calibrationlistmanager	Data manager for calibrationlist data items
calibrationmanager	Data manager for calibration data items
freqselmanager	Data manager for freqsel data items
map	Combined synthesis calibration and imaging
maskmanager	Data manager for mask items
modellistmanager	Data manager for modellist data items
modelmanager	Data manager for model data items
selectionmanager	Data manager for MS selection data items
solverlistmanager	Data manager for solverlist data items
solvermanager	Data manager for solver data items

1.6.1 map - Tool

Package	synthesis
Module	map

Combined synthesis calibration and imaging

Constructors

map	Create a map tool from an AIPS++ Measurement Set

Functions

applycal	Apply existing calibration to a Measurement Set
makemap	Apply calibration and form an image
plotcal	Plot a calibration table
plotuv	Plot uv coverage
plotvis	Plot uv data
plotweights	Plot weights
sensitivity	Compute imaging sensitivity
solvecal	Solve for calibration components
summary	Print an MS summary
view	View associated images

Overview of map tool functions

- **Solve for calibration -** capabilities are provided to solve for uv-plane calibration components known to the calibrater tool. These include G, T, D, and B.
  - solvecal - solve for calibration components.

- **Apply calibration -** capabilities are provided to apply existing calibration tables.
  - applycal - apply calibration.
- **Imaging -** capabilities are provided to make synthesis images.
  - makemap - apply calibration and form a synthesis image.
- **Utilities -** general utilities are provided for visualization for associated images, uv-data and calibration solutions, and for general state information. These are methods contained from the lower level image, imager and calibrater tools directly.
  - plotuv - plot uv coverage.
  - plotvis - plot uv-data.
  - plotweights - plot weights.
  - summary - MS summary.
  - sensitivity - imaging sensitivity calculation.
  - plotcal - plot calibration solutions.
  - view - display associated images with the viewer.

map - Constructor

Package	synthesis
Module	map
Tool	map

Create a map tool from an AIPS++ Measurement Set

Synopsis
map(msfile)

Arguments

msfile	Input Measurement Set name Allowed:Table name

Returns
map

tool or fail

Description

This constructs (creates) a map tool from an input Measurement Set. The tool is then available to execute functions defined for the map tool.

Example

```
mymap := map('$MYDATA/data123.ms')
```

This creates a map tool attached to the uv-data in the Measurement Set named "data123.ms", located in the directory defined by the environment variable $MYDATA.

---

map.solvecal - Function

Package	synthesis
Module	map
Tool	map

Solve for calibration components

Synopsis
solvecal(sourcemodels, selection, calibration, solvers)

Arguments

sourcemodels	List of source models Allowed Modellist Default unset
selection	MS data selection Allowed Selection Default unset
calibration	List of applied calibration Allowed Calibrationlist Default unset
solvers	List of calibration solvers Allowed Solverlist Default unset

Returns
T or fail

Description

This function solves for a specified list of uv-plane calibration components using associated calibration solvers. A list of source models, held fixed, is required to compute the model visibilty used in forming χ^2 as used by the calibration solvers.

---

map.applycal - Function

Package	synthesis
Module	map
Tool	map

Apply existing calibration to a Measurement Set

Synopsis
applycal(selection, calibration)

Arguments

selection	MS data selection Allowed Selection Default unset
calibration	List of calibration to apply Allowed Calibrationlist Default unset

Returns
T or fail

Description

This function takes a specified list of calibration components, and applies them to the observed data in the Measurement Set, to compute the corrected data.

---

map.solvecal - Function

Package synthesis
Module map
Tool map

Solve for calibration components

Synopsis
solvecal(sourcemodels, selection, calibration, solvers)

Arguments

sourcemodels	List of source models Allowed Modellist Default unset
selection	MS data selection Allowed Selection Default unset
calibration	List of applied calibration Allowed Calibrationlist Default unset
solvers	List of calibration solvers Allowed Solverlist Default unset

Returns
T or fail

Description

This function solves for a specified list of uv-plane calibration components using associated calibration solvers. A list of source models, held fixed, is required to compute the model visibilty used in forming χ^2 as used by the calibration solvers.

---

map.makemap - Function

Package synthesis
Module map
Tool map

Apply calibration and form an image

Synopsis

makemap(selection, calibration, ftmachine, imagingfields, complist, weighting, restoringbeam)

Arguments

selection	MS data selection Allowed: Selection Default: unset
calibration	List of calibration to apply Allowed: Calibrationlist Default: unset
ftmachine	Fourier transform machine Allowed: Transform Default: unset
imagingfields	Imaging fields Allowed: Imagingfieldlist Default: unset
complist	Name of component list Allowed: String
weighting	Gridding weighting Allowed: Imagingweight Default: unset
restoringbeam	Restoring beam Allowed: Restoringbeam Default: unset

Returns

T or fail

Description

This function selects the MS data, applies calibration, and forms an image using the specified Fourier transform machine, list of imaging fields, a separate model component list, an imaging weighting scheme and a specified restoring beam. It combines calibration and imaging capabilities in these areas in the calibrater and imager tools.

---

map.view - Function

Package	synthesis
Module	map
Tool	map

View associated images

Synopsis
view(modelentry, type)

Arguments

modelentry	Imaging field name AllowedString
type	Image type Allowed:'model'|'mask'|'restored'|'residual' Default:'restored'

Returns
T or fail

Description

Display one of several image types associated with a model entry.

---

map.plotuv - Function

Package	synthesis
Module	map
Tool	map

Plot uv coverage

Synopsis
plotuv()

Description

A contained method from imager: plotuv.

---

map.plotvis - Function

Package	synthesis
Module	map
Tool	map

Plot uv data

Synopsis
plotvis()

Description

A contained method from imager: plotvis.

---

map.plotweights - Function

Package	synthesis
Module	map
Tool	map

Plot weights

Synopsis
plotweights()

Description

A contained method from imager: plotweights.

---

map.summary - Function

Package	synthesis
Module	map
Tool	map

Print an MS summary

Synopsis
summary()

Description

A contained method from imager: summary.

---

map.sensitivity - Function

Package	synthesis
Module	map
Tool	map

Compute imaging sensitivity

Synopsis
sensitivity()

Description

A contained method from imager: sensitivity.

---

map.plotcal - Function

Package	synthesis
Module	map
Tool	map

Plot a calibration table

Synopsis
plotcal()

Description