

Charles Benneker

Computer Specialist

Software & Hardware

Post Address : **R.G.D.**

Apartado de Correos 368

38700 S/C de La Palma

Canary Islands SPAIN

Tel : 09-3422405626 [Office]

C. (Control) .

D. (Data) .

S. (System) .

A. (A & G) .

T. (IDS) .

Version : V 1.00

U.A.D.S.A. & C.D.S.A.I. & D.S.A.L.S.

& T.P.T.F. & W.E.D.C.S.

are copyright protected by RGO and ASTRON.

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

INDEX.

<u>1.0 INTRODUCTION :</u>	3
<u>1.1 SOMETHING ABOUT FILES .</u>	4
<u>2.0 HOW TO START CDSAI.</u>	5
<u>2.1 HOW TO SELECT A SYSTEM.</u>	6
<u>3.0 GETTING INTO THE MENU.</u>	7
<u>3.1 MENU FOR THE A&G SYSTEM.</u>	7
<u>3.2 MENU FOR THE IDS SYSTEM.</u>	8
<u>4.0 BATCH FILES USED BY CDSAI.</u>	9
<u>5.0 HARDWARE CONNECTIONS TO A&G AND IDS.</u>	11
<u>6.0 SPYING DATA COMMUNICATIONS.</u>	11
<u>7.0 FUTURE.</u>	12

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

C.D.S.A.I. (Control Data System A&G IDS)

1.0 INTRODUCTION :

What is C.D.S.A.I. This is a program written specially for the INT as an Engineering program to run on a PC machine.

As we had lots of problems with the old Exorset, due to lightning strikes and disk problems, I've decided to write a new program for the Engineering system so that we could replace the Exorset with a new and specifically a PC system which will hopefully run for some years. Its also the case that we can easily buy spares for this system.

CDSAI is also a program which is written in a more actual program language then the Exorset and is written in a high level language which is probably better understandable for some people then assembly languages. CDSAI is written in MicroSoft 'C' and using a special library for handling the windows which CDSAI is using. The library as delivered by Magna Carta Software and is version 2.00 from January 1989.

CDSAI is a Window and Menu driven system which gives you the opportunity to display more information at the same time. Beware of the fact that it isn't a multitasking system which will probably your first impression if you look to the Windows. It will give you this impression because writing to these windows, by using the special library, is extremely quick. CDSAI is a fully interrupt driven system and has its own drivers for handling I/O functions.

U.A.D.S.A. & C.D.S.A.I. & D.S.A.I.S.

& T.P.T.F. & W.E.D.C.S.

are copyright protected by RGO and ASTROW.

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

1.1 SOMETHING ABOUT FILES .

Before we start C.D.S.A.I. we need to know something about the files CDSAI is producing and using. CDSAI also has a sort of logging system which writes everything to files from what it detects and from whats going on. Logging is done from all the windows you see.

This is : Logging from the instrument status, System status, Data Flow Window and the Error Status Window.

The file are called :

- SYSTEM.DAT
- IDS.DAT
- ERROR.DAT
- A&G.DAT

The length of every file is about $\frac{1}{2}$ Megabyte which is plain ASCII and can be investigated with a normal editor like Qedit which is also installed on the Eng. System. Its a public-domain editor which is free to use.

$\frac{1}{2}$ a Megabyte of information is not enough to store all the information from one night. Therefore CDSAI uses also batch files to copy and to create files if needed. If a file gets full, CDSAI starts a batch file which copies the filled file to the same name but with another extension. For instance, SYSTEM.DAT is full. At this moment CDSAI starts the batch file and all this does is copy SYSTEM.DAT into SYSTEM.001 and so on. It shifts the files top down concerning the ext. The last file is called with an ext of 008. By changing the batch file you are able to make a bigger history if you want to, but I've found 4 Megabytes of every window more then enough. But you are free to change the batch files as you feel like.

The batch files are called :

- SYS_SHIFT.BAT
- IDS_SHIFT.BAT
- ERR_SHIFT.BAT
- A&G_SHIFT.BAT

Never ever change the names of these files, since you are not able to change the names by giving them into the command line. If you want to experiment with it, copy them first. For instance to *.OLD and then created new one's.

U.A.D.S.A. & C.D.S.A.I. & D.S.A.L.S.

