



# Scoping the next stock assessment platform

*P123 – Background and discussion*

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SPC Pre-Assessment Workshop

Nouméa, 28 March 2024

# Overview

**Project P123**    *objective, background, terms of reference*

**Software Platforms**    *operational, current and future development*

**Road Ahead**    *assessments, workshops, collaboration, adaptive plan*

**Possible Outcomes**    *level of funding, partnerships*

# Reflections

**SPC buildings** – large project, resources, requirements, interim phase, flag

**AD Model Builder** – comparable lifetime, succession, from maintainer to container

**Flight** – research and development, novel breakthrough, uncertain project duration,  
uncertain outcome

**Timing** – John, Nick, Dave

# Project P123

Scoping the next tuna stock assessment software

Project scheduled 1 Feb 2024 to 31 Dec 2026

50K USD each year: 2024, 2025, 2026

# Project P123

- ▶ *Project objective*

Scoping phase to assess what features and capabilities will be important in future assessment software for tunas

- ▶ *Overarching objective*

Continue to support the specificities and future requirements of WCPFC tuna stock assessments

- ▶ *Desired outcome*

Software platform that has the desired functionality for tuna assessments around the world

# Background

Future advances to MFCL are not expected to be as mathematically innovative as in the past

Need to plan and identify whether alternative existing software exists, or new software must be developed in the longer term

Starting a phased approach to replace MULTIFAN-CL

Collaboration with other tuna RFMOs is essential to produce the desired outcome

This is anticipated to be a multi-year endeavor that may need additional funding

## Terms of Reference

### *2024*

1. Review and identify important model features for tuna assessments
2. Identify existing platforms that have these features or can be extended
3. Reach out to and initiate collaboration with model developers
4. Conduct two workshops in 2024, one online and one in person

### *2025–2026*

5. Conduct simulation studies
6. Determine which platforms can be considered viable candidates
7. If a viable platform has been identified, plan transition
8. If no viable platform is identified, extend a platform or create a new one

# Software Platforms

## Existing platforms that fit to length composition data

Stock Synthesis

Casal2

Gadget

## Ongoing development

SAM fitted to length comps    *Colin Millar, Anders Nielsen*

WHAM fitted to length comps    *Giancarlo Correa, Tim Miller*

ALSCL    *Fan Zhang, Noel Cadigan*

CCSBT    *D'Arcy Webber, Rich Hillary*

FIMS    *NOAA*



## Road Ahead

Tunas every 3 years

Swordfish every 4 years

Striped marlin every 5 years

**2024** ALB MLS

**2025** SKJ SWO

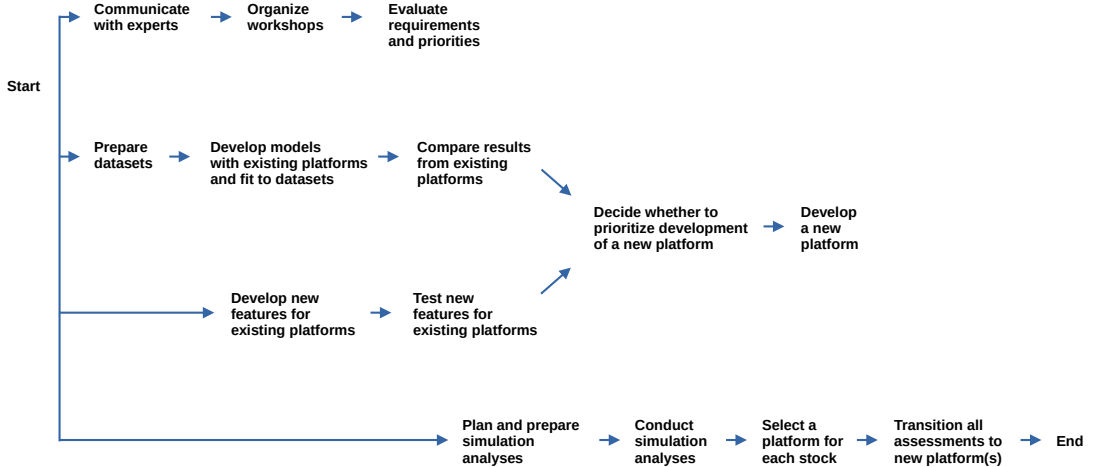
**2026** BET YFT

**2027** ALB

**2028** SKJ

**2029** BET YFT SWO MLS

**2030** ALB



## Possible Outcome

If commitment and funding is limited, then the following unwanted outcome, characterized by a lack of progress, could well occur...

*Upcoming assessments:*

**2024** MFCL with config changes, other platform(s) did not work well, workshop

**2025** MFCL with config changes, other platform(s) did not work well, workshop

**2026** MFCL without config changes, other platform(s) did not work well, workshop

**2027** MFCL without config changes, other platform(s) did not work well, workshop

**2028** MFCL without config changes, other platform(s) did not work well, workshop

**2029** MFCL without config changes, other platform(s) did not work well, workshop

**2030** MFCL without config changes, other platform(s) did not work well, workshop

## Possible Outcomes

will depend on:

### Level of funding

Level 0 – Annual workshops, coordination

Level 1 – Hire one person for 5 years

Level 2 – Hire two people for 5 years

### Partnerships

Tuna RFMOs – funding and scientists' time

Domain experts in state-space model development – scientists' time

Other funding sources

# Summary

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