SINTEF REPORT

SINTEF

SINTEF ICT

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TITLE

Technical Support Agreement for LAV TUA

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CLIENT(S)

NAMSA

REPORT NO.	CLASSIFICATION	CLIENTS REF.		
SINTEF A14966	Unrestricted	Contract No: LM-MV1/4600001584		
CLASS. THIS PAGE	ISBN	PROJECT NO.		NO. OF PAGES/APPENDICES
Unrestricted	978-82-14-04468-3	90G310		14
ELECTRONIC FILE CODE		PROJECT MANAGER (NAME, SIGN.)	CHECKED BY (NAME, SIGN.)	
Report_NAMSA_2009.doc		Gorm Johansen *Gorm Johansen*	Knut Vidar Skjersli *KVSkj.*	
FILE CODE	DATE	APPROVED BY (NAME, POSITION, SIGN.)		
	2010-02-15	Sture Holmstrøm, Research Manager *Sture Holmstrøm*		

ABSTRACT

This report describes the work carried out in the period January 2009 – February 2010 by SINTEF under the maintenance contract with NAMSA.

KEYWORDS	ENGLISH	NORWEGIAN
GROUP 1	Software and Hardware	Software og Hardware
GROUP 2	Maintenance	Vedlikehold
SELECTED BY AUTHOR	LAV TUA	LAV TUA

SINTEF

TABLE OF CONTENTS

1 Introduction

This report describes the work carried out in the period February 2009 – February 2010 by SINTEF under the maintenance contract with NAMSA. Statement of Work (SOW) is listed in the maintenance contract. The following parts from SOW are covered by this report:

1. Maintain Access to Software Source Code and Development Tools
2. Maintain Access to Hardware Source Code and Development Tools
3. Maintain Software and Hardware release History
4. Maintain SINTEF Competence on Software, Tools and Hardware Configuration
5. Maintain Competence on making Hardware Changes

Each of the above items from SOW is documented in the sections below.

2 Maintain Access to Software Source Code and Development Tools

This section describes the backup part of the service agreement with NAMSA.

The work to be done as described in the service agreement SOW, is:

1. *Copy all software and source code, items and versions as listed in Appendix A[1], and verify each copy by comparison.*
2. *Copy all software development tools, items and versions as listed in Appendix B, and verify each copy by comparison.*
3. *Execute all relevant development tools by compiling for at least one CPU or CPLD.*
4. *If more than one version of a development tool is needed to compile all the software items and versions, each version of the tool shall be executed. A software source code version can, as an alternative, be converted in order to compile it by a newer version of the development tool.*
5. *An old software version that is replaced by conversion is still copied, but no longer relevant for annual compiling. The same applies for an old software version that the Client has confirmed in writing is no longer in use.*

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[1] Appendix A and B refers to the appendixes in the service agreement.

2.1 Executed work

Item 1. Copy all software and source code, items and versions as listed in Appendix A, and verify each copy by comparison:

Files and directories copied to CD/DVD:
- Tools:
    - .iso image of IAR compiler software is stored at: "Development_Tools\Compiler_CD_IAR3.10A.iso". (A copy of the original compiler installation CD).
    - Other CPU tools(download and debugger etc.): "Development_tools\AVR_utilities"
    - WinCupl(v5.30.4): CPLD compiler with different fitters and download utilities: "Development_tools\AVR_utilities"
    - Some extra GNU tools under "Misc" (Mostly used for comparison.)
- Source code(untouched and zipped):
    - Source code directly fetched from the repository and stored in file "2010-02-01_export.zip." Inside this zip file multiple checkouts are stored for each relevant release for CPUs and CPLDs.
- Source code unpacked and with recompiled results
    - For processors "Rebuilt2010\tss5_03" for TSS and "Rebuilt2010\release5_01" for CMCP. (Point 1-3, 8, 11, 13-15 in Appendix A)
    - For CPLDs "Rebuilt2010*.CPL*" and one path for each PCB's CPLD's (Point 4-7, 9-10, 12 and 16-21 in Appendix A)
- Released binary code
    - Released processor code stored in: "SW_Releases(Zipped form) and unpacked in "Deployed_SW_Releases"
    - Released CPLD code stored in: "CPLD_Releases"

Item 2. Copy all software development tools, items and versions as listed in Appendix B, and verify each copy by comparison.
This has been done by NOCA. The NOCA report in Norwegian is attached

Item 3 & 4. Execute all relevant development tools by compiling for at least one CPU or CPLD.

