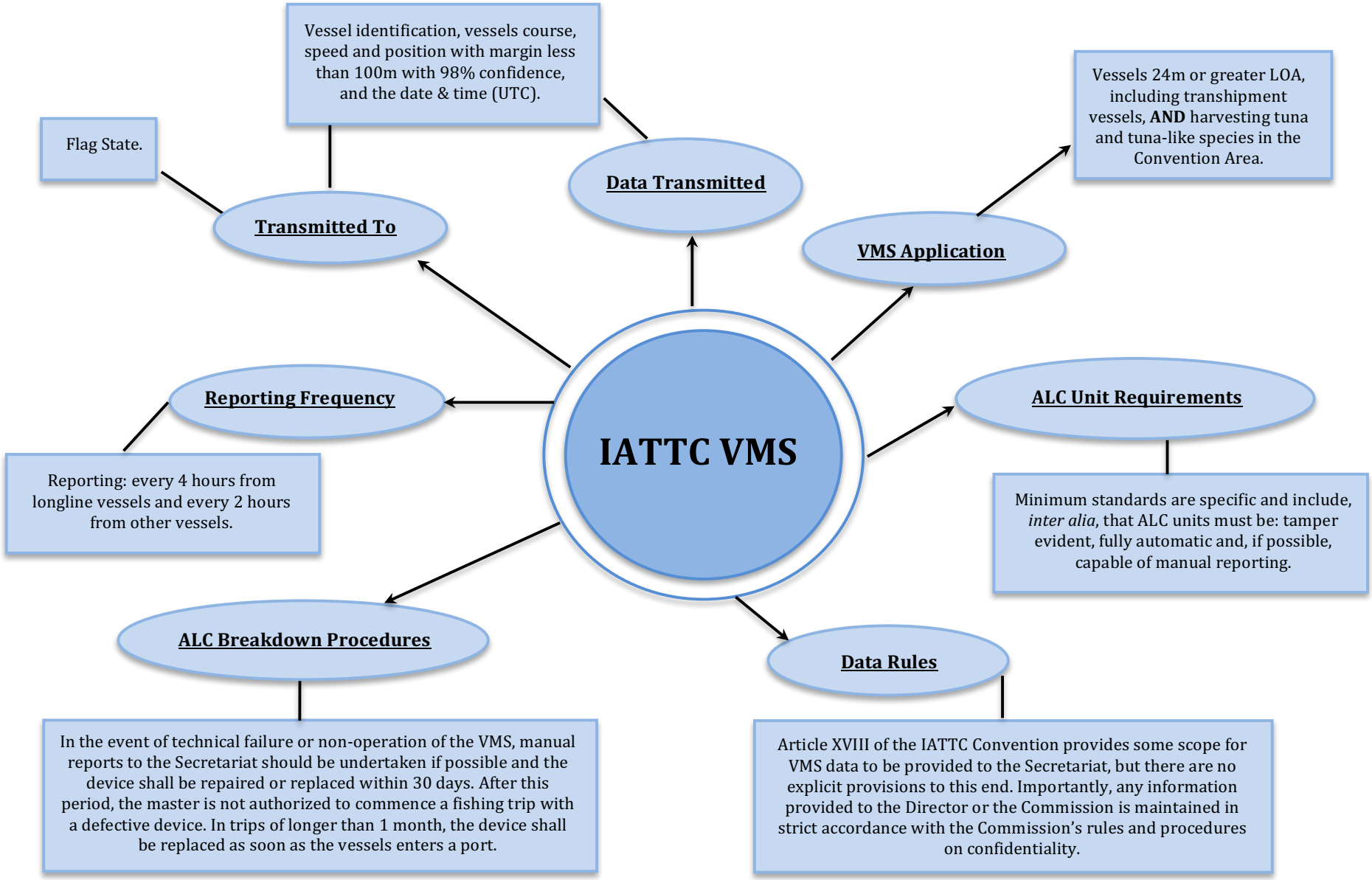
# VMS CASE STUDY ONE – WCPFC

For complete details on the WCFPC VMS system please refer directly to the text of CMM 2014-02 and the VMS Reporting Guidelines. Importantly, VMS coverage in the exclusive economic zones (EEZ) of FFA members is covered by the FFA or national VMS program. The WCPFC VMS also has an 'opt in' component that enables EEZ coverage when requested by a national government.



