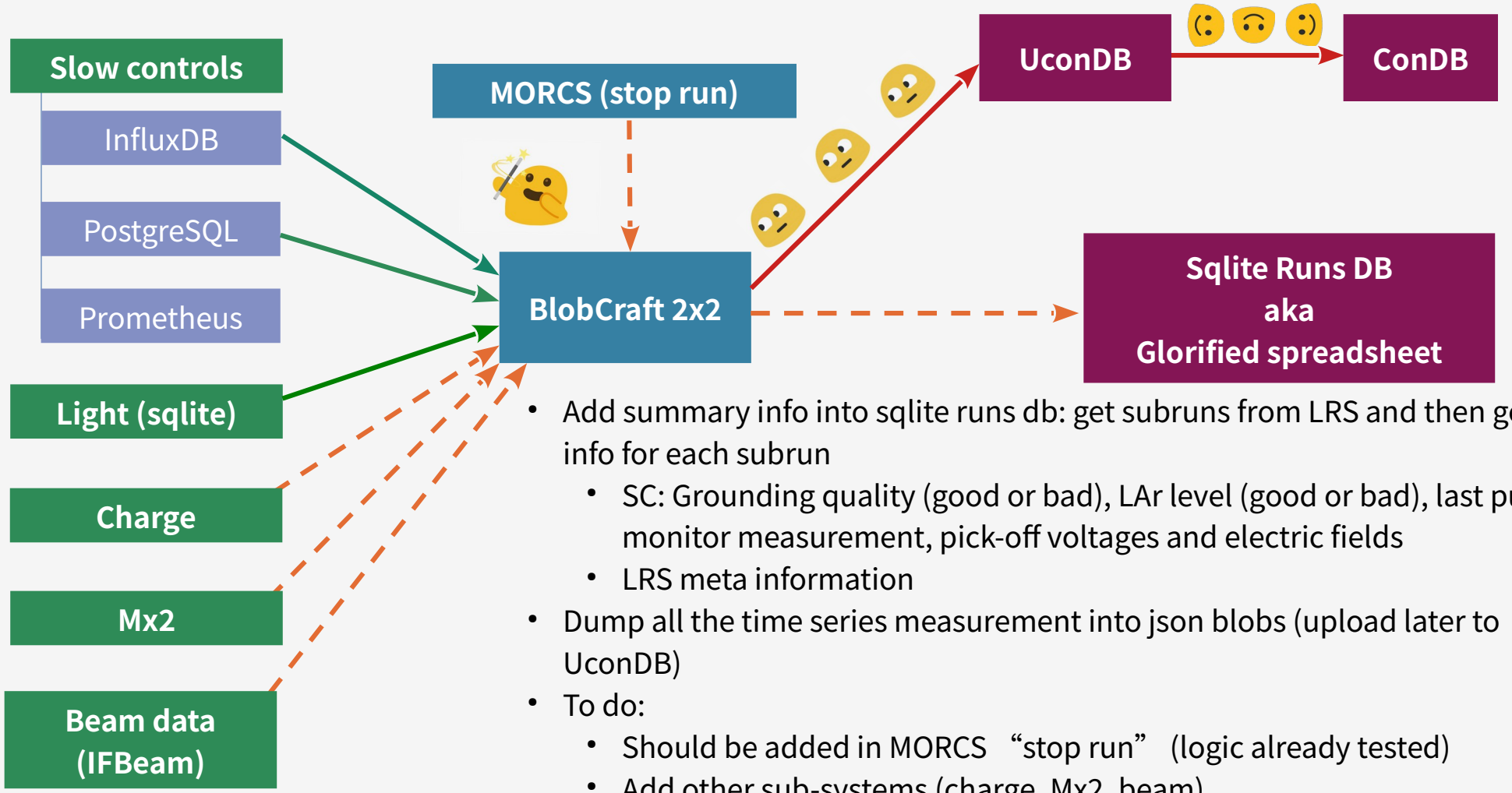
Towards a 2x2 Runs DB

Sindhu Kumaran, Matt Kramer

Proposed runs db workflow



- Add summary info into sqlite runs db: get subruns from LRS and then get SC info for each subrun
  - SC: Grounding quality (good or bad), LAr level (good or bad), last purity monitor measurement, pick-off voltages and electric fields
  - LRS meta information
- Dump all the time series measurement into json blobs (upload later to UconDB)
- To do:
  - Should be added in MORCS “stop run” (logic already tested)
  - Add other sub-systems (charge, Mx2, beam)
  - Upload to UConDB

Proposed runs db workflow

time_periods

id	t_start	t_end	run_num	crs_subrun	lrs_subrun	mx2_subrun
1			1	1	1	1
2			1	1	2	1
3			1	2	2	1

global_conditions

time_period_id	accel_clk_start	accel_clk_end	beam_power_avg	cryostat_pres	temperature	lar_level
1						
2						
3						

crs_conditions

run_num	crs_subrun	t_start	t_end	asic_config	periodic_reset	trigger_mode
1	1					
	2					

lrs_conditions

run_num	lrs_subrun	t_start	t_end	moas_version		
1	1					
	2					

mx2_conditions

run_num	mx2_subrun	t_start	t_end	run_mode		
1	1					

BlobCraft2x2: Query tool functionality

https://github.com/sindhu-ku/BlobCraft2x2/tree/main

Individual measurements (grab the measurement name from SC_parameters.yaml file for now). --subsample option also available for coarser measurements

```
SC_query --start="2024-05-27" --end="2024-05-28" --measurement="LAr_level"
```

“all” : Dump all measurements

```
influx_SC_db:
 - gizmo
 - module0_mpod0
 - module1_mpod0
 - module2_mpod1
 - module3_mpod1
 - HVmonitoring
 - VME_crate01
 - VME_crate23
 - ADC_crate
 - pt100
```

```
cryostat_tag_dict:
 cryostat_pressure: "34"
 LAr_level: "37"
```

```
purity_mon_variables:
 electron_lifetime: "prm_lifetime"
 impurities: "prm_impurities"
 anode_peak: "prm_anodepeak"
 cathode_peak: "prm_cathodepeak"
 anode_time: "prm_anodetime"
 cathode_time: "prm_cathodetime"
 anode_hv: "prm_anode_hv"
 cathode_hv: "prm_cathode_hv"
 anodegrid_hv: "prm_anodegrid_hv"
```

Questions

- What information do we need for the beam?
  - Summary→ what goes here?
  - Detailed spill by spill information to be merged with flow?
- LRS summary: do we need more than just the meta information (currently all info from summary table and moas versions)? Eg. SiPM_bias of all channels? VGA gain? (moas channels)
- Slow Controls:
  - Have we decided on the gizmo impedance and LAr level thresholds to tag a run as good/bad?
  - From cryostat, we have cryostat pressure and LAr level. Do we need more? (should ask Brandon)
  - Do we need any information from Prometheus at all? No infrastructure for this currently