CSDS User Interface
ISDAT
cuitm User Manual

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with change bars for changes introduced in issue 2.0 and 2.1

Contents

1 Introduction

1.1 Intended readership

This manual is intended for the user of the ISDAT *cuitm* client within the CSDS User Interface ISDAT Client package.

1.2 Applicability of the manual

The current version of the document applies to the ISDAT version 2.2, delivered as release 4 within the CSDS User Interface Project. It is valid for UNIX, SUN Solaris workstations.

1.3 Purpose of the CSDS UI Data Manipulation software

The purpose of the CSDS User Interface Data Manipulation software package, of which *cuitm* is one component, is to provide the scientific community with software tools to manipulate and display Cluster CSDS summary and primary parameters. The *cuitm* client is a time manager that is used to coordinate the behaviour of an associated family of ISDAT clients.

1.4 How to use this document

This document consist of an overview of the software in order to familiarize the user with the capabilities provided. The User Instructions section (3) should be read in connection with the first hands-on encounter with the *cuitm*. For the experienced user, a User reference section (4) is provided. A complete list of error messages is provided in Appendix A.

1.5 Related documents

An overview of the CSDS UI ISDAT Server Package is given in [Ref. 2]. It is assumed that the reader is familiar with the information given in that manual. The installation of the ISDAT package is described in [Ref. 1].

1.6 Conventions and acronyms

In the following, we will use:

- *italics* to indicate exact names or expressions.
- Courier fonts to give command line expressions.
- > to indicate the terminal prompter.

Acronym	Meaning
ANSI	TBW
CDF	Common Data Format
CD-ROM	Compact Disc Read Only Memory
CSDS	Cluster Science data System
CUI	CSDS User Interface
IRF-U	Institutet för Rymdfysik, Uppsalaavdelningen
	Swedish Inst. of Space Phys., Uppsala Division
ISDAT	Interactive Science Data Analysis Tool
UI	User Interface
UR	User Requirement

Table 1: Acronyms and abbrieviations

Acronyms and abbreviations used are described in Table 1.

1.7 Problem reporting

Problems should be reported to the CSDS National Data Centre.

2 Overview of the CSDS UI ISDAT cuitm client

The scope of the CSDS UI ISDAT *cuitm* module is to provide a general purpose *time manager* for ISDAT. *Cuitm* is an ISDAT client that is used to coordinate the behavior of a family of associated clients (by clients in general, we understand analysis and display clients by which the user interacts with the CSDS UI ISDAT). It may be used to activate another client, to select a project or to select data file.

3 User Instructions

3.1 Getting started

The *cuitm* module can only be started if an ISDAT server is running on the server host. You can start *cuitm* from the CSDS User Interface Session Manager or from the command line by typing

```
cuitm
```

and return. However, in order to acquire the access code for the CSDS data bases at the CSDS National Data Centres, it has to be started via the CSDS User Interface session manager.