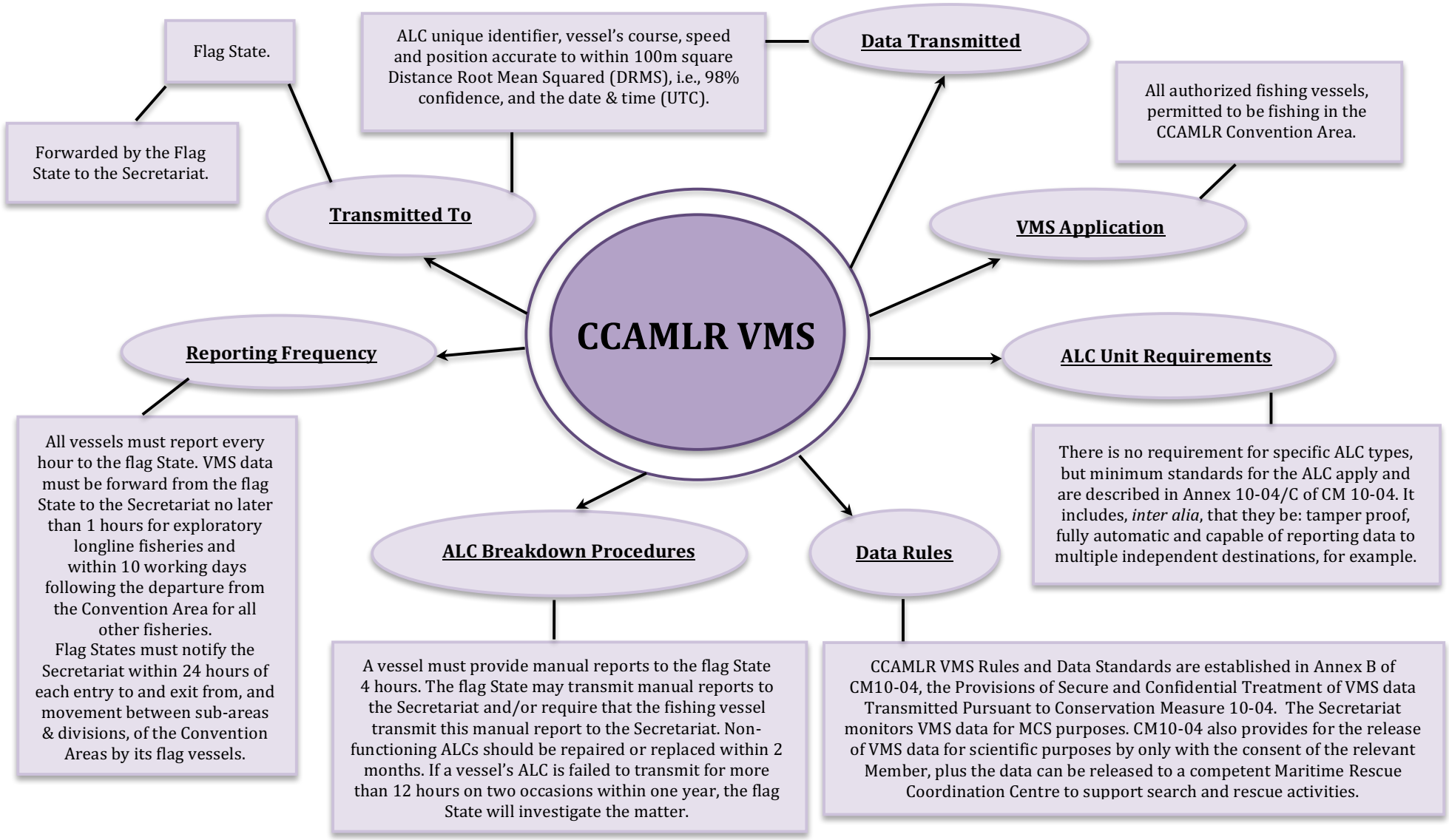
# VMS CASE STUDY TWO – IATTC

For complete details on the IATTC VMS system please refer directly to the text of C-14-02.



