



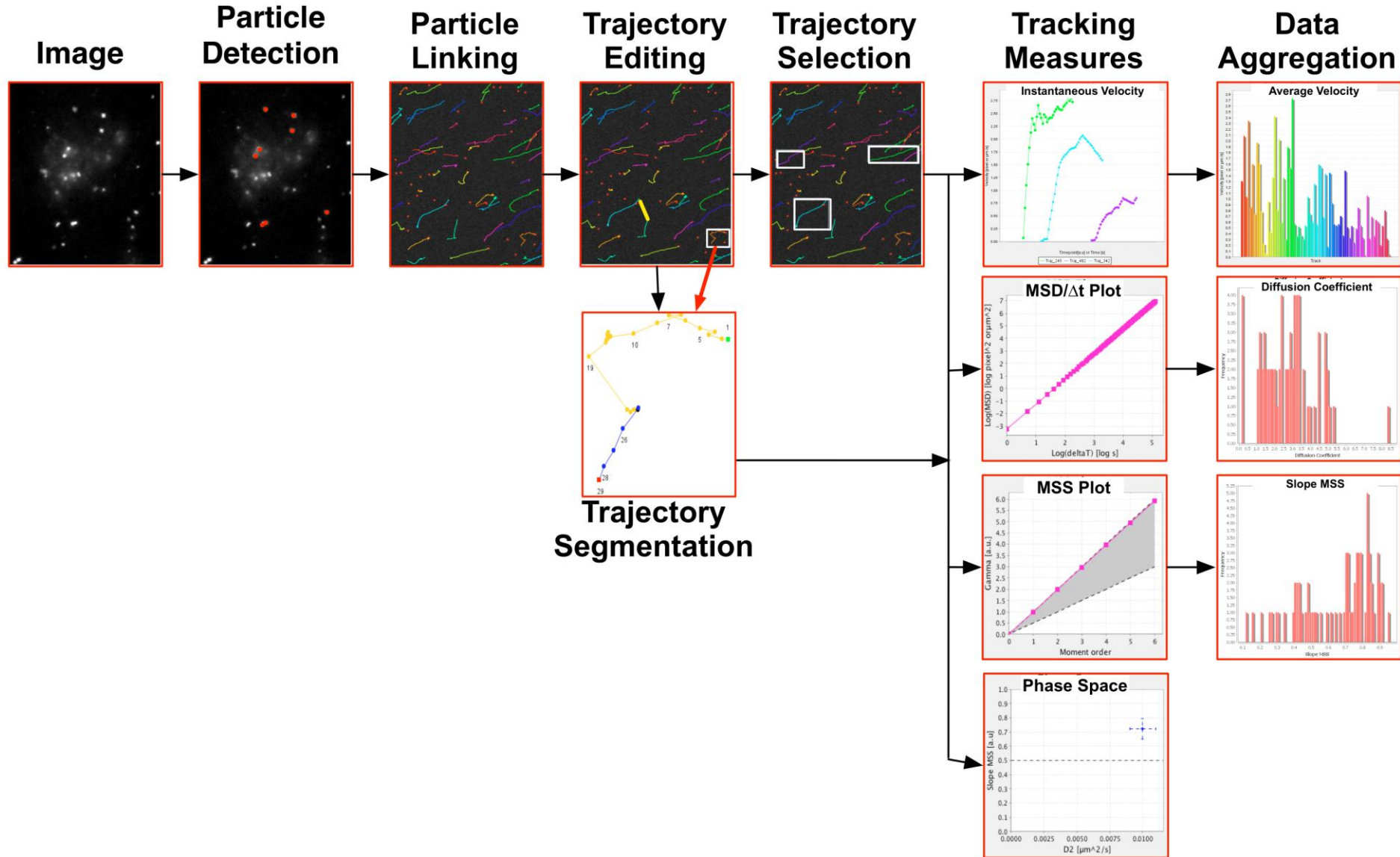
OMEGA: AN OPEN SOURCE ENVIRONMENT TO FACILITATE MOTION ANALYSIS, ERROR PROPAGATION AND THE SHARING OF RESULTS