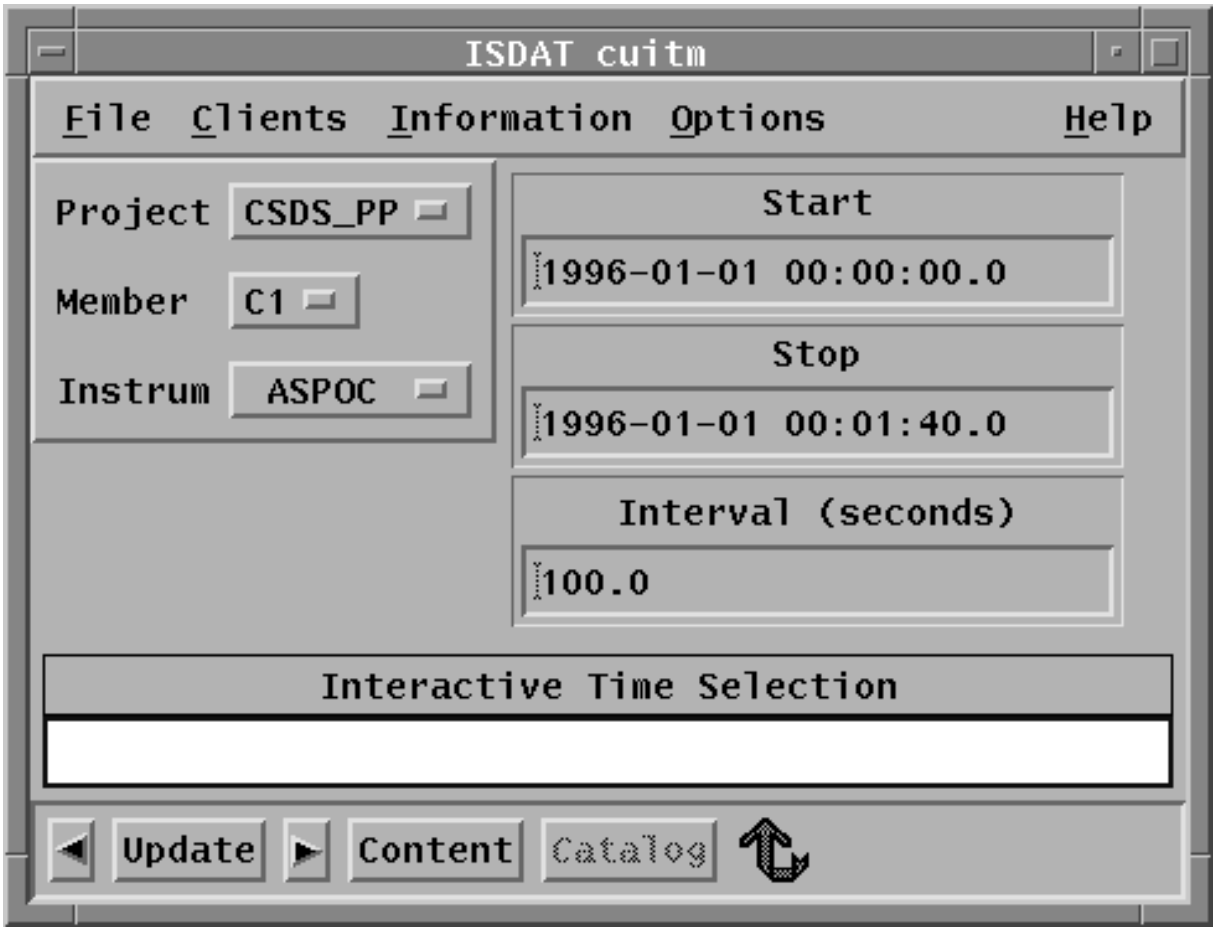

Figure 1: The cuitm window

3.2 Using the CSDS UI cuitm client

The *cuitm* window in its original configuration displays the following commands and informations to the user (Figure 1):

- The main Menu: The main menu bar contains the following fields:
  - *File* menu:
    - *Config*:
      - *Load*: is used for loading a configuration file. This configuration file is created when the user presses the *Config→Save* button. The configuration file is an ASCII file. When the *Load* button is pressed a *File Selection* dialog appears. The user selects the correct file and presses the *OK* button. When the configuration file is loaded the *cuitm* client gets the same configuration as when this file was stored.
      - *Save*: is used to save the complete status of the *cuitm* client to a file. This file is an ASCII file and is named the configuration file. When the *Save* button is pressed a *File Selection* window appears. The default filename is $HOME/cuitm.conf. This file is selected in the *Files*

panel and then the filename appears in the *Selection* line. The user presses the *OK* button to save the file. The program checks if the file name is valid (and not a directory). If the file already exists a warning dialog appears. The user then presses *OK* to overwrite or *Cancel*. All parameters are saved except *Interactive Time Selection*. The configuration files are ASCII files and can be interchanged between different users (e.g. with e-mail).

  - * *new_manager* (CTRL-N): to start a new manager to run simultaneously with the current manager. The new manager will connect to the current server.
  - * *new manager & database* (CTRL-L): start another manager and connect to an arbitrary ISDAT server. The user is asked to specify the new server in the format "host:server_no" or to confirm the default specification. The default server can be changed by setting the LOCAL_DATABASE environment variable.
  - * *exit*: to stop the current time manager including all its child-clients.

- *Clients* menu: This menu displays in different entries all clients registered at start time. You always find one entry *general* that has as sub-entries allgeneral clients (*meta* client for instance). You find also a list of project names with project specific clients as sub-entries. Click on the wanted client to start it.
- *Information*:
  - * *server* (CTRL-S): displays the current server name.
  - * *version*: gives the current CSDS UI version number and patch level.
- *Options*:
  - * *auto update* (CTRL-A): when the user enables auto update mechanism, all changes in time selection will automatically trigger an event *Update* sent to all child-clients.
  - * *step* (CTRL-T): displays the step time editor; Step value then supersedes the Interval value whith previous step, next step and continuous actions.
  - * *continuous* (CTRL-O): displays the continuous editor; when the user enables *Run* button, an update event is sent to all child-clients , from *Start* value to *Continuous* value with steps of *Step* value (if set) or *Interval*. The user can stop and resume the operation by pressing or releasing *Run* button.
- *Help*:
  - * *Help...*: displays helpful information.

