

# System modelling and simulation

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 <https://github.com/ddworak/formin>

## Formin

### Concurrency

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#### Proposed changes

##### Grid

- + New cell type: **Buffer**

Buffer zone will replace the current Obstacle zone (where applicable). Foraminifera and algae are free to move to the buffer zone, signal propagation works there as usual. The buffer zone is reset after sending results at the end of iteration.

## Scheduler

- + Starts first iteration
- + Stops simulation

## Collision strategy

We aim to support configurable strategies for resolving buffer application conflicts. The essential interface can be described by a single method:

```
def resolveConflict(current: Cell, incoming: Cell): Cell
```

## Worker

- + Applies neighbour buffer data before the start of each iteration
- + Uses CollisionStrategy to resolve conflicts
- + Resets buffer zones after sending full iteration result
- + Starts new iterations after neighbour workers finish
- + Notifies listeners

## GUI

Works seamlessly on a single node with the size of full grid using data from the scheduler.

- + support rendering buffers