

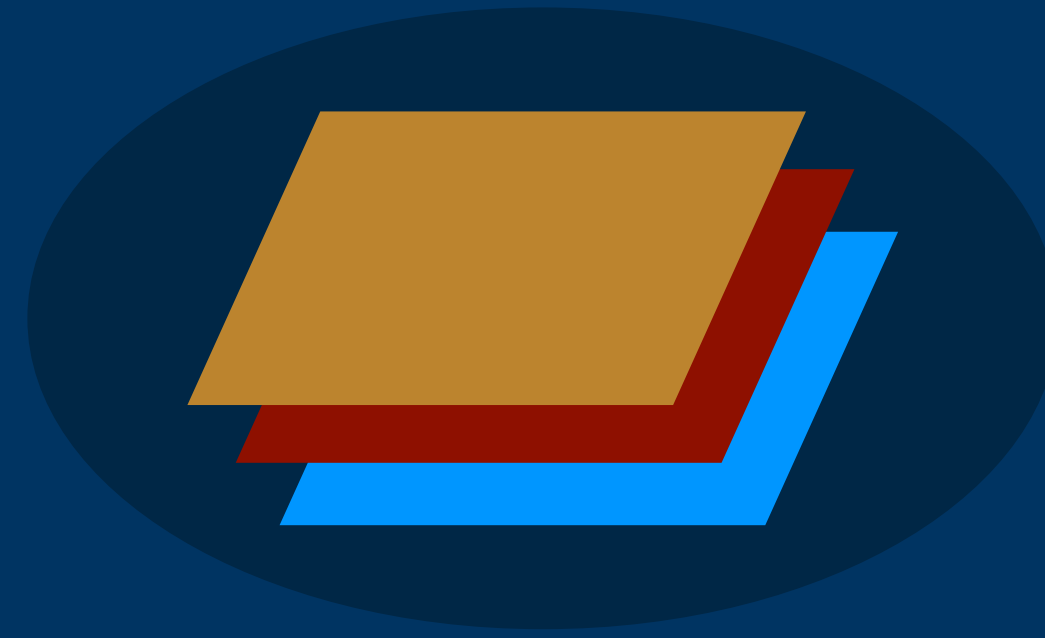
# Model Integration & Model Realization Tool Status

Leon Starr

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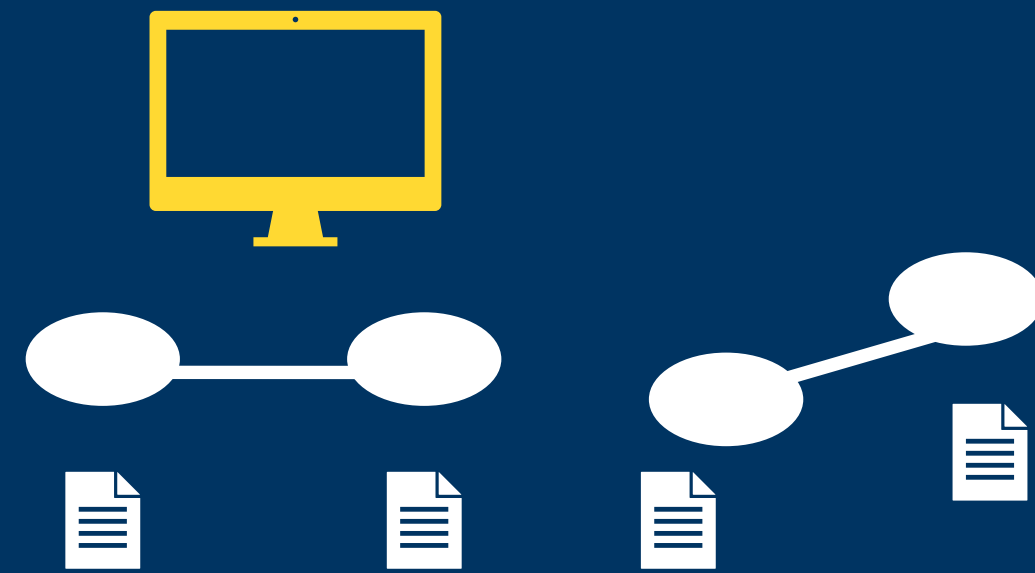
Shlaer-Mellor Days, November 14, 2023