CPU related:
1. Checked out the complete source code from the CVS repository.
   We have two revisions: one for TSS "TSS5.03" and one for CMCP "release5.01".
   The checked out versions of the repository are stored in the "2010-02-01_export.zip" file.
2. Unpacked the released files and did an integrity check against the md5 file included.
3. Complete rebuild of code for all processors for both revisions done. These rebuilt files are placed in "Rebuilt2010" directory. The log file for the compiling is placed in the "logs" directory in different files with corresponding names.
4. A comparison between the a90.files just compiled ("Rebuilt\tss5.03" and "Rebuilt\release5.01)" and the previous released "Deployed_SW_Releases" was done. The resulting log file is stored in the files: "logs" directory and with corresponding names."

As one sees in the log files, there are no differences other than the date of compiling. Due to this the 2 bytes of compiler generated checksum is also changed.

CPLDs

1. The CPLD source code was retrieved from the CVS repository together with the processors' source code described previously. Each CPLD is checked out with the tag created the day of the release and not the latest code in the repository.
2. The released binaries are placed in the "CPLD_Releases" directory with one subdirectory for each release date. Each of these release date subdirectories have one subdirectory for each PCB.
3. Unfortunately, the CPLD code is released at different time and with different compilers. Therefore the CPLD code has to be compiled with different versions of WinCupl fitters to be able to make an exactly equal file to the release. Which fitters used can be found at the top of the released .jed-file.
4. The diff log is stored in the file "logs\CPLD_cmp_Log", and the only differences one can see in the compiled files are the date when they are compiled.

As the report last years indicated, there were some issues while trying to generate the binary code for the IJB CPLD and compared them with the released ones. This issue was solved this year and there was no problem to regenerate the binary code. The mismatch last year occurred because the code compiled for the CPLDs was the latest code in the repository and not the one tagged as the release.

The changes in the CPLD code were related to the increase of the TAS power up delay from 0.5 seconds to 1.0 seconds. This change was first implemented by changing the CPLD code, but in order to avoid the need for downloading new CPLD code to all IJB cards, the increased delay was instead implemented by changing the clock frequency to the CPLD from the IJB CPU software since this SW is downloaded via the SSI interface. The most recent CPLD code in the repository has been changed to be compatible with the released one in order to avoid problems in the future.

One HW fault on the SINTEF IJB card has been detected. It is not possible to download new code to the IJB CPLD. SINTEF will try to repair the IJB card as soon as possible in order to have fully operative HW components the SINTEF lab

Item 5. An old software version that is replaced by conversion is still copied, but no longer relevant for annual compiling

Not done. Not relevant yet.

2.2 Conclusion

All relevant tasks have been performed.

Last years issue with the IJB CPLD code has been solved. A new issue has appeared as the IJB card at the SINTEF lab has a HW fault that needs to be repaired. If SINTEF fails to repair the card, it has to be replaced with a new one.

3   Maintain Access to Hardware Source Code and Development Tools

This document is based on a memorandum from NOCA (in Norwegian), written by Nils Ole Kiplesund, R&D manager NOCA AS, which states that the work is done without any detected error, see Appendix A.

The HW maintenance covers support for producing new cards and possible modifications of the HW. The HW maintenance does not cover the maintenance of the CPLD code. (This maintenance is a part of the SW maintenance.)

The subcontractor NOCA is committed to maintain the needed tools and know-how for to carry out modifications on the HW.

The needed SW tools for to carry out modifications shall be kept on NOCA's servers.
The documentation / basis files for producing new HW and for to make modifications and then modified HW, shall each year be copied to CDs. This documentation / basis files includes needed proprietary libraries.

