

25th February 2015

attending: Scott Daniel, Darko Jevremovic, Michael Reuter, Rahul Biswas, Simon Krughoff, Veljko Vujcic, Chris Walter, Peter Yoachim, Cathy Petry, Zeljko Ivezić, Kem Cook, Andy Connolly, Francisco, Chuck Claver, Lynne Jones

Agenda:

- We will focus on the face-to-face in March and go over
 - start and end times
 - scheduler workshop (ajc)
 - attendees
 - Chris Stubbs and student
 - Robert Lupton
 - Robert Vanderbie (does scheduling from CS perspective)
 - Eric Saunders (experience at describing science proposals)
 - ~~Mark Johnson cannot make it~~; recommended Mark Guliano (writing scheduler for JWST)
 - ~~Tony Barrett~~
 - open to anyone within the project (until we get to ~25 people); anyone from Simulations, OpSim, OCS is welcome and encouraged to come
 - agenda and goals
 - Kem and Francisco should come up with a few documents to give external people a sense of what the Scheduler inside OpSim is about.
 - Kem: "They need to know that our current set of algorithms comes very close to what we want." We should give them a summary of the simulations we have done and what we need. (Tier 1?)
 - A document on rolling cadence?
 - Start with 1/2 day of presentations on what LSST and OpSim are
 - Overview of LSST and OpSim (Kem)
 - Presentation on science requirements (what is in the SRD; what challenges are we facing) (Zeljko)
 - What is the Scheduler currently doing? What are our plans (Francisco)
 - Overview of MAF (Lynne or Peter)
 - Then have external people give presentations on how other projects do their scheduling
 - Lessons learned from scheduler development at Las Cumbres (Saunders)
 - Lessons learned from scheduler development for JWST (Giuliano)
 - Schedulers in operations research (Vanderbei)
 - 2nd day: discussions on the following four questions based on external people's past experiences
 - (small groups or plenary sessions? Andy, Kem, Lynne, and Michael think we should have plenary sessions.)
 - Talk about scheduling algorithms
 - Greedy approaches? How optimize?
 - Kem and Francisco: what questions do you want addressed here?
 - Development of metrics
 - How do we turn these into a benefit function to trade-off with the cost function?
 - Lynne and Andy: what questions should be asked here?
 - Grammar (do we need a better grammar to describe proposals?)
 - Michael: What questions should be asked here?
 - Optimization of a single cost function: Is that realistic or not?
 - Zeljko: what questions
 - Global meeting will start early on Monday. UW group should fly in on Sunday (start 9am Monday)
 - End by noon on Friday.
 - Friday morning will be a de-brief on Scheduler workshop and hacks
- hacks we should work on (you should have at least one to propose at the meeting)
 - Kem (+1 for George): Michael and Francisco should work on filter control parameters.
 - Kem: We need to understand how to optimize rolling cadences. (+1 cathy)
 - Kem (+1 for George, +1 Cathy, +1 Scott): Work needs to be done on MAF to understand transients in the context of rolling cadences. Need to optimize a MAF transient metric.
 - Lynne: Should this be in another driver (not SStar)? Build a Science Analysis driver
 - Kem: implement pex_config in a user-friendly way. (+1 cathy, +1 Michael, +1 Scott)
 - Kem: pull out cloud and seeing tables. Have them talk over DDS to Opsim.
 - Lynne: Build a Science Analysis driver. Remove SStar and replace with first look analysis, SRD-level analysis, then wider science analysis.
 - Need to talk to Kem and Cathy about what a first look analysis would need.
 - +1 from Peter, 1 ajc, +1 Cathy, +1 Michael, +1 Scott
 - George: Consolidate SRD metrics and must meet limits for those metrics, preferably before the Scheduler Workshop

- Lynne: Build in a benefit function (i.e. prioritize low airmass feels or look through filters with the lowest sky brightness).
 - possibly should wait until after Scheduling workshop (+1 PY-maybe this is just getting a more in-depth look at the Opsim cost function—do we have any tools to visualize the cost function?)
- Lynne: figure out use cases for something that makes run-to-run comparisons automatically. (+1 Cathy, +1 PY)
- Peter: demonstrate progress on sky brightness calculator. (+1 ajc)
- Peter: make sure we can combine multiple outputs into a single display. (does this refer to the movies? -Cathy. This is related to breaking up the SSTAR config file, I want to be sure that we can dump the results from different configs into the same output directory without problems. -PY)
- Peter: need rotTelPos and rotSkyPos back in the OpSim output.
- Scott: (+1, Rahul) reconcile fact that OpSim pointings are for only one filter while catalogs simulate photometry for all filters.
 - A part of this is having a discussion about what we want the catalogs to be used for. They are currently very specialized to act as PhoSim input catalogs. That may not be the most generally useful application. (+1 ajc)
 - Maybe this already exists elsewhere, but I would like to plug in Opsim + approximate camera size to SN catalogs to simulate, say, a season.
- Darko: Put alert stream in Git and JIRA (+1 ajc, +1 Michael, +1 PY)
- Darko: add UCDs to database.
- Darko: get interface to PhoSim or GalSim to generate simulated cut-out that comes with alert stream.
- Michael (+1 for George, +1 ajc, +1 Michael): need to get DDS to work. (Work with Dave Mills)
- Michael: continue to review OpSim design.
- ~~Michael: go from generating catalogs using photons to generating an image. (George: Isn't this the same as the training session on "pointings to images"?)~~
- Francisco: emphasize the boundaries of all of the components of the simulation code.
- Cathy (+1 for George +1 Cathy): need standard pipeline to perform and analyze and compare OpSim runs
- Chuck: both sky brightness and seeing feeds into simulations (using Peter's model) could be implemented
- areas we should have training sessions on
 - **Michael (+1 for George, +1 Rahul): how to we go from pointings to images (end-to-end simulation): (Scott?)**
 - **Scott: Would this be more useful as a presentation, rather than a hack (since code to do this already exists; it's just not transparent how to use it)?**
 - **Yes I think this would be a presentation and go opsim pointing to phosim and opsim pointing to galsim and then DM if we have time**
 - **Presentation on the OCS so that the group understands how it fits in (Francisco?)**

We will then go back to a couple of items we ran out of time

- feedback from DESC (Scott)
 - lots of code duplication going on (working groups doing what we have already done with OpSim/CatSim)
 - Simon: maybe have something like the Cadence Workshop for OpSim/CatSim at either DESC or All Hands so that people know the code is out there and what it an do
 - Chris: Not everyone understands what all the pieces of code do and how they fit together.
 - What do all the pieces of the stack do? Which pieces can stand alone? What are all the different kinds of output that you can get without running the full OpSim->CatSim->MAF pipeline
 - Rahul: Make functionality as stand-alone as possible so that people can only grab the pieces of software they want a la carte.
 - Document EUPS so that people know how to install only what they want
 - Look into further breaking up dependencies (can we get DM to separate out the things we need so we don't, for example, install all of afw when we just want cameraGeom)
 - Develop more working examples so that people can see at a granular level what they can do using just part of the code (and how to get just that part of the code).
 - Renaming the Scheduler:
 - Andy: "Whenever we discuss the scheduler, people are unsure whether we mean the OCS or the brain that makes the decisions."
 - Analogous to DM confusion between "sources" and "objects."
 - Kem: OCS group is adamant that "the thing in the blue box in the diagram" should be called the Scheduler.
 - OCS is all the plumbing around the Scheduler.
 - Chuck: our definitions are pretty set in stone. We need to be more consistent in how we use terminology. Should we develop a glossary of terms?
- new opsim machine

