Transparent Assessment Framework

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http://taf.ices.dk

ICES
CIEM
Science for sustainable seas

Aim

To implement a framework to organize data, methods, and results used in ICES assessments, so they are easy to find and rerun later with new data.

ICES advisory process

1. **Work** within institutes
   prepare data, prepare model, run model(s)

2. **EG** meeting
   finalize model run, write report + draft advice sheet

3. **ADG** meeting
   finalize advice sheet

4. **ACOM** meeting
   finalize advice

Current workflow

Containers

- **Chapter** in report
  data, results

- **Stock annex** in report
  data-methods, assmt-methods

- **Data folder** on Sharepoint
  data, assmt-methods, results

- **Advice sheet** via Stock Assessment Graphs
  results

- **GitHub** EG repository
  data, assmt-methods, results

Areas for improvement

- **Chapter** in report
  hard to find reports, hard to copy tables from pdf

- **Stock annex** in report
  hard to find newest version, ambiguity, lack of detail

- **Data folder** on Sharepoint
  depends on stock assessor, can be missing, no guarantees

- **Advice sheet** via Stock Assessment Graphs
  pathway from assessment to SAG database could be streamlined

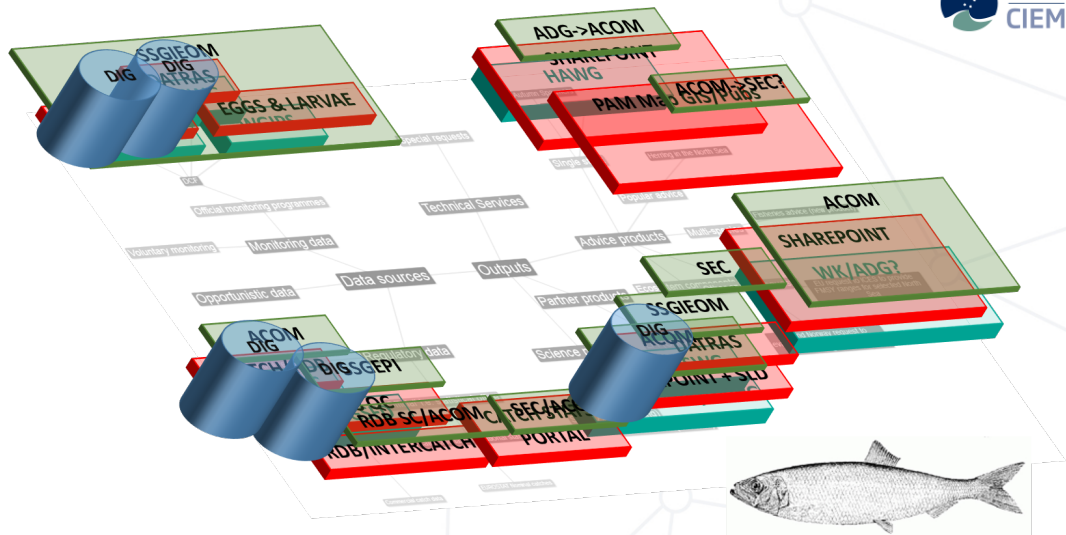- **GitHub** EG repository
  not linked into the ICES system

New framework

Objectives

The new framework should be:

- **Encapsulated:** entire pathway from input DBs to SAG in one system

- **Quality controlled:** data can be traced to sources, values are checked

- **Repeatable:** data preparation and assessment workflow is recorded and can be run

- **Transparent:** anyone can browse on the web

- **Cohesive:** make use of existing ICES infrastructure

Existing network

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The following web service APIs are provided:

Name	getHHdata(survey,year,quarter)

Description This API of the webservice returns the url to the Haul-based information for the given survey, year, and quarter.

Input Survey acronym (e.g. NS-IBTS,BITS)
Year (e.g. 2010,2011)
Quarter (e.g. 1,2,3,4)

Output Returns detailed haul-based meta-data of the survey such as haul position, sampling method etc.

Example Haul based data for survey=NS-IBTS,year=1966 and quarter=1

Name	getHLdata(survey,year,quarter)

Description This API of the webservice returns the url to the Length-based species information for the given survey, year, and quarter.

Input Survey acronym (e.g. NS-IBTS,BITS)
Year (e.g. 2010,2011)
Quarter (e.g. 1,2,3,4)

Output Returns length-based information such as measured length, individual counts, and subfactors of sampled species.