# Blueprint MBSE ecosystem



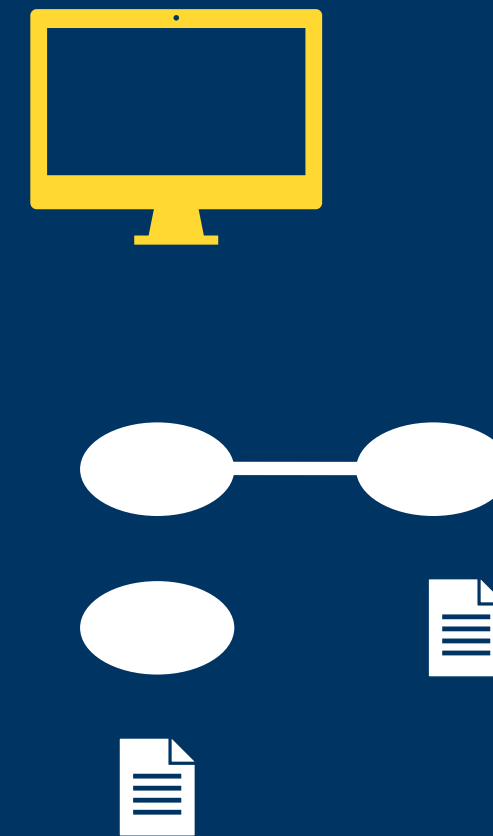
## Model Integration

model editing  
repository  
verification  
analysis tools



## Model Realization

model execution,  
code generation,  
diagnostics,  
coverage, testing ...

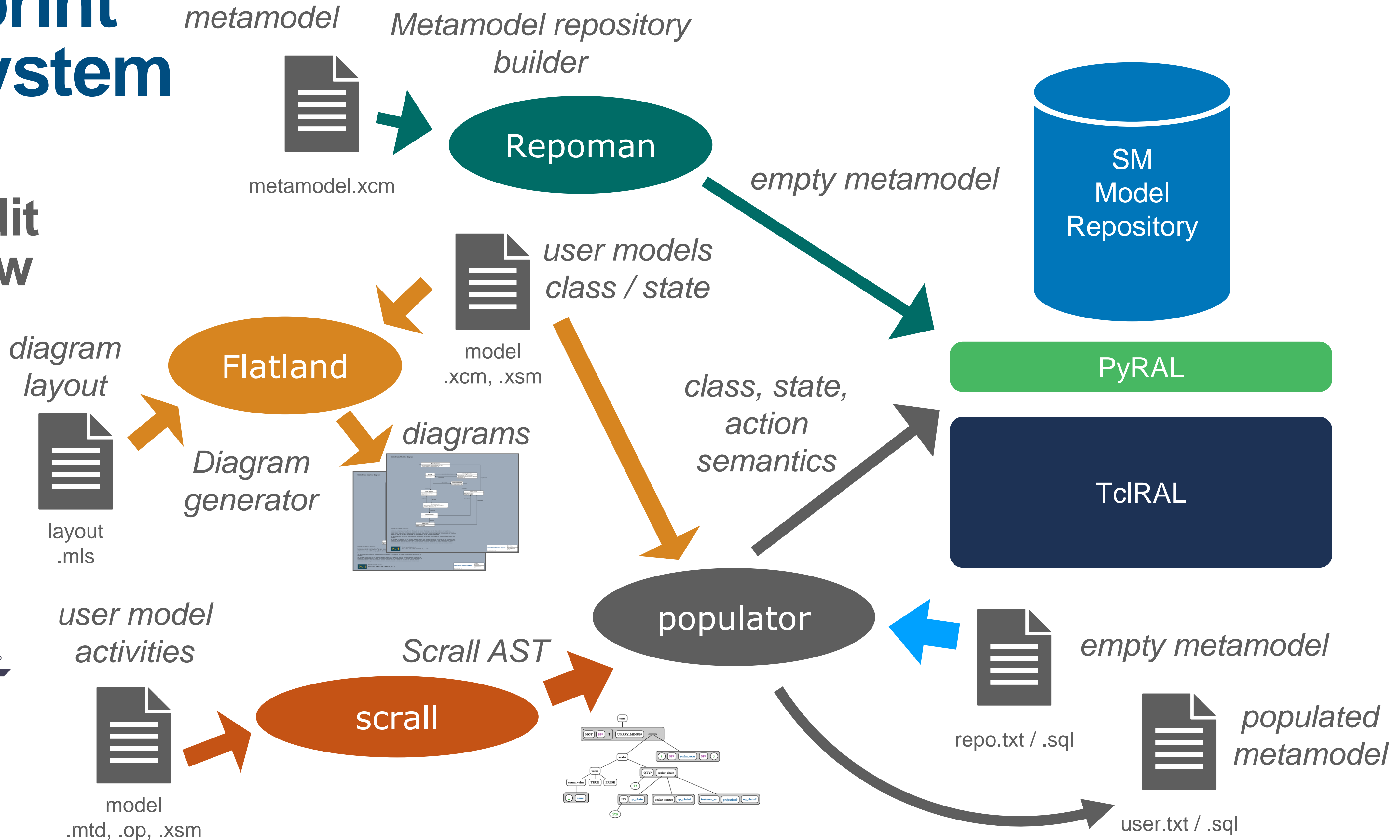
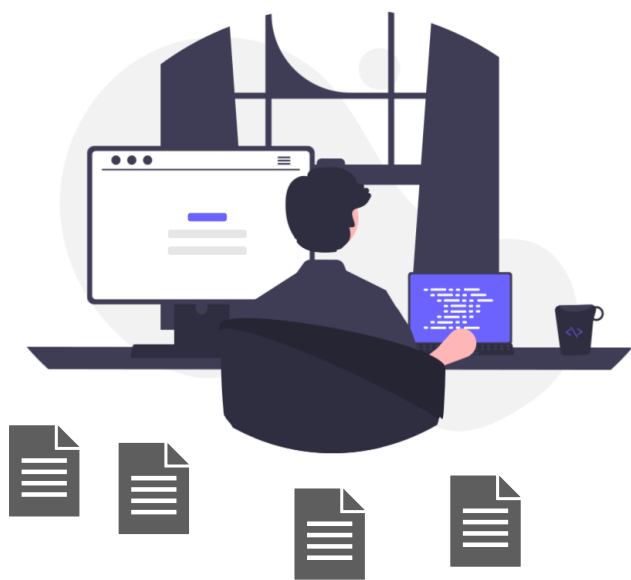


