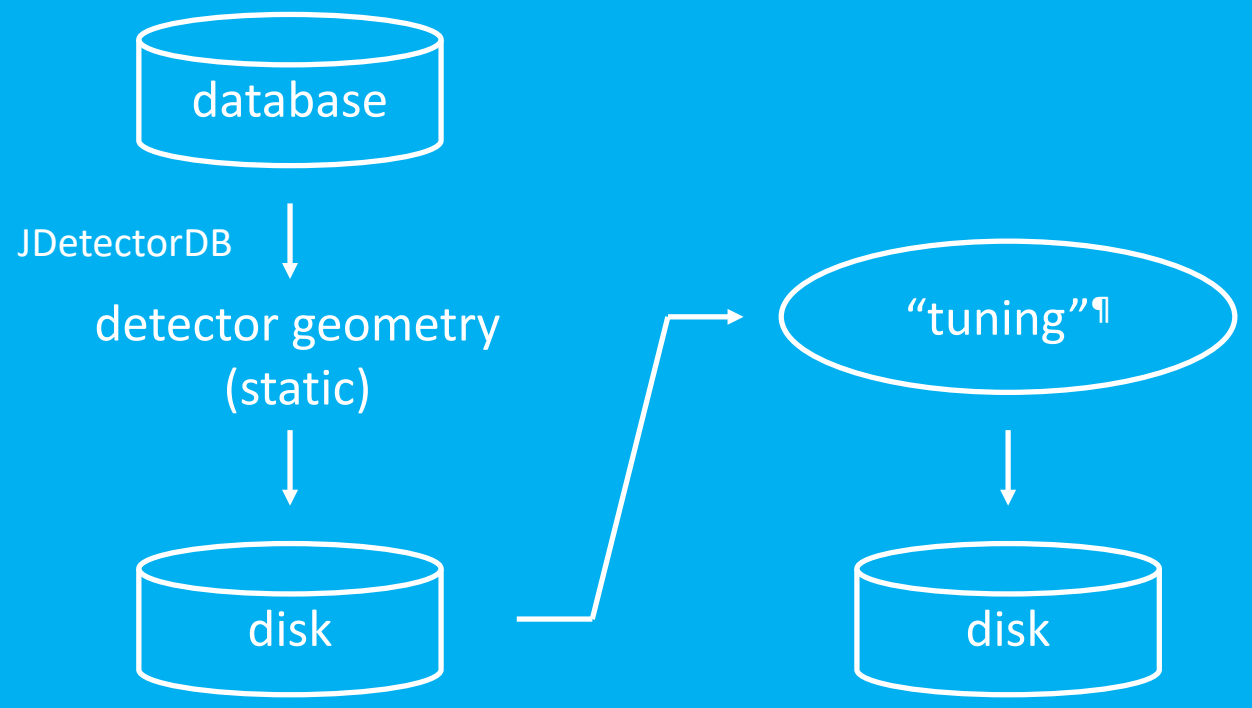
Jpp – dynamic position & orientation calibration