This delivery consists of a CD containing the following files:

#	Name	KEU art. nr	Fill reference NOCA	Sign
	TSS HW			
22.0	KMB-CCA	B2680-001	BOM-B2680-001_2005-06-07_KMB_Rev_A.xls	Ok
22.1	KMB Skjema PDF		Schematic_X0101-090_2005-06-07_KMB_Rev_A.pdf	Ok
22.2	KMB Skjema CAD		Orcad KMB Rev A 2005-06-07.zip	Ok
23.0	KMB PCB Gerber		60820009 KMB Rev A.zip	Ok
23.1	KMB PCB CAD		2008-09-05_KMB_Rev_A_VB98.zip	Ok
24.0	Backplane CCA	B2682-001	B5343-001_2005-06-14_Backplane_Rev_C.xls	Ok
24.1	Backplane Skjema PDF		X0101-091_2005-06-14_Backplane_Rev_C.pdf	Ok
24.2	Backplane Skjema CAD		Orcad Backplane Rev C 2005-06-14.zip	Ok
25.0	Backplane PCB Gerber	B3932-001	60820018 2005-06-09 Backplane Rev C.zip	Ok
25.1	Backplane PCB CAD		2008-09-05_Backplane_Rev_C_VB98.zip	Ok
26.0	Booster assy	B2684-001	BOM_B2684-001_2005-11-02_BPF_Rev_C.xls	Ok
27.0	SBF-CCA	B2688-001		
27.1	SBF Skjema PDF		Schematic_X0101-092_2005-11-02_BPF_Rev_C.pdf	Ok
27.2	SBF Skjema CAD		Orcad BPF Rev C 2005-11-02.zip	Ok
28.0	SBF PCB Gerber		60820019 2005-06-16 BPF Rev B.zip	Ok
28.1	SBF PCB CAD		2008-09-05_BPF_Rev_B_VB98.zip	Ok
29.0	SDF-CCA	B2681-001	B2681-001_2005-11-02_SDF_Rev_F.xls	Ok
29.1	SDF Skjema PDF		X0101-093_2005-11-02_SDF_Rev_F.pdf	Ok
29.2	SDF Skjema CAD		Orcad SDF Rev F 2005-11-02.zip	Ok
30.0	SDF PCB Gerber		60820017 2005-05-03 SDF Rev C.zip	Ok
30.1	SDF PCB CAD		2008-09-05_SDF_Rev_C_VB98.zip	Ok
	HCTP HW			
31.0	Power assy	B3913-001	B3913-001_HPB_Rev_C.xls	Ok
31.1	HPB Skjema PDF		X0101-094_HPB_ Rev_C.pdf	Ok
31.2	HPB Skjema CAD		Orcad HPB Rev C 2004-12-22.zip	Ok
33.0	HPB PCB Gerber		60820012 2005-01-28 HCTP Powerboard Rev B-PCB.zip	Ok
33.1	HPB PCB CAD		2008-09-05_HPB_Rev_B_VB98.zip	Ok
34.0	HMB assy	B4111-001		