- The specification Frame: The first action of the user is probably to select his *project*, one corresponding *member* and *instrument*. First of all, the user selects the *project* in the project list, then one of the selected *project member* in the member list

and one of the selected *member instrument* in the instrument list. The available instruments etc. may depend on the access rights of the user. The user can set the default start specification in the .isdat.client file (see [Ref. 2]).

- The time selection Frame: At start time, the time selection *Frame* displays the *Start*, *Interval* and *Stop* time fields. Additional *Step* and *Continuous* fields are displayed when corresponding *Options* are triggered from Options menu. The user can set the default times in the .isdat.client file.

  The search time start and stop times can be edited by using standard X-windows functions. The allowed time specification formats is essentially the *CCSDS ASCII Calendar Segmented Time Code* i.e.:

```
          YYYY-MM-DDThh:mm:ss.ddddZ

where: YYYY is the year with possible values 0001 - 9999
       MM is the month with possible values 01 - 12
       DD is the day with possible values 01-28, 29, 30, 0r 31
       T  is a date-time separator, always ASCII character T
       hh is the hour with possible values 00 - 23
       mm is the minute with possible values 00 - 59
       ss is the second with possible values 00 - 59
       dd is the fractions of seconds with possible values 0-9
       Z  is a mandatory terminator, always the ASCII character "Z"

In addition as deviations from the standard it is legal to replace "T" with a
space " ", and also make the trailing "Z" optional.  It would thus be legal to
write:

          1996-02-22 13:47:32.247 or
          1996-02-22T13:47:32.247Z or
          1996-02-22 13:47:32.2470000
```

  - *Start* field: start time for the next data interval.
  - *Interval* field: interval for the next data interval.
  - *Stop* field: stop time for the next data interval. It is automatically updated to show start + interval .
  - *Step* field: step value.
  - *Continuous* field: end time when continuous mode is set.

- The Interactive Time Selection Frame: At start time, the frame is empty. When the user selects a data interval from the *Database Content List* or from the *CSDS Catalog List*, a symbolic line is displayed to represent segments of available data sets within the selected interval. By selecting different contiguous segments with the mouse, the user updates the next data interval. The current interval is shown as a separate (blue) line in the Interactive time selection area above the symbolic time line, see Figure 2. The symbolic and selection lines are updated when a new