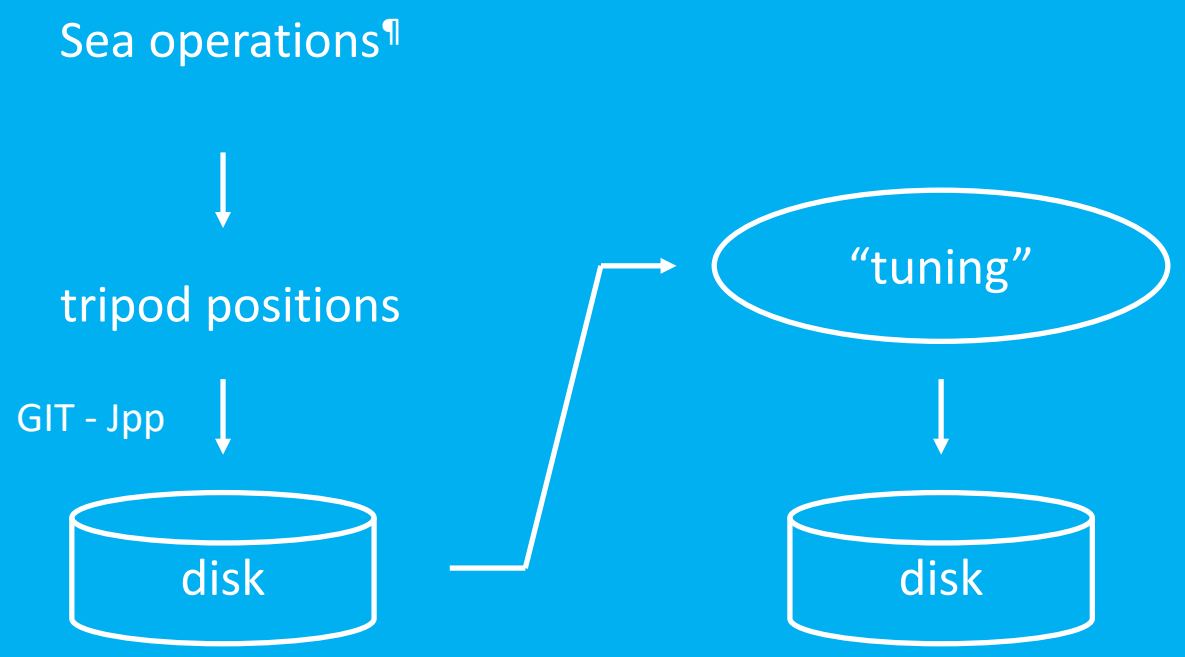
M. de Jong

Step (1a/4): Detector geometry



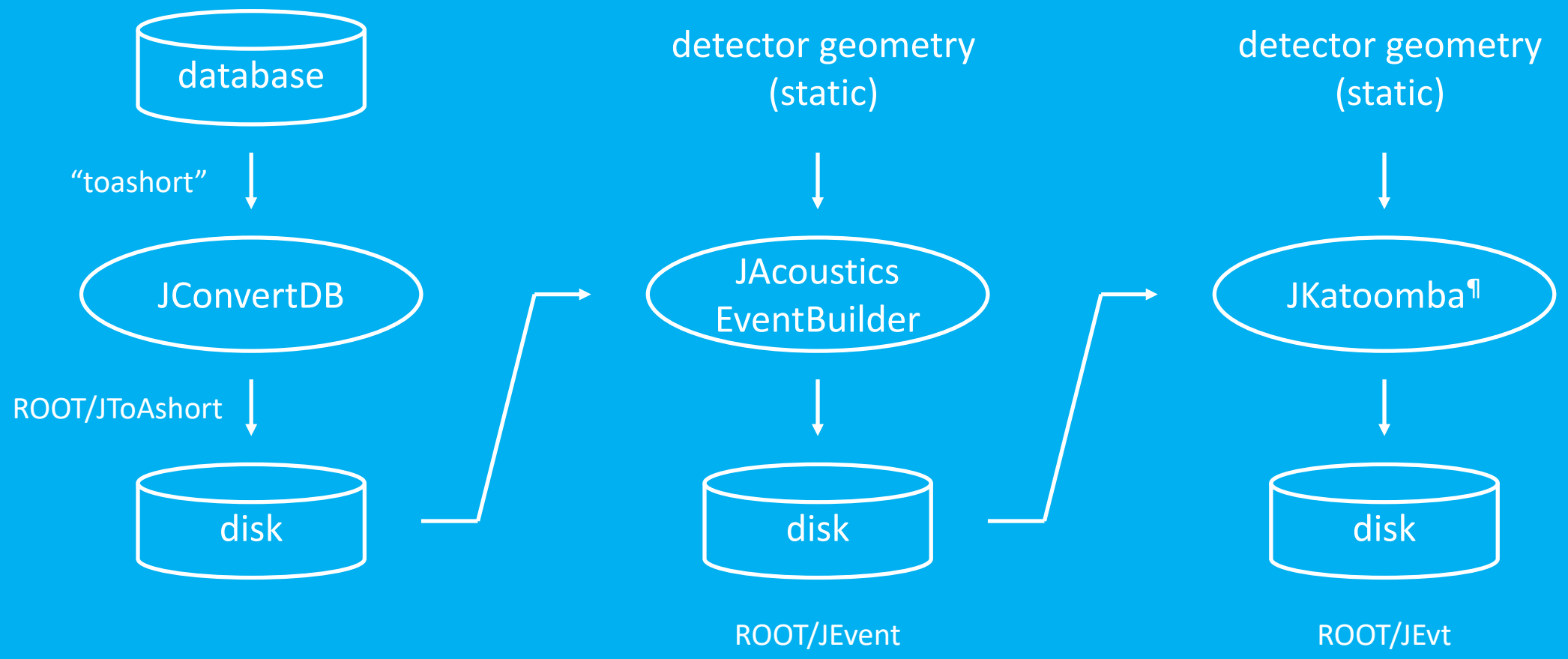
¶ See presentation at the [pre-]collaboration meeting 5–16 October 2020.