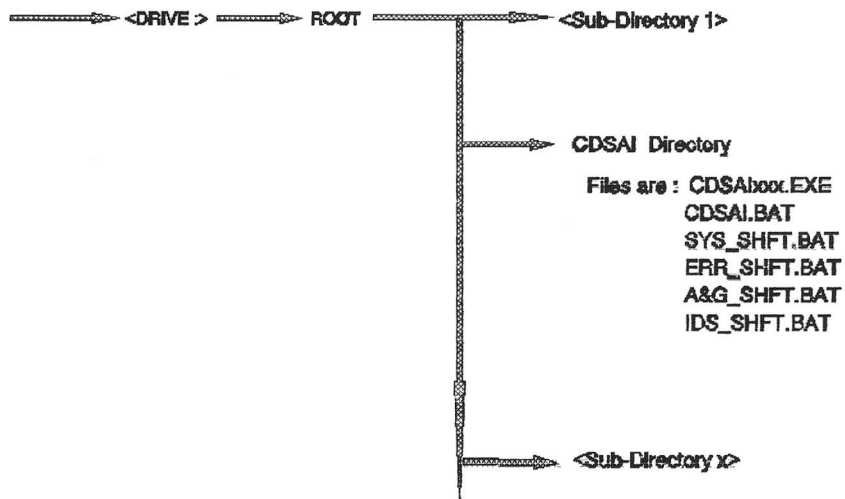
& T.P.T.F. & W.E.D.C.S.

are copyright protected by RGO and ASTRON.

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

Directory Structure C.D.S.A.I.



Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

2.0 HOW TO START CDSAI.

To start this program you have to start an batch file called CDSAI. The reason for this is that we have to do the comm-port settings through the mode command from DOS. The program normally is called CDSAIxxx.EXE, where xxx stands for the version number. So if in the future the communication speed is changed on one or on both of the systems then you just change the speed setting in the batch file. So always type at the dos-command line CDSAI.

2.1 HOW TO SELECT A SYSTEM.

Selecting the system you want to look at or want to gone use for checking an system, just type the first letter of the system you want twice. Default CDSAI always starts up with the A&G box part. Now if you want to change to IDS just type twice the I. To go back to the A&G system, type twice the A. Its just that easy no ?.

Make sure that the switches on the switch-box are set to IDS-test and A&G-test if you want to send commands to one of the systems.

If the system is communicating with one of the remote systems then you will see the response from the remote system displayed in yellow into the DATA FLOW window. If one of the systems isn't responding you will see then in the ERROR STATUS window the message "REMOTE SYSTEM NOT RESPONDING". In this case you can do three things which I will tell you later on since this doesn't belong into this section.

U.A.D.S.A. & C.D.S.A.I. & D.S.A.I.S.

& T.P.T.F. & W.E.D.C.S.

are copyright protected by RGO and ASTRON.

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

3.0 GETTING INTO THE MENU.

The menu's correspond to the system you are running on the screen. This means that if you are in the A&G window and call-up the menu, you will find the A&G menu. If you then go into the IDS window, the menu for IDS will appear.

How to get into the menu is really easy. Just press the ESC key on the key-board. This action makes the menu appear over the system status window. Then, if the menu is on the screen, use the arrow keys to make your selection. Thats all folks.

3.1 MENU FOR THE A&G SYSTEM.

I'm not going to explain every single item of the menu as it's self explanatory. Not that I'm lazy, but its just not needed because most of the items are clear enough. Every single item in the main-menu has a sub-menu. In this sub-menu of the item you've selected you will have the opportunity to select the things you want to move. The only thing which needs telling here is that some items will ask you for a number to be send. This for instants in the movement of an probe. If you select this item then use the + and - keys to increase or decrease the number. The number in the window is the last value which came from the remote system.

The main-menu for the A&G is :

See next page.....

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

The main-menu for the A&G is :

- Main Colour Filter*
- Main N.D. Filter*
- Comparison Mirror*
- Photo Cath. Shield*
- AFARC filter*
- BFARC filter*
- Flip Mirror*
- Guider Filter*
- TV Filter*
- Comparison Lamps*
- F&C Graticules*
- TV X-Probe*
- TV Y-Probe*
- Guider X-Probe*
- Guider Y-Probe*
- Emergency Stop*
- Exit to System*

All these items do have Sub-Menus which I'm not going to write down here. Its better for you to sit behind the key-board and play with it. There are two items which don't have a Sub-Menu. These are the items Emergency Stop and Exit to System.

3.2 MENU FOR THE IDS SYSTEM.

Whats written down for the A&G menu is actual for this menu as well. There isn't must more to say about then please have a seat and try it. The next page give you an overview from the main-menu used in the IDS menu system.

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

The main-menu for the IDS is :

- Dekker Slide
- Colour Filter
- Neutral Filter
- Observer port
- Slitjaw
- SlitShutter
- Hartmann A & B
- Illumination
- Collimator
- Collimator Port
- Grating
- Grating Port
- Camera Shutters
- Exit to System

4.0 BATCH FILES USED BY CDSAI.

The whole CDSAI Engineering system contains one executable program and five batch programs to run the system. The executable program is a program which you can't change unless you get into the code, change what ever you want and compile it again. Also you need to understand 'C'.