35.0	HMB-CCA	B3915-001	B3915-001_2005-03-30_HMB_Rev_C.xls	Ok
35.1	HMB Skjema PDF		X0101-095_2005-03-30_HMB_ Rev_C.pdf	Ok
35.2	HMB Skjema CAD		Orcad HMB Rev C 2005-03-30.zip	Ok
36.0	HMB PCB Gerber	B3916-001	60820013 2005-01-28 HCTP Mainboard Rev C-PCB.zip	Ok
36.1	HMB PCB CAD		2008-09-05_HMB_Rev_C_VB98.zip	Ok
37.0	HDB assy	B4110-001		
38.0	HDB-CCA	B3917-001	B3917-001_2005-03-29_HDB_Rev_B.xls	Ok
38.1	HDB Skjema PDF		X0101-096_2005-03-29_HDB_ Rev_B.pdf	Ok
38.2	HDB Skjema CAD		Orcad HDB Rev B 2005-03-29.zip	Ok
39.0	HDB PCB Gerber	B3918-001	60820014 2005-01-28 HCTP Displayboard Rev B-PCB.zip	Ok
39.1	HDB PCB CAD		2008-09-05 HDB_Rev_A_VB98.zip	Ok
	CMCP HW			
40.0	CMB-CCA	B3928-001	Note: identical to KMB except 1553ctrl	
40.1	CMB Skjema PDF		Note: identical to KMB	
40.2	CMB Skjema CAD		Note: identical to KMB	
40.3	CMB PCB Gerber	B3929-001	Note: identical to KMB	
40.4	CMB PCB CAD		Note: identical to KMB	
42.0	CDB-CCA	B3930-001	B3930-001_2005-11-14_CDB_Rev_D.xls	Ok
42.1	CDB Skjema PDF		X0101-100_2005-11-14_CDB_Rev_D.pdf	Ok
42.2	CDB Skjema CAD		Orcad CDB Rev D 2005-11-14.zip	Ok
43.0	CDB PCB Gerber	B3931-001	60820016 2005-03-10 CDB Rev B.zip	Ok
43.1	CDB PCB CAD		2008-09-05_CDB_Rev_B_VB98.zip	Ok
	IJB HW			
44.0	IJB-CCA	B2629-004	BOM-B5397-001_2005-06-01_IJB_Rev_E.xls	Ok
44.1	IJB Skjema PDF		Schematic_X0101-214_2005-07-01_IJB_Rev_E.pdf	Ok
44.2	IJB Skjema CAD		Orcad IJB Rev E 2005-07-01.zip	Ok
45.0	IJB PCB Gerber	B4249-002	60870007 2005-07-01 IJB Rev_E.zip	Ok
45.1	IJB PCB CAD		2008-09-05_IJB_Rev_D_VB98.zip	Ok
	Temp copy			
46.0	TMP-BP	2010-01-12	2010-01-12_BP_TEST2009.rar	Ok
	Div			
47.0	Veribest 98 library		2009-01-30_NOCA_VBLIB.zip	Ok
47.1	Nettliste converter		2008-01-30_Netlist_Converter.zip	Ok
47.2	Orcad library		2009-01-30_NOCA_ORCADLIB.zip	Ok

Comments, period 2009-03-01 to 2010-02-28
According to the contract, a minor change has been performed on one of the cards. The test case of this period is the Backplane card (BP). A new resistor, PR7, is added and saved as TMP-BP. Then a complete, new production support has been produced, to verify the functionality of the SW tools. This documentation is gathered in 2010-01-12_BP_TEST2009.rar.

Comments, period 2008-03-01 to 2009-02-28
1. The files concerning HMB and HDB (except for the VB98 CAD files for HDB) are one release later / newer than stated in the contract, as some components (manufacturers) where changed in the production release.

2. The VB98 CAD files for the very last version of HDB are missing. The stored VB98 CAD files describe the last but one version. This implicate that the very last version can be reproduced, but if it should be modified, one has to take the last but one version as basis, update it to the very last version and then do the modification. The difference between the last but one and the very last version is given from the schematics.

3. The VB98 CAD files for the very last version of IJB are missing. The stored VB98 CAD files describe the last but one version. This implicate that the very last version can be reproduced, but if it should be modified, one has to take the last but one version as basis, update it to the very last version and then do the modification. The difference between the last but one and the very last version is given from the schematics.

4. According to the contract, a minor change has been performed on one of the cards, and a complete, new production support has been produced, to verify the functionality of the SW tools. This documentation is gathered in 2009-01-30_KPB_TEST2008.zip.

5. An error is detected in current, produced version of IJB (rev. E, page 13 and 18 in the schematic).
   The SPARE_ACK signal (pin 11C, J9) works in parallel with the CMDR_HTCH_ACK signal (pin 8C, J9).
   The reason for this is that both signals are controlled by signal PO_26 from CPLD U14. This CPLD has unused outputs, but the CPLD code has to be checked to see that one of the unused output can be used in case of future correction.
   The consequence of the detected error is that the SPARE_ACK signal can not be used in current revision of the card.

4 Maintain Software and Hardware release History

All software is subject to version control. No new releases have been issued in 2009.

Two different CD's, one for software and one for hardware have been sent to NAMSA. An identical set is stored at SINTEF. The content of the CD's are described in the previous Sections in this document.

5 Maintain SINTEF Competence on Software, Tools and Hardware Configuration

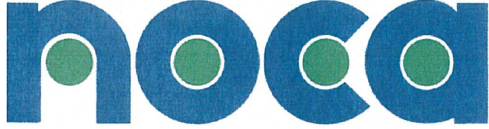The main activity in 2009 has been related to the IJB issue.