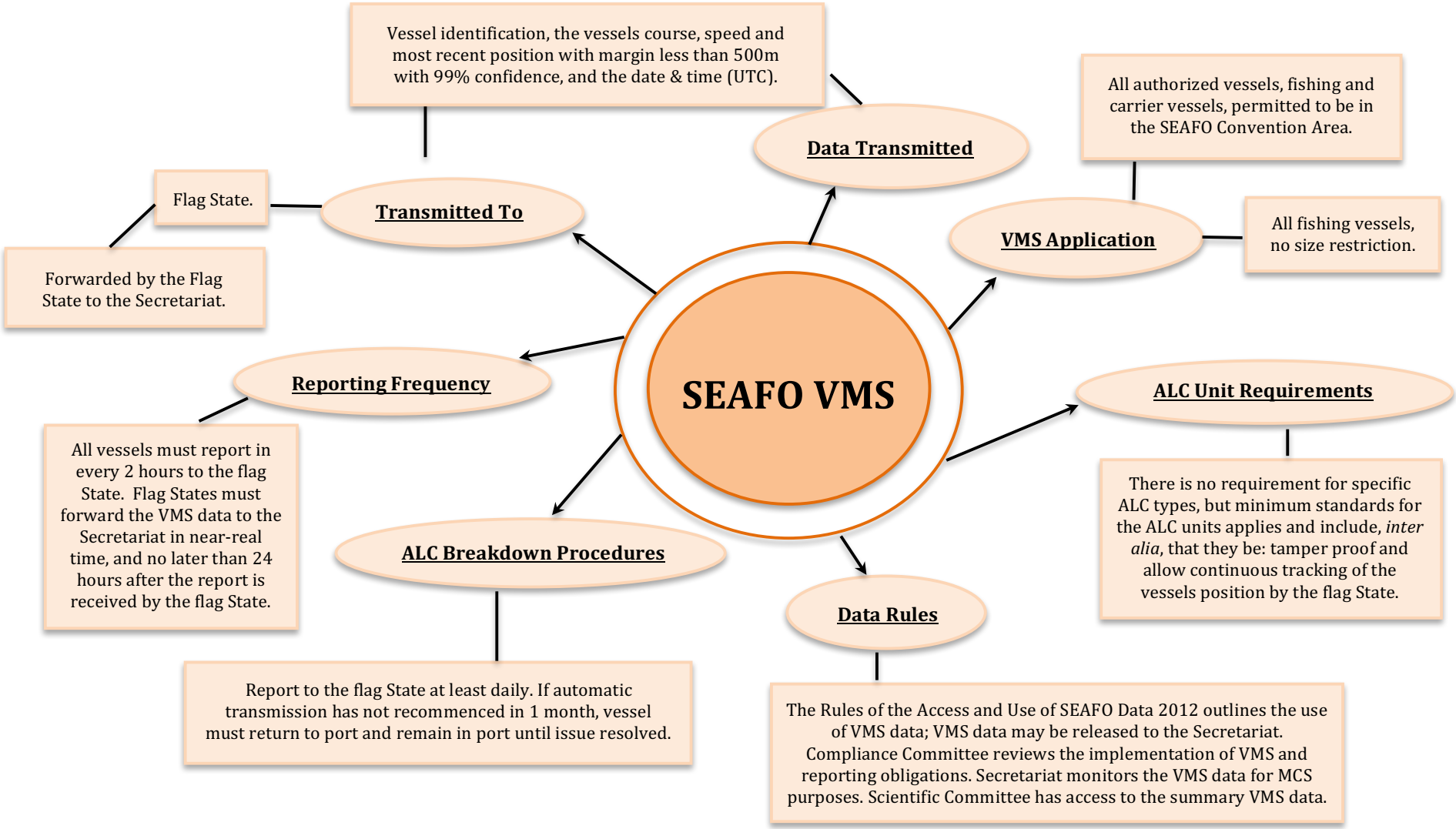
# VMS CASE STUDY THREE – CCAMLR

For complete details on the CCAMLR VMS system please refer to CM10-04(2015), which was adopted at the 34th Session of the Commission, and will enter into force 180 days following its adoption consistent with Article IX.6 of the Convention. Preliminary conservation measures are at https://www.ccamlr.org/node/77330.



# VMS CASE STUDY FOUR – SEAFO

For complete details on the SEAFO VMS system please refer directly to the text of Article 13, Vessel Monitoring System of the SEAFO System of Observation, Inspection, Compliance and Enforcement. NB: SEAFO Convention Area includes the high seas only.



# VMS CASE STUDY FIVE – SUGGESTED VMS BEST RPACTICES

For comprehensive review of VMS and suggested best practices and details of other RFMO VMS programs please refer to ISSF Technical Report 2014-01A. The following diagram provides suggestions for best practice tuna VMS systems.