

# CSP Lab

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CSP-M and FDR4

# Machine readable CSP (CSP-M)

CSP-M allows to write CSP processes, where

- ▶ a functional programming language provides data
- ▶ data can be turned into events via a “channel” keyword

In the context of CSP, CSP-M is the standard input dialect for CSP tools.

Bryan Scattergood. The Semantics and Implementation of Machine-Readable CSP, 1998. DPhil thesis, University of Oxford.

# FDR4 – The CSP Refinement Checker

General analysis tool for CSP  
Developed at Oxford Univeristy

Implemented methods include:

- ▶ process visualisation (command: :graph)
- ▶ process simulation (command: :probe)
- ▶ checking for refinement – to be discussed later

<https://cocotec.io/fdr/index.html>

## Data specification in CSP-M

# Declaring events

Events can be declared in a comma separated list following the `channel` keyword.

Example:

```
channel ready, cardI, pinE, cash0, card0
```

# Declaring events

In the functional language of CSP-M one can declare a datatype, whose semantics is the set of declared elements.

Elements are separated by “|”

```
datatype CardSlotActions = cardI | cardO
```

Types from the functional language can be used in channels:

Example:

```
channel CardSlot : CardSlotActions
```