

CLEARSY

Safety Solutions Designer

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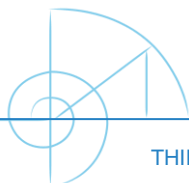
WWW.CLEARSY.COM

Hackathon
JUL2024

Subject Block Occupancy

PART IV

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Models

<https://github.com/CLEARSY/hackathon-2024>

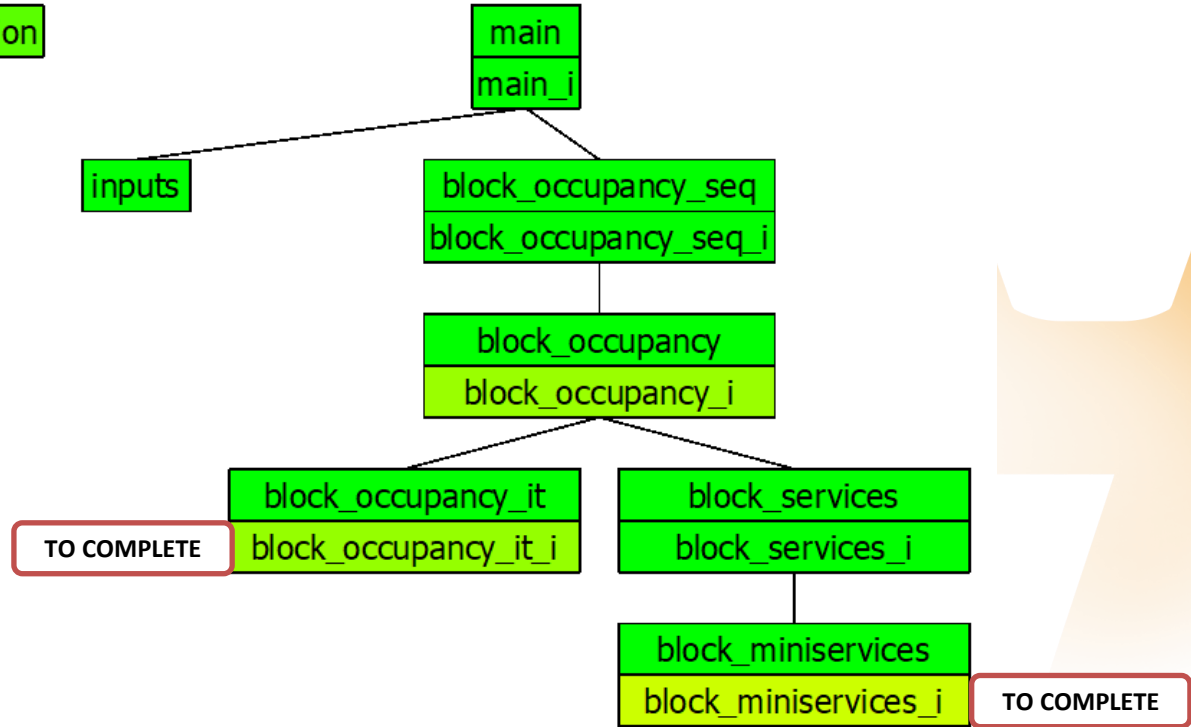
Get

- configuration.mch (updated with more operations)
- Block_occupancy_it_i.imp
- Block_miniservices_i.imp

B Project Architecture

UPDATED
CONTENT

configuration



Block_occupancy_it_i

- Implement INITIALISATION and OPERATIONS given that

SEES

configuration

CONCRETE_VARIABLES

rg_t_block_courant

INVARIANT

```
rg_t_block_courant : NAT &  
rg_t_block_courant : (0 .. size(bijection_t_block)) &  
block_to_treat = bijection_t_block[(1 .. rg_t_block_courant)]
```

Block_miniservices_i

- Implement INITIALISATION and OPERATIONS given that

SEES

configuration, inputs

CONCRETE_VARIABLES

tab_ob, tab_mb, tab_tdla

INVARIANT

```
tab_ob : t_block_i --> BOOL &  
tab_mb : t_block_i --> BOOL &  
tab_tdla : t_block_i --> BOOL &  
ob = (tab_ob~[{TRUE}] /\ t_block) &  
mb = (tab_mb~[{TRUE}] /\ t_block) &  
tdla = (tab_tdla~[{TRUE}] /\ t_block)
```

Activities

► Block_occupancy_it_i

▷ Implement (1)

read_mb,
unmask_block,
mask_block,
read_tdla,
alarm_block,
unalarm_block,
clear_tdla,
read_ob,
occ_block,
unocc_block,
is_free_block

► Block_occupancy_it_i

▷ Implement (2)

has_up_free_or_freetd,
has_downfree_or_freetd,
has_occupied_bd,
is_occ_unmasked_block,
is_init_or_unalarmed_block,
has_up_tr_ed,
has_down_tr_ed

► Block_miniservices_i

▷ Implement (2)

init_iteration_t_block,
iterate_t_block

Ranking

Block occupancy 3		31
	Complete block_occupancy_it_i simple OPERATIONS (11x)	11
	Complete block_occupancy_it_i complex OPERATIONS (7x)	14
	Complete block_miniservices_i OPERATIONS 2x	2
	model TC, POG, PR, B0	2
	explanation	2