Algorithm scaling for ASKAP and SKA

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Algorithms for data processing for ASKAP have been forced to change as the scale of processing has increased.
Since 2007, we have implemented 4 substantial changes to our wide field imaging algorithms.
We expect to require one or two more changes for full ASKAP processing.
Without these changes, we could not expect to meet the resource constraints of 10000 cores each with 2GB memory.
The same will be true for SKA but only more so - memory per core will continue to shrink and the programming model with change, probably substantially over the pre-construction and construction phases.
I will describe our ASKAP experience and speculate over changes required for SKA-scale processing.

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