The original development staff is still engaged in SINTEF, thus education of new employees has not been necessary.

According to the SOW, SINTEF shall document the Hardware Identification Coding and DIP switches. There are no DIP switches, but the Hardware Identification Coding has been documented in a new release of the Interface Requirement Specification.

6 Maintain Competence on making Hardware Changes

NOCA AS has been involved in this activity. See Section 3 for details.

Appendix A: Memorandum from NOCA

NOTAT		noca
Tema/Prosjekt	SINTEF – Teknisk Vedlikehold	
Prosjektnummer	2221	
Forfatter	Nils Ole Kiplesund	
Opprettet Dato	12.01.2010	
Revidert Dato	30.01.2009 NOK	
	04.02.2009 NOK	
	24.02.2009 NOK	
	12.01.2010 NOK	

Innledning

En teknisk vedlikeholsavtale er inngått med SINTEF ref. Vedlikeholdsavtale TSS SIGNERT.pdf. Gjennom denne avtalen plikter NOCA AS til årlig å gjennomføre en oppdatering av underlag ifm KEU/TSS prosjektet til DVD/CDROM og oversendes SINTEF samt gjennomføre en endring for å teste ut vår "TOOLCHAIN" ifm utvikling av hardware som ble gjort på dette prosjektet. SW/FW samt CPLD kode har SINTEF selv tatt ansvaret for og skal ikke vedlikeholdes av NOCA gjennom denne avtalen. NOCA plikter i tillegg å vedlikeholde kompetansen på aktuelle verktøy.

Verktøy

Følgende verktøy skal etter avtalen være tilgjengelige og funksjonelle. Det vil ikke være nødvedig med vedlikeholdsavtale og påfølgende oppdateringer fra leverandør av disse pakkene, dvs SW versjon oppdateres ikke ifm denne avtalen

OrCAD V10.3 - Skjemategning. SW ligger elektronisk på \\saturn2\utvikling\Program\Veribest 98\Backup av CD og på orginale CD oppbevart fortrinnsvis i brannskap

Orc2pcb.awg – AWK script for konvertering av orcad nettliste til lesbart VB98 format
Gawk.exe – GNU awk interpreter.
Software ifm nettlistekonvertering finnes på følgende lokasjon:
\\Saturn2\Utvikling\Veribest_Lib\NOCA_VBLIB\Netlist_Converter

VB98 – Mønsterkortutlegg. SW ligger elektronisk \\Saturn2\Utvikling\Program\Veribest 98 og på orginale CD oppbevart fortrinnsvis i brannskap.

Avtaleperiode

Dokumentpakken (CD eller DVD) skal leveres SINTEF. Vedlikeholdsperiodene er som følger
Periode 1 (2008) <dd.mm.åå>: 01.03.08 til 28.02.09
Periode 2 (2008) <dd.mm.åå>: 01.03.09 til 28.02.10
Periode 3 (2008) <dd.mm.åå>: 01.03.10 til 28.02.11
…

Vedlegg till leveranse

Følgende liste skrives ut og vedlegges leveransen signert som en bekreftelse på at CD/DVD inneholder alle filene som er beskrevet i avtalen. Dokumentene ligger arkiverte følgende steder:

Beskrivelse	Lokasjon/URL
Elektriske skjema, CAD, XLS og PDF	\\Saturn2\Utvikling\Kunder\Sintef\Servo_Conv\10_Elektriske_Skjema \\saturn2\Kunder\Kværner Eureka\ITAS Junction Box\10_Elektriske_Skjema
Mønsterkortutlegg, CAD	\\Saturn2\Utvikling\Kunder\Sintef\Servo_Conv\11_Utlegg \\Saturn2\Kunder\Kværner Eureka\ITAS Junction Box\11_Utlegg
Mønsterkort (PCB) produksjonsunderlag, Gerber og PDF	\\Saturn2\Utvikling\Kunder\Sintef\Servo_Conv\16_PCB_Underlag \\Saturn2\Kunder\Kværner Eureka\ITAS Junction Box\16_PCB_Underlag

