



User's Guide KALMAN

Quick Reference Guide

An overview of Kalman subsystems

Version : 1.3, November, 2010
Maintenance : see www.helpdeskwater.nl/waqua
Copyright : Rijkswaterstaat

CONTENTS

1	About the Quick Reference Guide	1
2	The Kalman Procedure	3
3	Waqua-with-Kalman.....	5

1 ABOUT THE QUICK REFERENCE GUIDE

The quick reference guide supports the user in running the KALMAN program. It globally describes the data flows, execution formats with parameter descriptions and additional exceptions when appropriate.

Chapter [2](#) contains the Quick Reference Guide for the KALMAN procedure and chapter [3](#) describes how to activate the Kalman filter in WAQUA.

2 THE KALMAN PROCEDURE

Purpose	The Kalman procedure enables the computation of the time-independent Kalman filter for a 2 dimensional curvilinear WAQUA model.	
Data flow	<u>Input files</u> SIMONA data storage file Control input file	<u>Output files</u> SIMONA data storage file Error and message file
Filenames	<u>Logical name</u> SIMONA data storage file Control input file Message file	<u>System name</u> SDS-<runid> user defined kalman-m.<runid>
File Description	<u>Logical name</u> SIMONA data storage file Control input file Message file	<u>Purpose</u> Storage of permanent data in SIMONA Control data for program KALMAN Error messages and diagnostics
User's Guide	See 'User's Guide KALMAN procedure'	
Test Input	Not yet available	
Exceptions	<ul style="list-style-type: none"> - The Kalman filter can only be computed for 2 dimensional spherical models in the current release. - Wind noise and boundary conditions can be estimated. - The SDS file may not be in use by another program (for instance RSDS) when the KALMAN program starts. 	

Format **kalman.pl** [-runid <runid>] [-confile <confile>] [-back <back>] [&]

Parameters

<u>parameter</u>	<u>meaning and values</u>
-runid	3-character code to identify the output files of a run.
-confile	filename of the KALMAN control input file.
-back	y(es): Program will be started in the background n(o): Program will be started in the foreground
&	Start procedure in the background.

- In case of a background run with **&**, **runid** and **confile** are obligatory parameters and **back** has no effect.
- In case of an interactive start of the run the procedure will prompt for the parameters mentioned above, excluding those which are already given in the run call. The parameters are checked before the process is started.

Notes

3 WAQUA-WITH-KALMAN

Purpose	Combine WAQUA's numerical approach to tidal predictions with a statistical approach in order to adapt the model to changing physical circumstances.	
Data flow	<u>Input files</u> SIMONA data storage file	<u>Output files</u> SIMONA data storage file
Filenames	<u>Logical name</u> WAQUA SDS file KALMAN SDS file (SVWP SDS file)	<u>System name</u> SDS-<runid WAQUA> SDS-<runid KALMAN> (SDS-<runid WAQWND>)
File Description	<u>Logical name</u> WAQUA SDS file KALMAN SDS file SVWP SDS file	<u>Purpose</u> Storage of permanent data in SIMONA: WAQUA data model data + Kalman filter space varying wind & pressure
User's Guide	See 'User's Guide WAQUA with Kalman filter'	
Test Input	Not yet available	
Exceptions	Only 2-dimensional spherical models are accepted.	
Format	See 'User's Guide WAQUA'	
Notes	With respect to the user interface, the difference in running WAQUA with or without Kalman filter is only found in the simulation input file. The mechanism is corresponding to that of activating space varying wind and pressure	