WP?

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DD	DD	BB	BB	
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Reparto Basi di dati e sistemi informativi

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February 1981

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Foreword

The aim of this document is to provide a basis for discussion when defining the content of Phase 2 of the implementation of the Common Command Language (CCL) on STAIRS/VS - TLS.

The document will contain a brief description of the present state of the implementation, a review of the commands as they are currently implemented, proposals for future developments and additions to the original A.E. Negus proposal which have been suggested by an Italian user. Finally, maintenance problems and the extent to which the manufacturer, the other hosts and the European Commission should become involved are discussed.

A. Project status

The most important stages of the project are outlined below:

- December 1979: first CCL implementation ready ([CNUCE79]).
- 19 December 1979: meeting at CNUCE with L.E. Negus and
- 20 December 1979: European Commission is advised of availability of first implementation of CCL.
- 22 January 1980: meeting at SCICON, some amendments to the implementation are agreed.
- 29 January 1980: meeting in Luxembourg, presentation of CNUCE implementation to interested hosts. It is agreed that these hosts should receive a delivery tape containing the amendments discussed in the meeting of 22.1.80.
- 03 March 1980: delivery of first implementation tape containing the amendments agreed 29 January at Luxembourg, and additional enhancements.
- 10 April 1980: meeting in Luxembourg to discuss hosts' experiences with the implementation distributed, and the additional developments proposed by CNUCE.

IAEA presents a report on its installation experience.

The use of an inverted string technique in the implementation of the FIND command was rejected, at

least for the moment, due to the problems involved in the necessary restructuring of databases. After discussion, an implementation in which it was not possible to mix SEARCH and SELECT type queries was agreed.

- 22/23 April 1980: workshop at CNUCE with IBM representatives. The content of the CCL implementation, to be accepted by the EC in fulfilment of the contract was agreed ([CCL-0001-1]).
- 23 May 1980: delivery of CCL Release 0 tape ([CNUCE80a]).
- 07 July 1980: delivery of CCL Release 1.0 tape ([CNUCE80b]).
- 28 August 1980: distribution of reporting on first 6 errors discovered on CCL Release 1.0, operational at CNUCE.
- 14 November 1980: the European Commission is officially informed of the completion of the implementation.
- 20 January 1981: an Italian firm, after having tested various CCL software, selects the CNUCE implementation on STAIRS/VS-TLS.
- 10 February 1981: meeting in Luxembourg to agree the content of Phase 2 of the implementation.

CCL

B. Further Command Implementation

In the following paragraphs, all the CCL commands are described, one by one. The present state of implementation and the final syntax expected is given for each command.

The future devlopments suggested are the result of a very general examination of the situation and are intended to be used as a basis for discussion during the definition of the content of Phase 2.

In the Miscellaneous section, some of the suggestions made by the Italian firm, which has selected the CCL implementation on STAIRS/VS - TLS in order to provide a service on a national scale, are presented.

B1. Sign on

Present implementation:

220 450 150 150 150 150 150 150 150 150 150 1	- 100 cm		y এটার এটার সার্ভার এটার এটার এটার এটার এটার এটার এটার এট	ap rep sea our son	Augus peter repter deler receir	- Constant
CONN[ECT] CNUCE		-	user-password	user-name]	de intitute describi
1	STAIRS	To 4000 Min	- AND SEEN HERD HERD SEEN - MEET HERD HERD HERD THEN SEED SEED HERD SEED SEED SEED SEED SEED SEED SEED S		ඎ≈∞∞∞	sadosee official

Further developments:

A restart on the database will be made possible if it is decided to support the BUT parameter on the STOP command.

B2. HELP Command

Present implementation:

\$ 1000 and 1	COURT	NO. 500- 500- 500- 500- 500- 500- 500- 500
1 Command	Parameter	Default value
	t ninger mann jennik difett selligi digita d	ages special primer April April (1905) April
H[ELP] or ?	[command]	HELP
THE STATE WITH STATE STA		CONTROL CON CONTROL CON

Further developments:

None.

