

# Implementation error model explained

Course on Management Strategies Evaluation with FLR and a4a  
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credit: ??)

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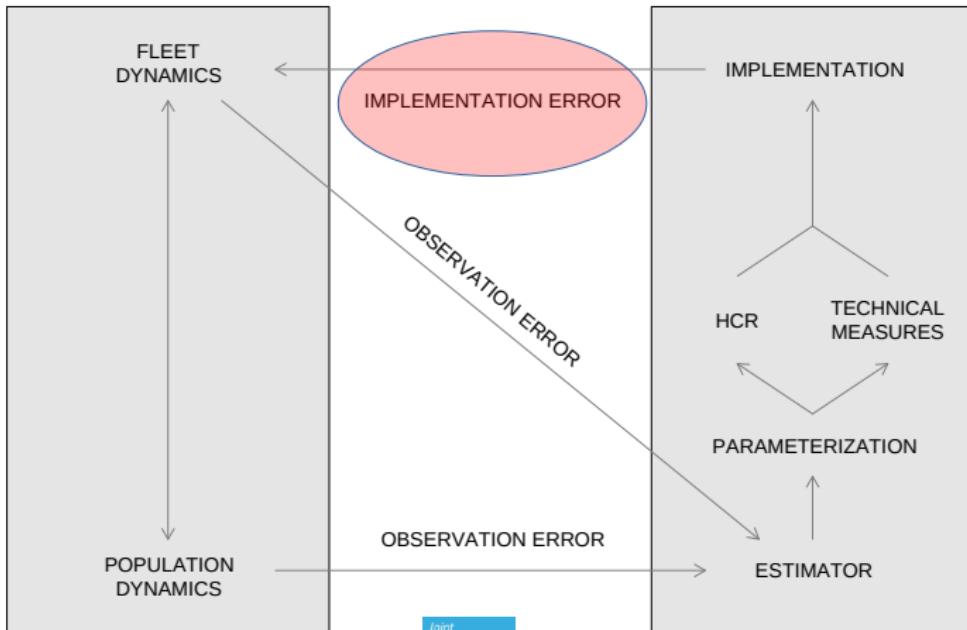
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Joint Research Centre  
European Commission

## Implementation error model function

- ▶ Models deviations from the intended management actions objectives.
- ▶ Some authors consider the IEM to be part of the operating model.
- ▶ Probably one of the less known process in MSEs and most likely one of the most important ones in terms of impact.
- ▶ Should be based in economics and human behaviour ... but how ?
  - ▶ economics: if management action drives the vessel to lose money what will fishermen do ?
  - ▶ human: culture on non-compliance will drive the fleet to ignore management actions !?

# Implementation error model within MSE cycle

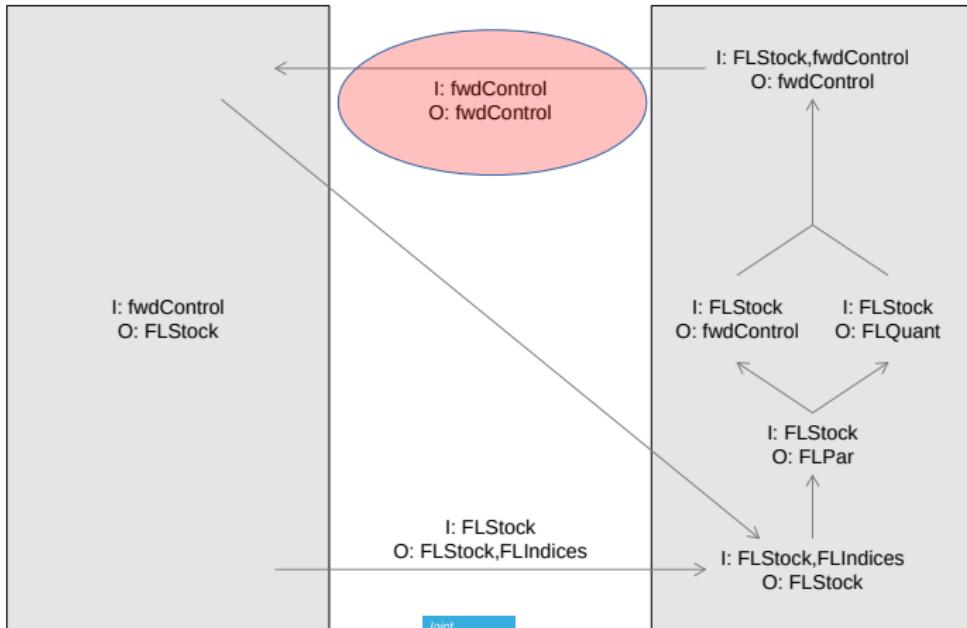




## Implementation error model within MSE cycle

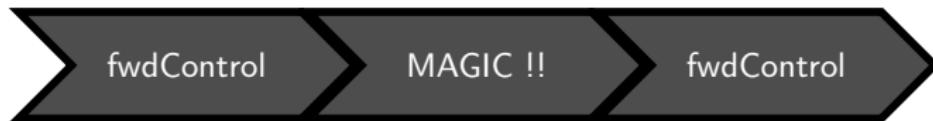


# Implementation error model API





## Implementation error model API



Note the tracking matrix and generics arguments are always passed. If not explicitly it'll be in the '....'.



# Coding an implementation error model

```
my.iem <- function(ctrl, args, tracking, ...) {  
  
  # code that runs a stock assessment, creates a new stock object with the  
  # estimations and updates the tracking matrix  
  
  # output must have a fwdControl object  
  list(ctrl = ctrl.iem, tracking = tracking)  
}
```



## Adding noise

noise.iem

```
## function (ctrl, fun = "rlnorm", mean = 0, sd = 0.1, multiplicative = TRUE,
##           args, tracking)
## {
##   iem <- list(mean = mean, sd = sd, n = sum(!is.na(ctrl@trgtArray)))
##   if (multiplicative) {
##     ctrl@trgtArray <- do.call(fun, iem) * ctrl@trgtArray
##   }
##   else {
##     ctrl@trgtArray <- do.call(fun, iem) + ctrl@trgtArray
##   }
##   lst <- list(ctrl = ctrl, tracking = tracking)
##   lst
## }
```

## <bytecode: 0x55e8d09140d8>

## <environment: namespace:mse>



# Next

Hands-on !