Other tools / contributors?

# Blueprint ecosystem

## model entry/edit workflow

Your favorite IDE  
(pycharm, eclipse, etc)



# Status

|                 |  |   |
|-----------------|--|---|
| populator       | <i>90% class/state<br/>30% action semantics</i>  | <i>Primary focus. Working on population of action semantics</i>     |
| scrall          | <i>90% parse, syntax complete</i>  | <i>updating as required</i>   |
| Repoman         | <i>covers existing model</i>   | <i>updating as required</i>   |
| SM<br>Metamodel | <i>90% class/state<br/>95% action semantics</i>  | <i>will backfill after populator catches up</i>                     |
| PyRAL           | <i>60 % TclRAL support</i>   | <i>updating as required</i>   |
| Flatland        | <i>Works, but requires manual tweaks to configure branding<br/>Requires minor and major update</i> | <i>Will redesign on top of PyRAL, but intermediate release soon</i> |

# Model Integration - Plans

Working toward a general release 1.0 of the entire ecosystem

This release will support anyone wanting to generate code from the repo

It's looking like July 2024 for 1.0

At least a minor release to Flatland by early 2024

No need to wait for initial collaboration

# Model Realization - Context

Existing model execution (MX) systems include:

Pycca, Rosea, Micca

Pycca is the example MX described in Models to Code

Andrew is writing a new book: Code to Models

This book includes a significant redesign of the Micca MX system: Baton

# Model Realization – Baton (Micca 2.0)

## Features

- Strong support for implicit and explicit bridging

- Strong support data integrity

  - Data managed using relational algebra

  - Detection and enforcement of all referential and identity constraints

## Design

- Implementation in Zig programming language

  - Direct interoperability with C for Micca 1.0 reuse

  - First class cross-compilation

  - Best support for relational algebra

# Model Integration & Model Realization Tool Status

## Stay Tuned...

MI: [github.com/modelint](https://github.com/modelint)

MR: [repos.modelrealization.com/cgi-bin/fossil/bottom-up/home](https://repos.modelrealization.com/cgi-bin/fossil/bottom-up/home)