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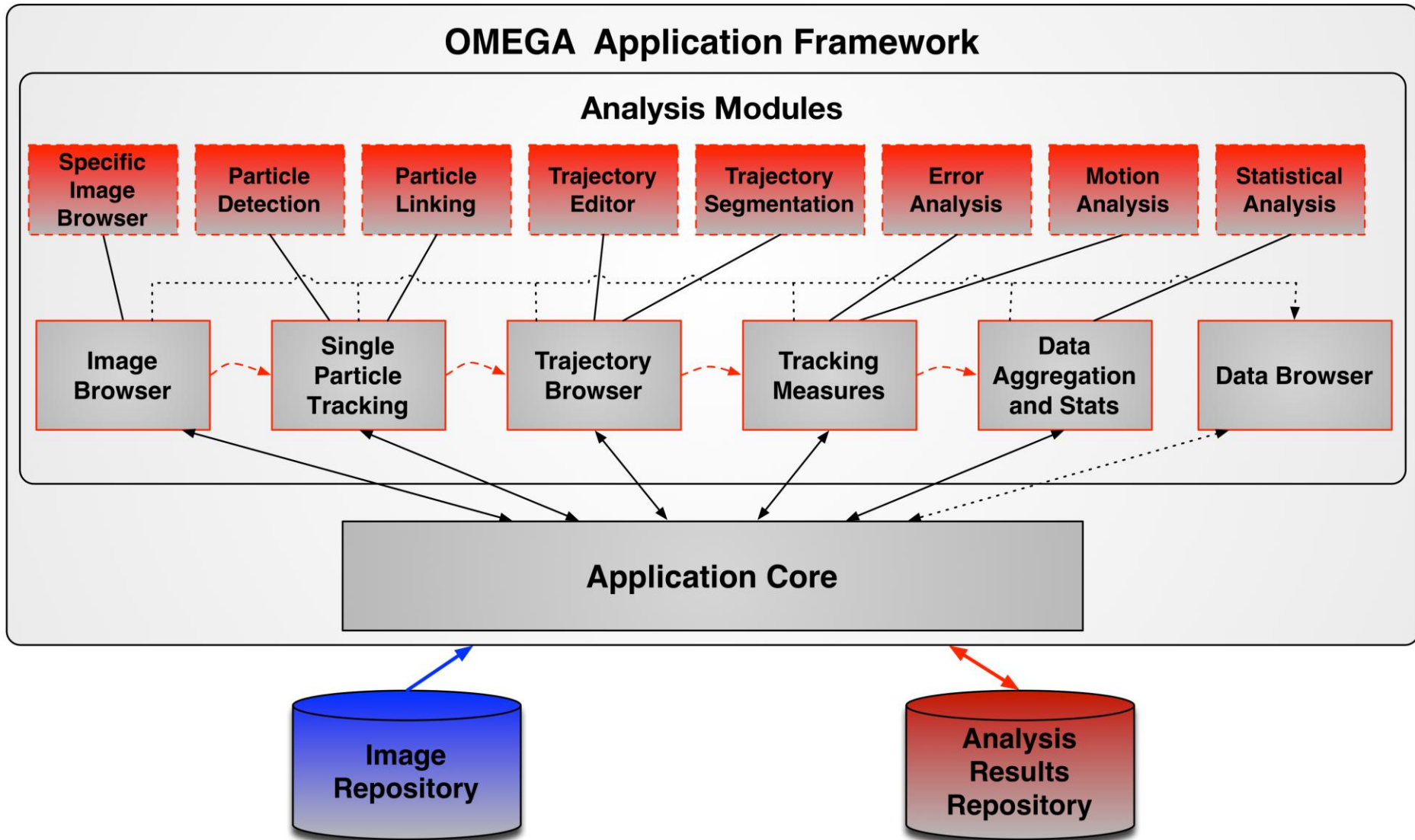
10th Annual OME User's Meeting, Paris, June 2nd 2015