B3. BACK Command

Present implementation:

distant			===	one with residue wines you've seems	-weight adding ancies which oblice while weight weight weight of	der einer verste verste verste verst verste verste verste verste delle verste v	: 1
September 1	Command	Par	ame	eter		Default value	Minister
Victorianes					American regions regions which makes and regions process and the contract of t		C Specialist
Solate	B[ACK]		nuı	mber]	1	-
-	- CON 100 - CON	00 423 VO - 00A			100 100 100 100 100 100 100 100 100 100		2 400

Further developments:

None.

B4. MORE Command

Present implementation:

	Congress contract and contract		AND	and the control of th	e person habite tanilla canton person proper manore tanone a altrica. Altric canton indica relativo canton canton canton	
1 Com	mand	Par	ameter		Default	value 1
====	Comment product foliates regulary secures consistent animates services regular regular regular in secure consistent animates secures animates anima		en militar valleta sanne risklike nation traster framer militar a notice risklike vallete jasser traster militar militar	AND	HOUSE HOUSE WARM MATTER THAT THE PROPERTY AND A SECOND PROPERTY AN	
I M[O	RE]	[number	Linear Li	7	and constraints
	- 100 min and and and and and 100 min and and and and and and	a 2010 entre etc.				

Further developments:

None.

B5. PAGE Command

Present implementation:

- Control			===			atom valor		====		-	=======================================					10000 1000	-
adale.	Command	Pai	cam	eter					D€	£	a u	lt	. 3	ıa	lu	.€	1
1111111	The state of the s				-071 000				===	===	****	, many 1930	-				-
10000	PA[GE]		nu	mber			(cur	re	n	t	pa	ge	3	+	1	1
- initial	- 1000 400 400 400 400 400 400 400 400 40			400 400 400 400	NAME OF STREET	400 400 400	AD - CO. AND - C	100 -QCD 1650	<20 m	100	ess 1000	1203 1209	600 40	n 4000	4007 3003	TOTAL STATE	, delining

Further developments:

None.

B6. NEWS Command

Present implementation:

Non∈.

Future developments:

The second and the se	to display which which which replay depth of the state of	en jeune vones einer mehr jeune milje skrigt voner von	m space coops after terres commo subsections of the delay coops above the coops of the coops	
Command	Parameter	Def	ault value	
	n rudge bedan 1800 genor tanga region pula kana ang atawa saka ang atawa tanga tanga tanga tanga tanga tanga t Na rugga sakata 1808, Arusa saka saka rugga 1800 1800, 1800, ang atawa saka saka saka tanga tanga tanga tanga	and along the state of the state and the state of the sta	The state area and with the control of the state and the state area and the state area and the state area are state and the state area are state are state are state are state are state are are state are sta	,
NEWS	?		en e	
		90 AND 1-00 AND 1-000 AND		ĺ

May be implemented by accessing a specific "scratch pad" file.

B7. INFO Command

Present implementation:

None.

Future developments:

00). ***********************************										
Command	Parameter	Default value								
Souther paper arriver supper south supper supple water south attent attent attent attent attent attent attent of the south south states of the south s	and apper separa security and attended to the property of the security and and and and and and apperty and apperty apperty appears and appears appear appears and appears appe	Total Column Co								
INFO	EURONET									
10	COST	nonen								
OF	SCHEDULE	1								
or	USERS									
or	STATUS	1								
The distriction was the man was the control of the distriction of the control of	בבה במצו ישרא נצמו במברי נולה אום יקודי ולבו מבור יולולה צורים- ולבוי יולוי	20 000 1000 1000 1000 1000 1000 1000 10								

May be implemented by adding specific entries to the HELP messages file or by setting up an ad hoc file.

B8. DEFINE Command

Present implementation:

Tables phone yours (see that the party time about come and come an	====					agging former commerciation control control control states and records again control c
Command		Parame	et€	er	Def	ault value
Thomas cannon comes ancies require solder patch channel cannot resting from	====	ere come ander come come ander a de man ande come come come c	====	the white the control of the control		The court of the same and the court of the c
i DE[FINE]	Tanana and an and an	DL		char]		X,00, 1
1	Ē	;BS	==	char]		X , 00 , 1
	Ĺ	• M	-	S(hert)/L(ong)]	LONG 1
1	Ī	;PAGE	****	(pl,ln,mg)]		24,24,0
morting of	Ţ	; DEFA	JL			-
	o est 40 -10		100 NO N	- محمد المحمد المحم	***********	AND THE

Further developments:

If the FORMAT parameter is cmitted, a prompting dialog takes place. The format defined is checked against the CCL correspondence table and is then stored in a file. Consequently, SHOW and PRINT will be modified to take output format from this file instead of from the DLNFCDEP table.

