

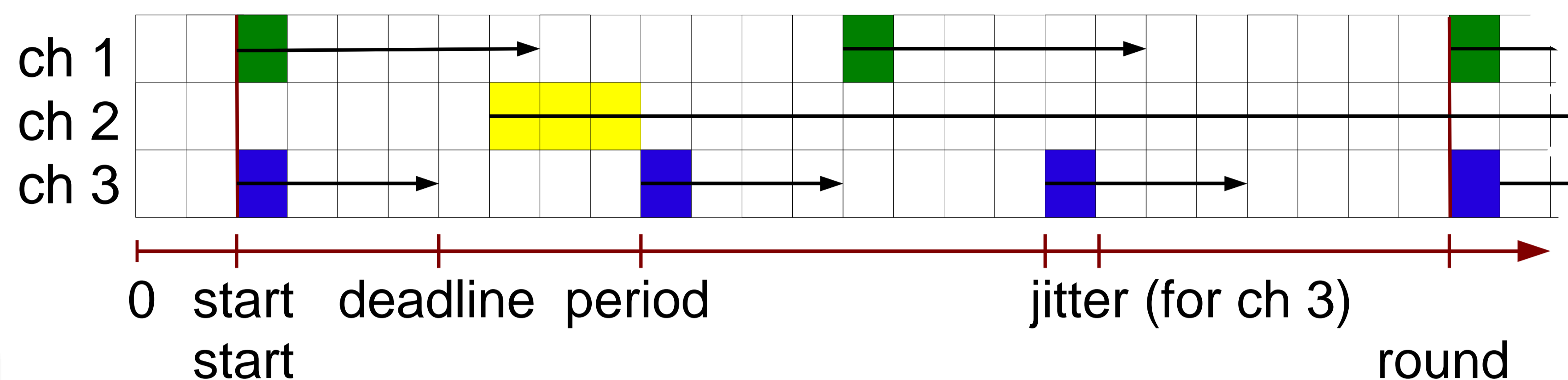
EventChannelNetwork Asynchronous with Hard Real-Time

www.eventchannelnetwork.org

System Declaration for controller node

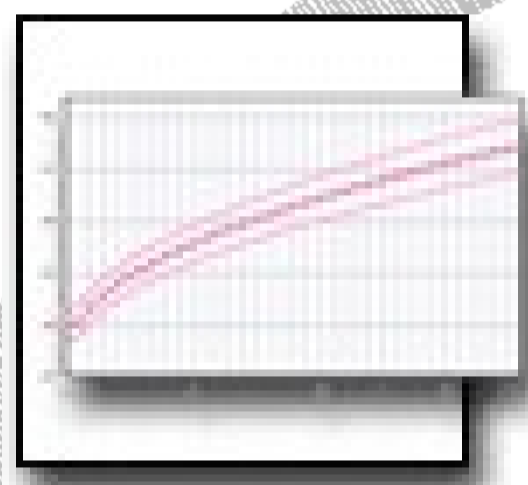
```
<node name="Controller" id="4">
  <socket/>
  <proxy name="Temp" id="1">
    <channel><release/></channel>
  </proxy>
  <handler><wcet/></handler>
</node>
```

Event Channels to receive in controller node

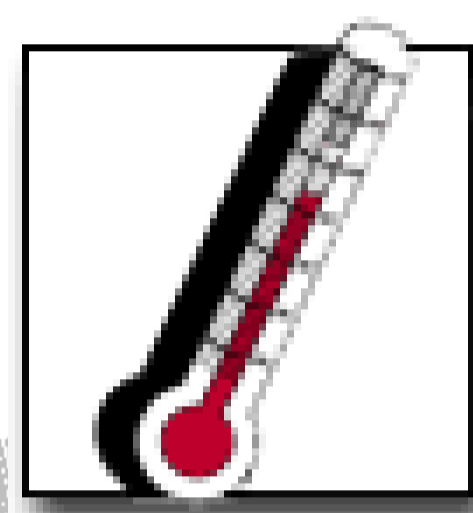


Test Scenario

2 Function checker



after fixed start time, periodic function check with large jitter, large period and deadline
action: adjust production parameters