Example Length based data for survey=NS-IBTS,year=1966 and quarter=1

GitHub, Inc. (US) | https://github.com/ices-tools-prod

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ICES tools (products)

Tools provided by ICES, or by other institutes and projects

Copenhagen, Denmark http://ices.dk github@ices.dk

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icesSAG

Stock Assessment Graphs Database Web Services

Updated 6 days ago

R ★ 1 ⑂ 0

icesDatras

R interface to DATRAS trawl database web services

Updated 6 days ago

R ★ 1 ⑂ 0

icesAdvice

R ★ 3 ⑂ 0

People 3 ›

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Einar Hjorleifsson

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```
26   #' @export
27
28   getDATRAS <- function(record = "HH", survey, years, quarters) {
29     # check record type
30     if (!record %in% c("HH", "HL", "CA")) {
31       message("Please specify record type:",
32               "\n\t\tHH (haul data)",
33               "\n\t\tHL (length-based data)",
34               "\n\t\tCA (age-based data)")
35       return(FALSE)
36     }
37
38     # check survey name
39     if (!checkSurveyOK(survey)) return(FALSE)
40
41     # cross check available years with those requested
42     available_years <- getSurveyYearList(survey)
43     available_years_req <- intersect(years, available_years)
44     if (length(available_years_req) == 0) {
45       # all years are unavailable
46       message("Supplied years (", paste(years, collapse = ", "), ") are not available.\n  Available options are:\n",
47               paste(capture.output(print(available_years)), collapse = "\n"))
48       return(FALSE)
49     } else if (length(available_years_req) < length(years)) {
50       # some years are unavailable
51       message("Some supplied years (", paste(setdiff(years, available_years), collapse = ", "),
52               ") are not available.")
53     }
54
55     # get matrix of available data for years and quarters requested
56     mat <- sapply(as.character(available_years_req),
```

Objectives (cont.)

Make it easier to:

- ▶ Find data and results from a given assessment

- ▶ Rerun model with different data or assumptions

- ▶ Prepare and run an update assessment

- ▶ Access ICES data web services

⇒ Will save time for EGs, ADGs, and ACOM

Help people to:

- See changes in model setup and data between years

- Use reproducible research to strengthen institutional memory

- Access data and results from all stocks for big-picture research

System workflow
(core)

System workflow

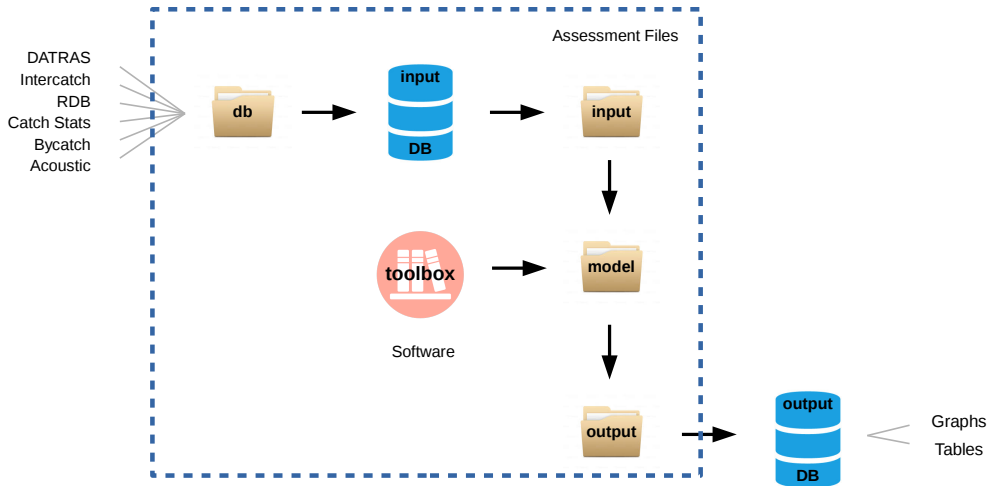input
data values
=> model input files

model
model executable
+ model input files
+ model config files
=> model output files

output
model output files
=> standard output files

System workflow
(databases)

Databases for input and output

DATRAS
Intercatch
RDB
Catch Stats
Bycatch
Acoustic

db

input DB

Assessment Files

input

toolbox

Software

model

output

output DB

Graphs

Tables

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User interface

User interface

Open `taf.ices.dk` in a web browser

Browse (everything is open) or log in to modify/run assessments

- Stock mode   upload, edit, save, run

- Boss mode

HAWG	NWWG
🟠 her-3a22	🟢 cod-iceg
○ her-47d3	🟠 sai-faro
🟢 her-67bc	🟠 sai-icel
🟢 her-irls	○ smr-5614
○ · · ·	○ · · ·

Download any dataset into R using read.csv

Key benefits

- High quality science: online, peer-reviewed, reproducible

- Improved time efficiency and reduced workload on EGs

- Much more open and structured than current workflow

Thanks!

Questions?

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