Practical Session on Calibrators

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1. Pick a (your favorite) science object, and check its characteristics in SIMBAD (coordinates, spectral type, K and N magnitudes)
   Ideas: NGC 1068, Circinus, Cen A
   http://cdsweb.u-strasbg.fr/

2. Pick an instrument and a baseline. For example AMBER UT1-UT2-UT4 and MIDI UT1-UT4.

3. Look for calibrators for this scientific object using CalVin
   http://www.eso.org/observing/etc
   - Check which calibrators are suitable following the general requirements (close in position, point-like source or known accurate diameter, close in magnitude, close in color).
   - Which calibrator is best suited based on each single of the different requirements ?

4. You have suitable calibrators. Now the calibrators (as well as the science target) have to follow some more observational constraints.
   The list of constraints and the information you have to enter for your observation is given at http://www.eso.org/observing/p2pp/

   - LST constraint
     - For each VLTI observation, a feasible range of the local sidereal time (LST) has to be specified.
       - for ex. you want HA -1 to +1 , your target has a RA of 9, the LST you specify is 8 to 10 (HA=LST-RA)
       - the LST range of the calibrator has to last from 30 min before that of the science target to 30 min after that of the science target. For the example above you have to find a calibrator with a feasible LST range of 7h30 to 10h30.

   - Delay Line
     - You have to check that that the optical path difference to be corrected by the DLs is within a certain feasible range during the full LST range.

   - Shadowing
     - You have to check that there is no shadowing of your targets during the chosen LST range (some AT stations may be shadowed by UTs).

   - Estimate of the Visibility for the chosen configuration → for the calibrators the diameter and its associated error is given by CalVin

5. Check all this and more using VisCalc
   http://www.eso.org/observing/etc

   - Enter your science target information to check DL and shadowing constraints.
   - Do the same for your calibrator to check if it is observable at the requested LST.

6. Change the configuration: for example AMBER A0-D0-H0 and MIDI A0-D0, check the visibilities for the calibrators, check the shadowing and the delay line limits.

7. You can also use the expert versions of both tools which give you more options and which are independent of the currently offered modes and baselines.

8. You can also use the ASPRO tool to search for Calibrators and get the visibility
   http://www.mariotti.fr/aspro_page.htm

SUMMARY

You will normally not be able to fulfill all standard requirements.
You will have to relax the requirements.

Measure T at the same time	Measure it close in time
Measure T at the same position	Measure it close on sky
Use a similar magnitude	Relax to $\Delta K <= 1$ (AMBER)
	Use a brighter calibrator (MIDI)
Use an unresolved star	Use one with well-known Θ
Use a similar spectral shape	Relax to a different type

etc.

It will depend on your scientific objectives and the instrument characteristics which requirements can be more relaxed and which less.