B9. DELETE Command

Present implementation:

None.

Future developments:

```
| Command Parameter Default value |
| DEL[ETE] [ S = n [ TC m ] ] none |
| [;P = n [ TC m ] ] none |
| [;SLVE = < profile name > ] none |
```

The CCL queries, print requests and saved profiles are deleted.

B10. BASE Command

Present implementation:

```
Command Parameter

BAS[E] [dbname]

[;P = password]

[;TL = thesaurus language]

[;THES = thesaurus name or LIST]

or

BAS[E] ?
```

Further developments:

1	nggge some villed and halls villed states of the state of the states of						an many ready survive about ready of the same of the s	mer compression contra styles contra styles contra	
, mark	Command	Рa	rame	eter				Default	- 1
1	Auditor and the Control Laters, religing tending appear religing tracked fundame temporal for Auditor tracked control control and the following region and which finding second to			a district control of the control of			and white plants and white white the same and the same an	- record values force years troop cause from the school willing values with camper record with	
, story	BAS[E]	[; I	ED =	date1	TO	date2	2]	none	<u> </u>
oppose		[:1	OFIN	ID]					1
				- ACCOL - PARTY - TAXABLE - FACES - A		9 -250 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 -	20 CD CD CD CD CD		

a) - ED = date1 TO date2

In module VIE801:

.. SELECT ALL ED WI date1, date2

is simulated as input at "signon complete time".

The display of the result may be altered for this your first input in module DLN025.

Then, with a FIND "search-type", the query is modified to:

.. SEARCH 1 AND <query>

With a FIND "select-type":

- if the query contains a backreference it is not modified;
- if the query does not contain a backreference, it is transformed into:

..SELECT 1 <query>

The implementation of this parameter does not seem particularly useful or meaningful as it would give very poor performances unless an inverted string

ference un alto TNAX file wlox l'Es, sofele prime select vene fette ml technique is adopted to effect SELECT type queries.

b) - NOFIND

If the NOFIND parameter is entered, a simple control of the CCL syntax is made, and the query is not executed.

B11. STOP Command

Present implementation:

		2005 years rather make about about there are about appeal about appeal and appeal about appeal appeal about appeal about appeal appeal about appeal appeal about appeal a	STATE OF THE SAME AND AND THE SAME AND
1 Command	Parameter		ault value
The same state of the control of the	AND AND WINE AND	was didn't was made, major was such affile the total and the second such as the second su	
1 STOP			
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Further developments:

1	Length Ferror Leight Lives views page Ferrir error since Legent Le					-
1	Comman d]	Param	eter	Default value	-
1	entre appe attent dere seine seine seine ande anter seine stelle attent en en anter treate attent attent attent ande attent att		AND THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADDRE		man and and and and and and and and and a	Addition
1	STOP	Parameter .	BUT]	none	- manual
Accessor	The same wine the same same same same same same same	on 1000 1000 1000 40			· · · · · · · · · · · · · · · · · · ·	distant

If the BUT parameter is entered, the input is converted into

.. OFF CONT

and a database restart is possible. The sign on implementation will be modified accordingly.

