1) I was under the impression that SSD -->SST was for all the code, so if
it is the case, that would be a first thing to do before changing/implementing new features

2) the SSD hit structure does not need to be reshape/change (to my point
of view)
The reconstruction is done wafer by wafer, and at each step a class is used
a) StSsdStrip --> regrouped later in StSsdStripList per wafer
b) StSsdCluster --> regrouped later in StSsdClusterList per wafer
c) StSsdPoint --> regrouped later in StSsdPointList per wafer
d) StSsdPointList --> StSsdHit

These are local to the SSD code, only StSsdHit is written into StEvent

3) As Spiros mentioned, we tried the 1 side hit reconstruction. I would
suggest to restart from scratch (it was an afterburner method)
The idea is to allow hits with only the information of clusters on 1 side.
That means hit errors will be increased to take into account of the
non-matching.
There is a useful paper where the hit covariance matrix is derived for
single and double sided silicon detectors :
V. Karimaeki, Hit covariance formalism for stereo detectors. Nucl. Instr.
and Meth. A374 (1996) 367-370.

Also we may look at other cluster finder algorithm. Right now it only uses
a center of gravity method to find the central strip in a cluster (there
is some methods to do cluster splitting)
For example algorithms taking into account the shape of the cluster :
R. Turchetta, Spatial resolution of silicon microstrip detectors, Nucl.
Instr. and Meth. A335 (1993)44-58

I suggest Long to read the Star Note 427
https://drupal.star.bnl.gov/STAR/starnotes/public/sn0427
It is quite old now but the general ideas of the reconstruction in

SSD are
there (and as they are implementing in the code)

4) raw data to hits.
The SSDReader will have for sure to be updated. It used an old configuration based on the TPC readout (loop over RDO, loop over mezzanine, loop over aspics) and from what I understand, the new SSD RDO
are similar to the PXL RDO's.
Torsten and Luis (LBNL engineers) are this week at BNL but I guess will be
busy with testing. Anyway a discussion with them might be helpful.

5) simulation
Slow simulator fine tuning : it uses parameters from beam test of the A128
chip that equipped the SSD. (mostly for charge sharing btw strips)
Some details are here :
https://drupal.star.bnl.gov/STAR/blog-entry/bouchet/2008/may/19/simulation-charge-sharing

I'm not sure it needs a change but we may look at it too.

6) Calibration, pedestal
The main calibration is the gain btw strips on P and N sides. The thing
here is that differences btw electronics of P and N sides strips make the
charge correlation slightly deviated from a ratio =1 (if a particle
crosses a sensor, we may expect the same amount of charge on both sides)
We were using pulser runs to do this and a maker exists (but not in CVS).
A Gain Table also exists.

Another big piece of the calibration is the Lorentz angle. We need a
better understanding of its impact on the hit "smearing"

Pedestal : for run 7 we were saving "almost" all pedestal runs. When we
tried to insert them in DB, it collapsed the STAR Db (too many rows)
http://www.star.bnl.gov/public/ssd/STAR_informatique/ssd_NoiseTable.html
I changed at that time the format of the table but apparently

(from what
Jerome said last month) it may need to be revisited

7) online plots : they exist but need to be revisited too.
online :
http://www.star.bnl.gov/public/ssd/STAR_operations/ssd_onlineQA_plots.html
offline QA :
http://www.star.bnl.gov/public/ssd/STAR_informatique/ssd_offlineQA_plots.html