Step (1b/4): Tripod positions



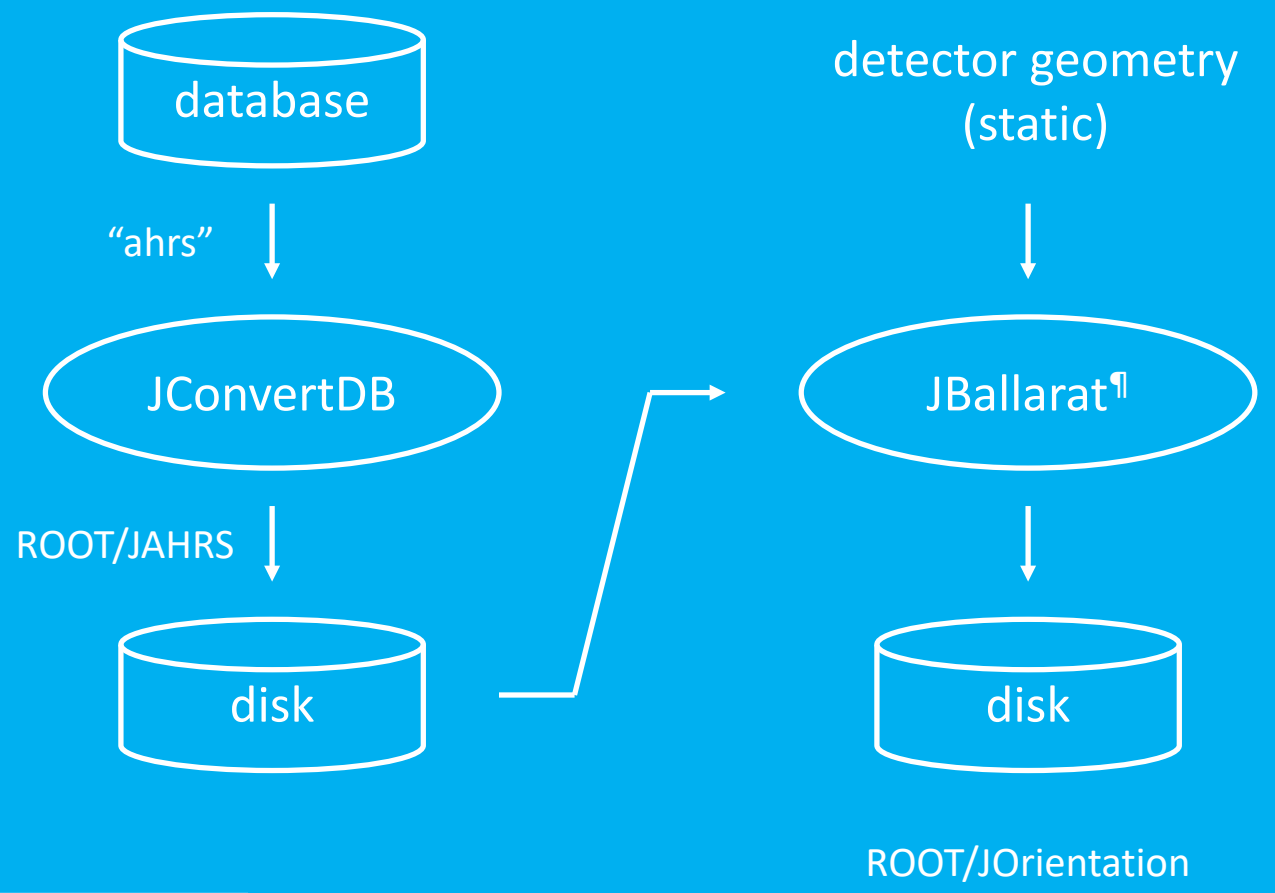
¶ See Positioning_Elements.pdf (km3net.de).