B12. FIND Command

Present implementation:

	er faller verke stort skiller tillste vilket skiller skiller skiller stort som som som som som trende stort tillste skiller sk	The state of the s
Command	Parameter	Default value
Water candid which would wise their some made to the first wide with the candid with the candi	AN ARTHUR	Service and Allender and Allend
F[IND] id	lentifier [operator	identifier]
or		***************************************
F[IND] ?		1
	· · · · · · · · · · · · · · · · · · ·	CO -

Further developments:

Transpire foliate and trade work arms were foliate to the foliate foliate foliate foliate and arms arms are a	10 Mars (60) min min (10) (10) (10) (10) (10) (10) (10) (10)	The COS STATE AND COST STATE AND COS
Command	Parameter	Default value
	سم درست ویک شده واشار هوم داده قادات میواد میدود می ماده ماکند داده معرب وابست میدواند ویشد بیشته بیشت بیشتری میزاند میزاند بیشت بیشتری میزاند میزاند میزاند میزان	See a serie contract
F[IND]	SAVE = <profile na<="" td=""><td>me> 1</td></profile>	me> 1
1 1 [;NGFIND]	· ·
	aut (स्थान क्षेत्र) स्थान क्षेत्र) केंद्र प्राप्त क्षेत्र केंद्र प्राप्त क्षेत्र केंद्र प्राप्त क्षेत्र केंद्र	THE THE STATE STATE STATE OFFI COST COST - VALL STATE COST COST STATE COST COST COST COST

Further extensions:

Reference to terms previously shown using the DISPLAY command can be made explicitly and dynamically; thus, in a single query, reference can be made not only to the "current display" but also to different displays. For example, a statement of the type:

FIND T=3.5 AND (T=8.12 TO 15)

would put the fifth term of the third display in AND with the logical OR of the terms from 12 to 15 of display number 8.

Note: At the present, there are two restrictions:

- i) the max. length of the query is limited;
- ii) SEARCH and SELECT type queries can not be combined.

The first of these two restrictions is caused by the fact that STAIRS does not accept queries longer than 234 bytes. Consequently, queries of the following type cannot be made on a wide range of terms.

In the present implementation, the maximum length has been set at 138 bytes, this could be carried without any difficulty to over 234 bytes.

If the second restriction is to be overcome while still maintaining an acceptable performance level then the data base structure must be modified by introducing an ad hoc paragraph for the formatted fields. In this way, the SELECT query would be transformed into SEARCH, as was shown at the meeting of 10 April 1980 at Luxembourg.

This solution would also enable the ED parameter to be supported efficiently.

B13. DISPLAY Command

Present implementation:

Further developments:

None.

B14. SAVE Command

Present implementation:

None.

Further developments:

1	- Company of the comp	ADM ATM ATM AND	There are some many return the	0 400	===:	===	- 2000 - 2000 - 5000 M						= ==	===	===		===			a de la companya de l
decomp	Com	mand		Par	ame	ter						Ι) e	fa	ul	t	٧a	11	1e	-
1	Aller Street Street Arrest Street Street Street		a calcular abbita abbita (abbita abbita abbi			===	===:		====		==:	====	-	===			===	===		: 1
dosessi	SA[VE]		<pre><pre><pre>pre-</pre></pre></pre>	ofi.	le	name	≥>							n o	n e				designation
10000	esta ette ordi esta	vices and ways 1980		- GER 1888 -018	-	10 ×0 ×0		50 103s	50+4 ASS 140	P AND 1000 100	ou suba -a	an way op	ES 4600 -	964 168b	-0-7 033	-000- 000	-4500003		H 7669 166	Constant.

The queries are saved with the display terms which have been specified.

Queries recalled by

FIND SAVE=<profile name>

are re-executed.

B15. SHOW Command

Present implementation:

=====================================	======================================	Default value
Command	And Andready. Total 2019 have their their state of the control of	And the control of th
S[HOW]	[S = qn] [;R = n [TO m] [;I = k] [;F = p1;p2;]	1
	OI	ALL
- data sepa seda 1000 - 000 - 000 - 000 - 000 - 000	_	- 40 - 420 420 420 420 420 420 420 420 420 420

Further developments:

If the output formats can be defined dynamically using the DEFINE command, the PL/I module must be modified to read the formats from a file instead of from the table DLNCDEF.