#	Navn	KEU art. nr	Filreferanse NOCA	Sign
	TSS HW			
22.0	KMB-CCA	B2680-001	BOM-B2680-001_2005-06-07_KMB_Rev_A.xls	Ok
22.1	KMB Skjema PDF		Schematic_X0101-090_2005-06-07_KMB_Rev_A.pdf	Ok
22.2	KMB Skjema CAD		Orcad KMB Rev A 2005-06-07.zip	Ok
23.0	KMB PCB Gerber		60820009 KMB Rev A.zip	Ok
23.1	KMB PCB CAD		2008-09-05_KMB_Rev_A_VB98.zip	Ok
24.0	Backplane CCA	B2682-001	B5343-001_2005-06-14_Backplane_Rev_C.xls	Ok
24.1	Backplane Skjema PDF		X0101-091_2005-06-14_Backplane_Rev_C.pdf	Ok
24.2	Backplane Skjema CAD		Orcad Backplane Rev C 2005-06-14.zip	Ok
25.0	Backplane PCB Gerber	B3932-001	60820018 2005-06-09 Backplane Rev C.zip	Ok
25.1	Backplane PCB CAD		2008-09-05_Backplane_Rev_C_VB98.zip	Ok
26.0	Booster assy	B2684-001	BOM_B2684-001_2005-11-02_BPF_Rev_C.xls	Ok
27.0	SBF-CCA	B2688-001		
27.1	SBF Skjema PDF		Schematic_X0101-092_2005-11-02_BPF_Rev_C.pdf	Ok
27.2	SBF Skjema CAD		Orcad BPF Rev C 2005-11-02.zip	Ok
28.0	SBF PCB Gerber		60820019 2005-06-16 BPF Rev B.zip	Ok
28.1	SBF PCB CAD		2008-09-05_BPF_Rev_B_VB98.zip	Ok
29.0	SDF-CCA	B2681-001	B2681-001_2005-11-02_SDF_Rev_F.xls	Ok
29.1	SDF Skjema PDF		X0101-093_2005-11-02_SDF_Rev_F.pdf	Ok
29.2	SDF Skjema CAD		Orcad SDF Rev F 2005-11-02.zip	Ok
30.0	SDF PCB Gerber		60820017 2005-05-03 SDF Rev C.zip	Ok
30.1	SDF PCB CAD		2008-09-05_SDF_Rev_C_VB98.zip	Ok
	HCTP HW			
31.0	Power assy	B3913-001	B3913-001_HPB_Rev_C.xls	Ok
31.1	HPB Skjema PDF		X0101-094_HPB_Rev_C.pdf	Ok
31.2	HPB Skjema CAD		Orcad HPB Rev C 2004-12-22.zip	Ok
33.0	HPB PCB Gerber		60820012 2005-01-28 HCTP Powerboard Rev B-PCB.zip	Ok
33.1	HPB PCB CAD		2008-09-05_HPB_Rev_B_VB98.zip	Ok
34.0	HMB assy	B4111-001		
35.0	HMB-CCA	B3915-001	B3915-001_2005-03-30_HMB_Rev_C.xls	Ok
35.1	HMB Skjema PDF		X0101-095_2005-03-30_HMB_Rev_C.pdf	Ok
35.2	HMB Skjema CAD		Orcad HMB Rev C 2005-03-30.zip	Ok
36.0	HMB PCB Gerber	B3916-001	60820013 2005-01-28 HCTP Mainboard Rev C-PCB.zip	Ok
36.1	HMB PCB CAD		2008-09-05_HMB_Rev_C_VB98.zip	Ok
37.0	HDB assy	B4110-001		