1 Temperature sensor

after start periodic with low jitter, deadline < period
action: trigger heating or cooling



3 System health signal

periodic signal with deadline < period
action: shutdown and call for service

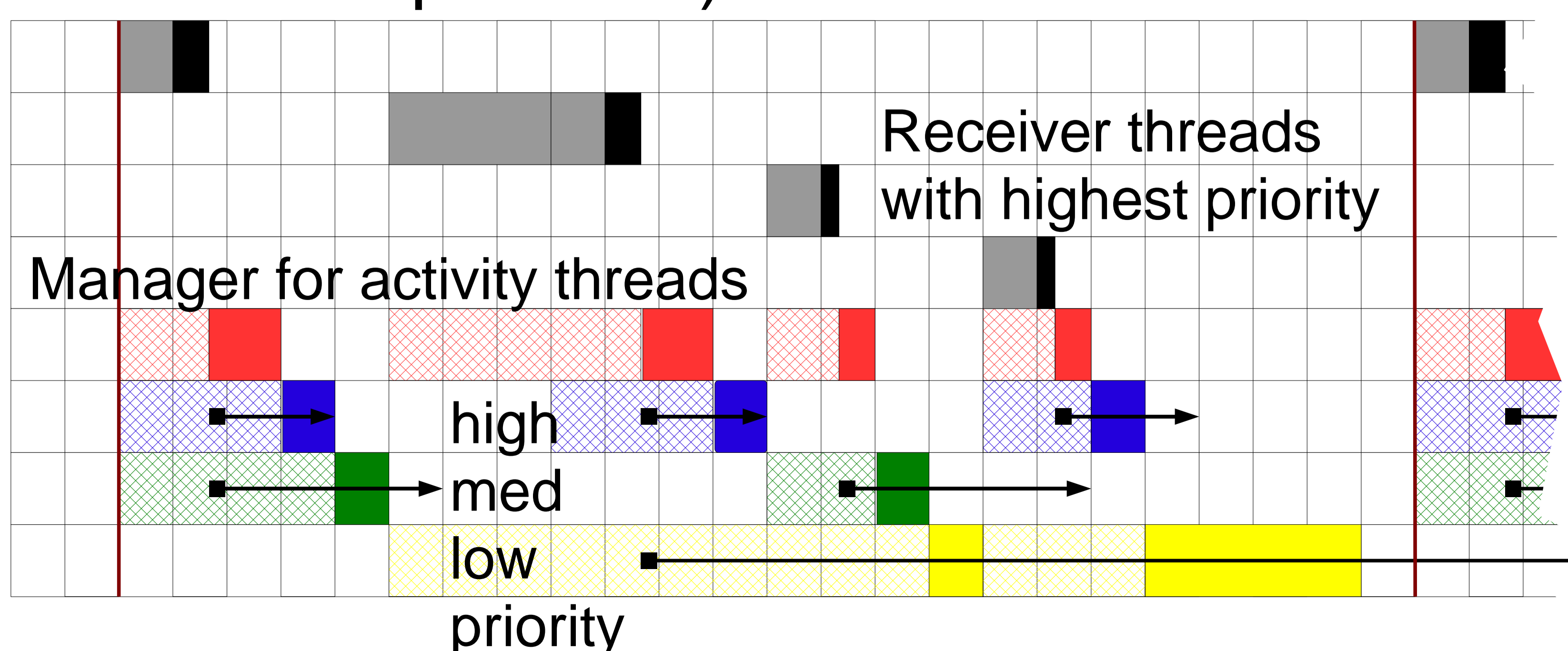
Real-Time Network
broadcast or multicast,
object serialization with
primitive values



Controller
to receive events
and execute actions
in real-time

Linear Model

with Receivers (highest priority), sporadic Manager, and Activity threads (deadline monotonic priorities)



Channel Parameters

	Temp 1	Check 2	Health 3
Period	600	1200	400
Deadline	300	1200	200
Start	100	350	100
Jitter	50	150	50
WCET	50	250	50

Runtime Requirements

Real-Time Java (RTSJ) with Fixed Priority Scheduling and Priority Ceiling

Analysis

./mast_analysis rma model.txt