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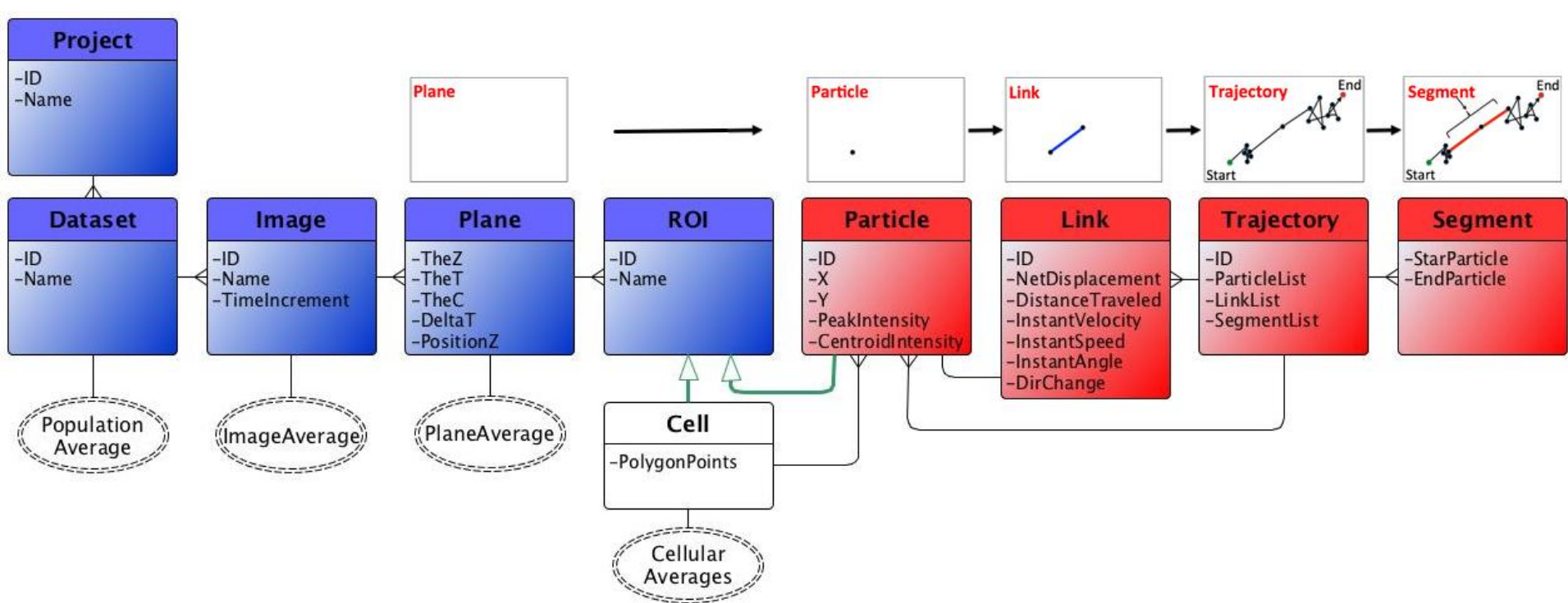
Single particle tracking and motion analysis workflow in OMEGA



OMEGA modular architecture which facilitates interoperability and expandability

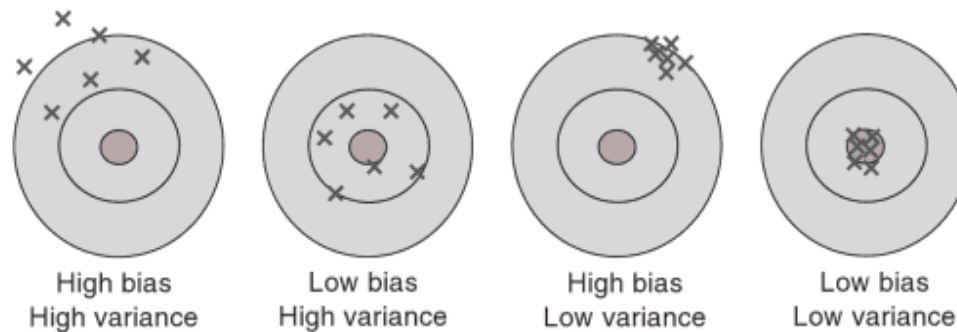


OMEGA is based on a Minimum Information compliant data model for particle tracking and motion analysis results



What are the sources of error in motion analysis?