Step (2/4): Processing of acoustic data



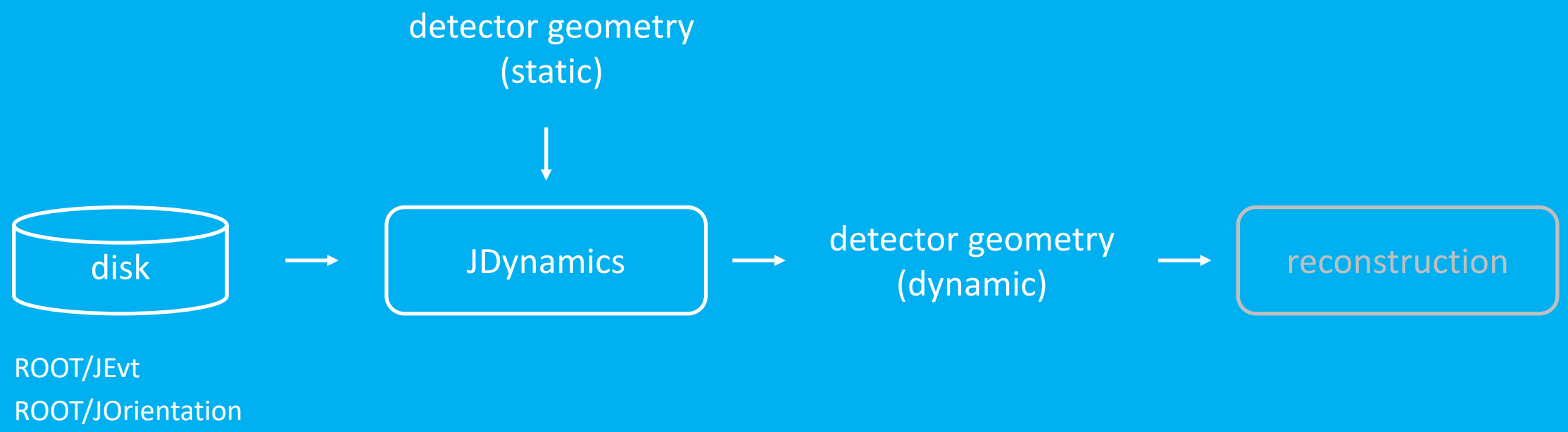
¶ Katoomba is the name of a small town in the Blue Mountains, Australia.

Step (3/4): Processing of compass data



¶ Ballarat is the name of a previous goldminers town in Victoria, Australia.

Step (4/4): Application



Implementation

```
JDynamics(const JDetector&  detector,        // detector geometry (static)
          const double      Tmax_s);         // applicability period

void load(JObjectIterator_t& input);         // load calibration data

const JDetector& operator()(const double t1_s);   // calibrated detector at given time
```

Example

```
int main(…)
{
        JMultipleFileScanner<JTYPELIST< JCOMPASS::JOrientation,
                                        JACOUSTICS::JEvt>::typelist> inputFile;

        JDetector detector;

        load(detectorFile, detector);

        JDynamics dynamics(detector, Tmax_s);

        dynamics.load(inputFile);
}
```

Summary & Outlook

- Integral design of dynamic position & orientation calibration
  - tuning procedure in place
  - data processing procedure in place
  - implementation in place
    - ready for integration into reconstruction (and other) applications