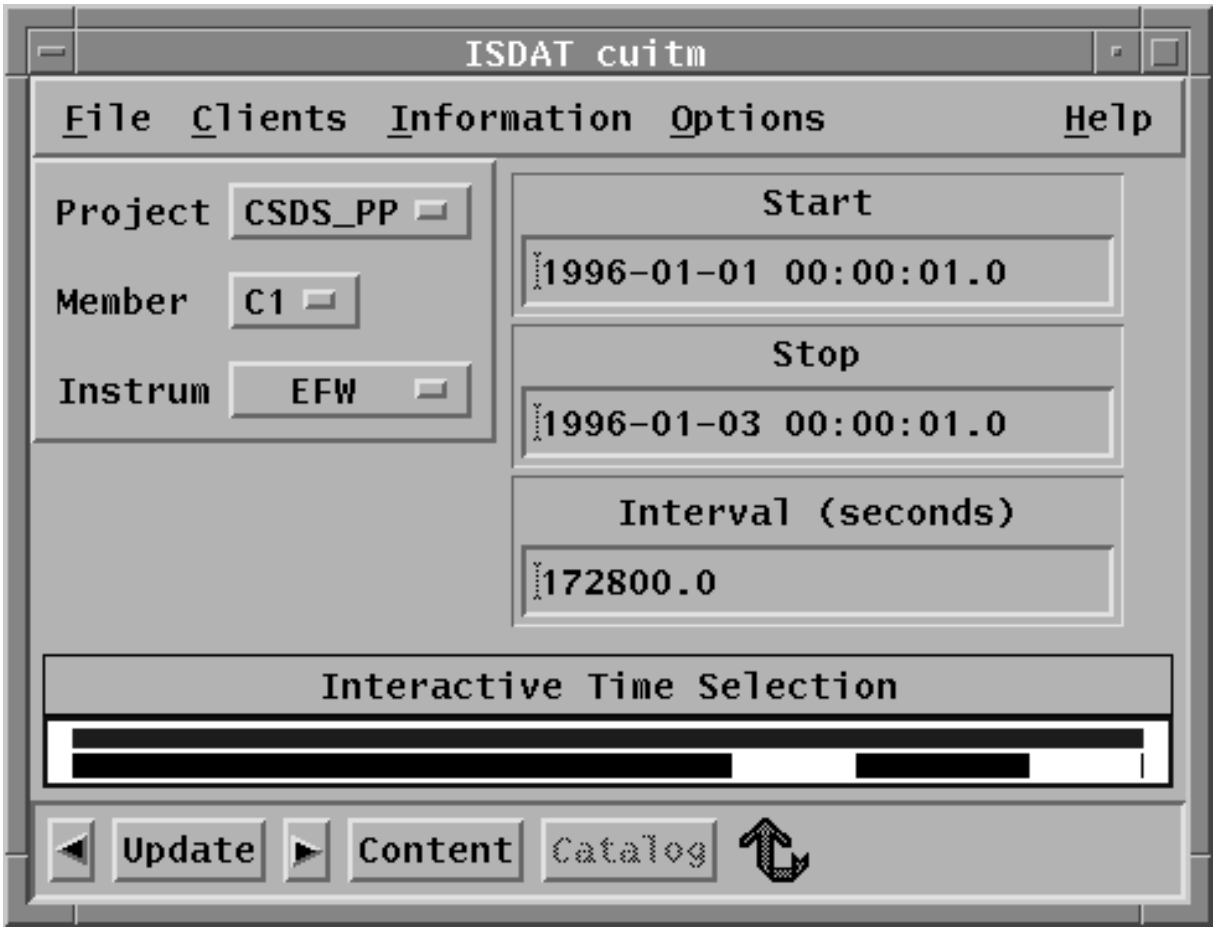

Figure 2: The cuitm window with the current interval shown

selection is made from either the *Database Content List* or the *CSDS Catalog List*. The Button1 of the mouse is used to create a new selection line. The Button2 is used to shift the selection line.

- The action Frame: This frame allows the user to trigger the following actions:
  - *TO-the-LEFT ARROW*: (previous step) this button substracts *Interval* (or *Step* if it exists) from the current *Start* and then perform an *Update*.
  - *TO-the-RIGHT ARROW*: (next step) this button adds *Interval* (or *Step* if it exists) from the current *Start* and then perform an *Update*.
  - *Update*: when the user presses this button, an update event is sent to all child-clients, and they are normally updated to analyze and show data for the current *Interval*.
  - *Content*: opens the *Database Content* window that lists the available data sets for the current *project-member-instrument* specification. By selecting several contiguous data sets, the user updates the *Start*, *Interval* and *Stop* Fields.
  - *Catalog*: opens the *CSDS Catalog* window that displays CSDS results after a query from ESRIN Session Manager. By selecting several contiguous data sets, the user updates *Start*, *Interval* and *Stop* fields. If no catalog is available, the button becomes insensitive. The existence or upgrading of catalog results is checked every second.
  - *Size Icon*: the user can reshape *cuitm* by pressing on this button. By pressing again, it returns to its normal shape.
  - To the right of the *size icon* there is an empty field that will show the current activity in case of time consuming activities.

3.3 Example of a session and expected results

- START:
  - Start *cuitm* from ESRIN Session Manager or from command line.
  - Select a *Project* (ex: 'CSDS_PP'), a corresponding *Member* (ex:'C1') and *Instrument* (ex:'efw').
  - Press *Content* button and select several contiguous data sets among the list: *Start*, *Interval* and *Stop* fields have been upgraded;
  - In the *Clients* menu, select the wanted child-client.
- NEW TIME:
  - Enter new times with the keyboard in the time fields.
  - Press *Update* button: the child-client state will change and accommodate the new times.

  - Press *TO-the-RIGHT ARROW* to add *Interval* time to *Start* and *Stop* fields: an *Update* is automatically performed on the child-client.

- AUTOMATIC UPDATE:
  - Select *auto update* in *Options* menu.
  - In the *Interactive Time Selection Frame*, select a new interval with the mouse : the child-client will be noticed of every time changes.
- EXIT:
  - Select *exit* in the *File* menu.
  - Confirm exit in the opened window.

3.4 Common errors and probable causes

The most common errors are explained in [Ref. 2].

4 User reference

This section is also available on-line.

```
NAME
cuitm - coordinate the behavior of an associate family of clients.

SYNOPSIS
cuitm

ARGUMENTS
Handles all generic ISDAT and X arguments.

DESCRIPTION
Cuitm is an ISDAT client of type  "time manager".  It  is  designed  to
coordinate  several  associated  clients.  The  coordination  is based on a
common time. The major functions of a time manager are: To  activate  other
clients: /* TO BE FILLED */

Menu bar entries:

     File (META-F) . with buttons:

          new manager

          Press this button to start a new manager  to  run  simultaneously
          with the current manager (CTRL-N).

          Exit
```

To exit the client (CTRL-E).