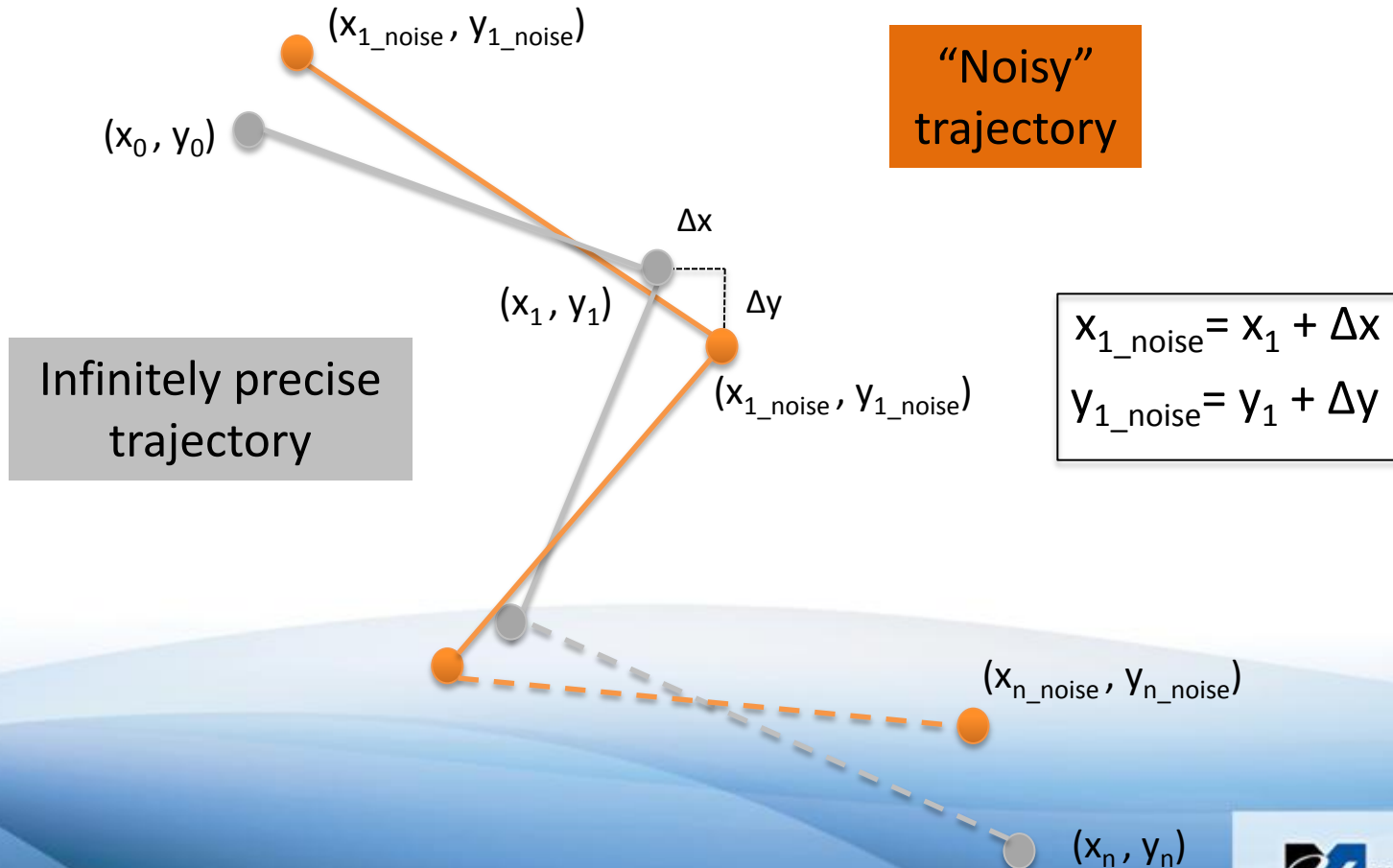
1) Localization error: inversely proportional to PRECISION and ACCURACY



2) Sampling error: the shorter the trajectory (i.e. the fewer detected points) the more likely one will make an error in calculating metrics that describe the type of motion

Simulating the effect of position error on artificial trajectories

When simulating the effect of position error on artificial trajectories, we sample uniformly at random directly from distributions of empirically observed x and y offsets, to “modify” the position of each point along the particle path





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