B16. PRINT Command

Present implementation:

```
Parameter Default value i
| Command
| P[RINT]
      [S = qn]
                        last query |
        [;R = n [ TO m ] ]
                         1 10 50
        [;I=k]
        [ ;F = p1; p2; ... ]
      or
                         ALI
       [ ;Fn ]
[ ;D = OFFLINE ]
      or
                       D = OFFLINE 4
        [ DISK = prtq ]
```

Further developments:

Jacks Alline Print Line - 2006 - 4000 - 40		### 45 Apr 100
Command	Parameter	Default value
while more which colors were stops upon these stops when the second stops while the stop	de veges entre sons sons alors est de service de servic	# 100 A A A A A A A A A A A A A A A A A A
P[RINT]	[L = <char stri<="" th=""><th>ng>] blank</th></char>	ng>] blank
- Appropriate	[;SORT = fl1,fl2]	,] ED (?)
	$[; ED = \langle date \rangle$] none
1	[;HIST = YES]	NO J NO I
	9 907 (638 tilb) elle elle elle tilb tilb tilb tilb film (638 1838 tilb) tilb tilb tilb tilb tilb tilb tilb tilb	

a) - L =

this could be supported by writing a suitable print record and by modifying the offline print program.

- b) SORT =
 this is only possible on field labels with a linear
 range (i.e. formatted fields).
- c) TL =
 this cannot be supported
- d) ED =
 this could be supported by executing a suitable
 SELECT (or SEARCH if the DB structure is altered as
 described in FIND).
- e) HIST =
 this could be supported by writing an appropriate
 record on file DLNPRINT and modifying the offline
 print program. All executed queries will be printed.

In addition, if it becomes possible to define the output formats dynamically using the command DEFINE, then the PL/I module will have to be altered so that the formats are read from a file instead of from the table DLNPCDEF.

B17. CWN Command

Present implementation:

-	-	= :	= =	=:	==	-07	= =	===	-	===	===	= ==	==:	= :	==	-	= :	-		==	=		= :		===		= :		==	== :	= ==	: ==		==	== :	-	==		: ====	= .:	-	=
destroy	4	C (OM	m a	n	đ					I	a,	r	1 E	n e	t	e i													1) €	£	а	U	11	t	V	ra	11] (9	- Parker
Shine	-	-	200 Miles	30000				==	===	==	= =		==:	ger y	===	ACM ATM	= :	= :	= =		=				-	NORTH THE	=======================================	= =	: ==	=:	= =	:==	- mann	=		100 -			===		= :	=
distant.	,	01	N																																							
-	rester to	up ∗u	00 A200	ane va	9 660	200 e	- - - cop	- Notice	-000-	400 400	101005	-1001	10000 4	ш» «	pp vacco	-scqa	esp es		1029 413	* 400	r religion	neso .	5000 rs	TT- 400	- 1000	Niber 1	-crao -c	00 -400U		-600 U	ab ema		***	1659 1	-85a -e	-		. =	~o e	04 NO	W 42	

Further developments:

depends	antime relative annual values where above according according annual control c		ACIDA MINIT MINITO Abdito Vaccas ACIDA MINITA ANGLE SIMILE MANIE	sanka sanga wegit serim lajuka wana selata sensor asmi la Apin selata senga sensor jajuka selata pasar selata selita sej		THE PARTY STATE THE PARTY STATE STATE AND THE PARTY STATE ST	tion came claim accer sugar aggs and were bose sugar aggs
***************************************	Command	P	arame	ter		Default ·	value '
-	Section of the sectio		AND STREET STREET STREET, STRE	COUNTY AND THE PARTY AND THE THE THE PARTY AND THE PARTY A	THE PARTY NAME AND ADDRESS OF THE PA	mine wipes much more paint topic, library major or mine annex topics annex segments and annex of	
distable	OWN	[<	STAI	RS command	i >]	none	
destale			100 - 100 100 - 100 exp			the talls was tree and tall any of	

If OWN is followed by a STAIRS command, this command will be executed and the user will then remain in STAIRS environment.