The five batch files, CDSAI is using, are changeable as long as you don't change the names. Something is already said about the batch files in the section called 'SOMETHING ABOUT FILES'.

Batch files are some sort of code files which are direct executable from the command line. I have made these files for being a bit more flexible. The batch files are the following one's :

- CDSAI.BAT
- SYS_SHFT.BAT
- A&G_SHFT.BAT
- ERR_SHFT.BAT
- IDS_SHFT.BAT

A small description about what the different batch files do.

CDSAI.BAT : CDSAI the start-up batch file for the system. So

U.A.D.S.A. & C.D.S.A.T. & D.S.A.L.S.

& T.P.T.F. & W.E.D.C.S.

are copyright protected by RGO and ASTRON.

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

to run the system you should type at the command prompt
CDSAI.

All it does is loading the settings of the communication
channels through the dos mode command.

If you need to change the baudrate from one or both com-ports
you have to do it in here.

Nothing more is done in here. If you need to do something
with the system before you want to run the program, also
do this in the start-up batch file.

SYS SHFT : SYS_SHFT is a batch file which is called by the main program
CDSAIxxx.EXE. This batch program deals with shifting the files
created by CDSAI from the system-status window. This file
is called SYSTEM.DAT. If SYSTEM.DAT is filled up with the max.
information it can contain, CDSAI then starts SYS_SHFT
which copies SYSTEM.DAT to SYSTEM.001. If SYSTEM.001 already
exists, it will then copy SYSTEM.001 to SYSTEM.002 and so on.
The last file is numbered SYSTEM.008. Now 8 files times 500.000
bytes is about 4 Megabytes of information. If this isn't enough
you can change/extent the batch file by adding lines to it in
the same way as it is done now.
If the copy action is finished, SYS_SHFT will give the control
back to CDSAIxxx.EXE.

ERR SHFT : This file is a copy of SYS_SHFT and the only difference in this
file are the file names.
This batch file deals with the files created by CDSAI called
ERROR.DAT.

IDS SHFT : This file is exactly the same as those mentioned above. It deals
with the file named IDSDATA.DAT.

A&G SHFT : Again the same dealing with the files called A&GDATA.DAT.

Listings of these files are available with the source listing of CDSAIxxx.C

U.A.D.S.A. & C.D.S.A.I. & D.S.A.L.S.

& T.P.T.F. & W.E.D.C.S.

are copyright protected by RGO and ASTROW.

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

5.0 HARDWARE CONNECTIONS TO A&G AND IDS.

Both systems are connected to the PC com-ports number 1 and 2. The A&G system is connected to com-port 1 and the IDS system to com-port 2. Never swap them around since CDSAI doesn't look for which system is connected to which port. The only lines on the RS232 cables which are used are pin numbers 2, 3 and 7. (Called nil-modem connection). There is a switch box attached to the com-port to switch between the ICS and the Engineering system. If you switch to the ICS, CDSAI is still able to receive information if it is sent by one or both of the remote systems. So the status displayed on CDSAI is always the current one.

6.0 SPYING DATA COMMUNICATIONS.

By looking to the **DATA FLOW** window you can see information coming from the remote systems. Every byte is displayed on the screen even if it isn't readable for you. So characters like CR and LF will appear on the screen as well but they are displayed as like a music-note symbol. To find out what these are, you will have to look in a book which converts these signs into decimal values. But the most important thing here is that you can see if the communications between systems are o.k. Also, all this information is stored into a file which you can investigate.

Charles Benneker
Computer Specialist
Software & Hardware

Post Adres : R.G.O.
Apartado de Correos 368
38700 S/C de La Palma
Canary Island SPAIN
Tel : 09-3422405626 [Office]

7.0 FUTURE.

An option which I had in mind, is to connect the ICS to the Engineering system as well. Using the two ports which are left unconnected. Ports number 3 and 4 will be used in the future for connecting the ICS to CDSAI. This will allow us to use the CDSAI as a control system for communications as well. All this will again be logged into a file. This gives us the possibility to investigate everything if something goes wrong during the night of observation. Also DT's can, in case of problems, see if communications still work between the instrument and the ICS by just throwing an eye onto the data flow screen. The system will be fully transparent to the other systems and there won't be any involvement from the CDSAI program into the communications between the instrument and the ICS. This is the only update I suggest to do but you always can give me some good ideas for doing future up-grades.

Thanks to everybody who helped me out in the time I didn't know something.

Hopefully this will be a useful system to everybody and will make things easier for the DT's

Regards,
The author.