Clients (META-C).

This menu displays in different entries all clients registered at start time. You always find one entry 'general' that has as sub-entries all general clients ('meta' client for instance). You find also a list of project names with project specific clients as sub-entries. Press on the desired client to start it.

Information (META-I) with buttons:

server

Displays the current server name in a dialog window (CTRL-S).

version

Gives the current CSDS UI version number and patch level (CTRL-V).

Options (META-O) with buttons:

auto update

When you enable auto update mechanism, every changes in time selection will automatically trigger an update event sent to all child-clients (CTRL-A).

step

Displays the step time editor in the Time Frame. Step value supersedes then the Interval value whith previous step, next step and continuous actions (CTRL-T).

continuous

Displays the continuous editor in the Time Frame and the associated Run button. When the user enable Run button, an update event is sent to all child-clients, from Start value to Continuous value with steps of Step value (if set) or Interval. You can stop and resume the operation by respectively disabling or enabling Run button (CTRL-O).

Help

Help... gives a short description of the client (CTRL-H).

Specification frame :

The first action of the user is probably to select his project, one corresponding member and instrument. The user can set the default start specification in the .isdat.client file. First of all, the user selects the project in the project list, then one of the selected project member in the member list and one of the selected member instrument in the instrument list.

Project menu.

Displays a list of available project on the server.

Member menu.

Displays available members for the chosen project. An empty list displays only one

Instrument menu.

Displays available instruments for the chosen member. An empty list displays only one

Time Frame :

At start time, the time selection Frame displays the Start, Interval and Stop time fields. The user can set the default times in the .isdat.client file. Additional Step and Continuous fields are displayed when corresponding Options are triggered from Options menu. All time fields are editable and you can enter desired interval in seconds with the following format 'YYYY-MM-DD hh:mm:ss.decimals of seconds'
(ex: '1996-01-03 00:00:01.0'). Optionally the time can be given as:
'1996-01-03T00:00:01.0Z'.
Only digits, spaces and '.', and 'T' and 'Z' characters can be entered.

Start

Displays the start time for the next data interval.

Stop

Displays the stop time for the next data interval. It is automatically updated to show start + interval.

Interval

Displays the interval time for the next data interval.

Step

Displays the step time value.

Continuous

Displays end time when continuous mode is set.

Interactive Frame :

At start time, the frame is empty. When the user selects a data interval from the to represent segments of available data sets within the selected interval. By selecting different contiguous segments with the mouse, the user updates the next data interval.Back and Forth selection is available. The current interval is shown as a separate (blue) line in the 'Interactive time selection' area above the symbolic time line. The symbolic and selection lines are updated when a new selection is made from either the 'Database Content List' or the 'CSDS Catalog List'. The Button1 of the mouse is used to create a new selection line. The Button2 is used to shift the selection line.

Action Frame :

Update button

When you press this button, an update event is sent to all child-clients, and they are normally updated to analyze and show data for the current Interval.

Left arrow

(previous step) When you press this button, it substracts Interval(or Step if it exists) from the current Start and then perform an Update.

Right arrow

(next step) this button adds Interval (or Step if it exists) from the current Start and then perform an Update.

Content

It opens the 'Database Content' window that lists the available data sets for the current project-member-instrument specification. By selecting several contiguous data sets, the user updates the Start, Interval and Stop Fields.

Catalog

It opens the 'CSDS Catalog' window that displays CSDS results after a query from ESRIN Session Manager. By selecting several contiguous data sets, the user updates Start, Interval and Stop fields. If no catalog is available, the button becomes insensitive. The existence or upgrading of catalog results is checked every second.

Size arrow

the user can reshape cuitm by pressing on this button. By pressing again, cuitm returns to its normal shape.

ERROR MESSAGES
At start time: MESSAGE:"can't open display" The DISPLAY envir. variable should be set.

MESSAGE:"can't connect to database xx" The xx server is not running on the server host. Contact the manager of the host machine to (re)start the server process.

Errors originating in the database, such as "bad time" or "bad sensor", will be printed in the cuimeta text field.

SEE ALSO

5 Known bugs

There are no known bugs.

A Error messages

See section 4

B Reference Documents

[1] CSDS User Interface, ISDAT Installation Manual. Technical Report DS-IRF-IM-0001, IRF-U, September 1995.

[2] CSDS User Interface, ISDAT User Manual. Technical Report DS-IRF-UM-0001, IRF-U, September 1995.