B18. .. CCL Command

Present implementation:

```
Commain Parameter Delaut value | ...CCL
```

Further developments:

1	arter again reper reference	ATTENDED TO THE PARTY OF THE PA	the state of the s				====						THE NAME AND VALUE WHEN PERSON ASSESSED.	=
1	Con	mand		Pa	rame	eter					Dе	fault	value	Saldan.
-	-aveoneoneone-		AND NOT HAVE AND ADD OFF THE	====				-				ACTION AND STREET AND ADDRESS	THE SAME ASSET SHARE ASSET ASSET AS	=
designation	C	CL	[<	CCL	COMM	and	>]			none		changed
in in	1000 -000 -000 -000	100 -100 -100 -100 -100 -		- 500- 40		* 1000 1000 -000 -000	100 TO 100	400 -000 1600 N	ola (029 1480+)	DOM: NO. 304 A	פונא. לוחא פועוב פסס	eline water done alone eline		-]

If the command ..CCL is followed by a CCL command, this command will be executed and the user will then remain in the CCL environment.

B19. Miscellaneous

Some other proposed functions are briefly outlined:

- a) At the end of each database session, the cost of the session should be given.
 When the command STOP is given, the user should have displayed the costs of the individual database sessions together with the total cost of the entire session.
- b) It should be possible to access to the accounting for the whole of the period which has not yet been invoiced. $\rho_{\rm 100} = 0.00$
- c) It should be possible to verify which of the DBs food the actually available are most relevent for the scope of a but particular session (i.e. to make the same query on all the accessible DBs).
- d) On-line ordering of original documents.
- e) SDI and batch terminal supports.
- f) On-line deleting of the original document ordering.
- g) Off-line printing of non-standard formats.

C. Conclusions

The present implementation has been made so as to support all those CCL features which were not in contrast with the STAIRS basic philosophy (a typical example is the SEARCH - SELECT). Nevertheless, the fact that CCL is command driven while STAIRS follows the "environment" (i.e. distinct SEARCH, BROWSE and SELECT environments) has often created serious problems, forcing us to make a number of alterations in certain modules. In addition, STAIRS, probably partly as a consequence of this "environment" philosophy, does not have an authentic Command Driver. The commands are tested and accepted in a number of different modules (DLN002, DLN010, DLN013, DLN025, VIE804). The DINCMDEF table does not help to resolve this problem as, although it makes it possible to define other commands in addition to the STAIRS commands, STAIRS commands are still always accepted. This fact has also implied a series of minor, interspersed modifications in some "environment" drivers to avoid STAIRS commands being accepted in the CCL environment with unpredictable results. Consequently, the present implementation consists approximately 6000 PL/I, 1600 Assembler and 800 Macro assembler statements. The Assembler alterations, which from the maintenance viewpoint are the most heavy, could be

eliminated if certain small enhancements were added to STAIRS-TLS. (i.e. a skimming list and the possibility of entering as valid input the ..SEARCH command together with the query or the ROOT). If the manufacturer was willing to include these suggested improvements, the hosts would be much more ready to install the implementation as a major, if not total compatibility, with successive releases would be ensured.

A number of possible solutions are suggested with regard to the eventual involvement of the Hosts.

- a) any enhancements of STAIRS/VS TLS which have already been developed and tested by the Hosts, could be included in the final implementation. (Some collaboration between the various Hosts on this point would be necessary).
- b) the development of the additional functions proposed by

 Phase 2 could be equally distributed among the future

 users. In this case, it could be necessary to

 establish a center for coordination and testing.

During the joint meeting between the "Programme Committee" of the User Forum and the "Standing Committee" of EHOG held in Luxembourg, 16th December 1980, some considerations were made on CCL by both users and hosts:

- "At present, the hosts offering the CCL only give training courses in the host specific retrieval language, and the availability of the CCL is only mentioned briefly. This attitude of the hosts should change and CCL should be seen as a major selling argument."
- "If the CCL is implemented by one host the commands should be consistent with others. Either complete new software implementation or an interface (mapping) are needed.

If mapping of the CCL is chosen by different hosts on compatible mainframes one consistent interface should be guaranteed even though some shortcomings cannot be avoided.

It was emphasized that two slightly different CCL versions are worse than two completely different systems." (+)

- "The seed money provided by the CEC for developing and implementing CCL was only 1/3 to 1/5 of the real costs.

Therefore the CEC was invited to provide more financial

⁽⁺⁾ It might be advisable to create a group with the specific responsibility for the analysis, evaluation and coordination of these different versions. The European Commission should be willing to provide financial support for a group of this type.

support to those hosts which commit themselves to further developments of the CCL."

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