38.0	HDB-CCA	B3917-001	B3917-001_2005-03-29_HDB_Rev_B.xls	Ok
38.1	HDB Skjema PDF		X0101-096_2005-03-29_HDB_ Rev_B.pdf	Ok
38.2	HDB Skjema CAD		Orcad HDB Rev B 2005-03-29.zip	Ok
39.0	HDB PCB Gerber	B3918-001	60820014 2005-01-28 HCTP Displayboard Rev B-PCB.zip	Ok
39.1	HDB PCB CAD		2008-09-05 HDB_Rev_A_VB98.zip	Ok
	CMCP HW			
40.0	CMB-CCA	B3928-001	Note: identisk med KMB unntatt 1553ctrl	
40.1	CMB Skjema PDF		Note: identisk med KMB	
40.2	CMB Skjema CAD		Note: identisk med KMB	
40.3	CMB PCB Gerber	B3929-001	Note: identisk med KMB	
40.4	CMB PCB CAD		Note: identisk med KMB	
42.0	CDB-CCA	B3930-001	B3930-001_2005-11-14_CDB_Rev_D.xls	Ok
42.1	CDB Skjema PDF		X0101-100_2005-11-14_CDB_Rev_D.pdf	Ok
42.2	CDB Skjema CAD		Orcad CDB Rev D 2005-11-14.zip	Ok
43.0	CDB PCB Gerber	B3931-001	60820016 2005-03-10 CDB Rev B.zip	Ok
43.1	CDB PCB CAD		2008-09-05_CDB_Rev_B_VB98.zip	Ok
	IJB HW			
44.0	IJB-CCA	B2629-004	BOM-B5397-001_2005-06-01_IJB_Rev_E.xls	Ok
44.1	IJB Skjema PDF		Schematic_X0101-214_2005-07-01_IJB_Rev_E.pdf	Ok
44.2	IJB Skjema CAD		Orcad IJB Rev E 2005-07-01.zip	Ok
45.0	IJB PCB Gerber	B4249-002	60870007 2005-07-01 IJB Rev_E.zip	Ok
45.1	IJB PCB CAD		2008-09-05_IJB_Rev_D_VB98.zip	Ok
	Tempkopi			
46.0	TMP-BP	2010-01-12	2010-01-12_BP_TEST2009.zip	Ok
	Diverse			
47.0	Veribest 98 bibliotek		2009-01-30_NOCA_VBLIB.zip	Ok
47.1	Nettliste converter		2008-01-30_Netlist_Converter.zip	Ok
47.2	Orcad Bibliotek		2009-01-30_NOCA_ORCADLIB.zip	Ok

Tabell 1: Sjekkliste for innhold

Kommentar til Tempkopi:
Som utgangspunkt for testing av programvaren har vi brukt BP som case. Dokumentasjon på endringene som er gjort ligger i 2010-01-12_BP_TEST2009.zip. Se også readme.txt i arkivfilen for detaljer angående fremgangsmåte. Vi kan bekrefte at våre verktøy fungerer tilfredstillende og at vi er i stand til å gjennomføre endringer ved forespørsel.

Avvik:
Ved nærmere ettersyn viser det seg at vi mangler VB98 CAD filer for HDB revisjon B. Vi har Orcad designfiler og produksjonsunderlag slik at vi ved fremtidige anledninger kan produsere opp f.eks reservedeler. Hvis vi skal lage et nytt mønsterkortunderlag må vi ta utgangspunkt i revisjon A. Rev. A av VB98 CAD filer er vedlagt.

IJB Rev. D har en feil i skjemaet på side 13. Logisk sett burde CMDR_HTCH_ACK være styrt av PO_25 og SPARE_ACK være styrt av PO_26. I rev. D er begge utgangene styrt av PO_26 dvs at begge utgangene vil til enhver tid ha samme nivå. CPLD U14 på side 6 har mange ledige pinner men det må verifiseres i CPLD koden at pinnene kan brukes hvis vi en fremtidig revisjon ønsker å korrigere dette
VB98 design filer mangler for Revisjon E

Endringer ifm rev 24.02.09

KMB Orcad, BOM og PDF av skjema er oppdatert fra Sintefs arkiv, nyere dato enn NOCA
BPF: oppdatert fra Sintefs arkiv til revisjon C
HPB: Oppdatert fra Sintef Prod. Underlag (inneholder DXF i tillegg)
HMB: Oppdatert fra Sintef Prod. Underlag (inneholder DXF i tillegg)
IJB: Oppdatert fra Sintef arkiv til Rev. E
Orcad skjema arkiv-filer er endret slit at dato i filnavnet representeres faktisk dato i designet

Alle filene vedrørende vedlikeholdsavtalen er kopiert feilfritt til CD og oversendt i to eksemplarer til SINTEF.
NOCA bekrefter ved dette at vår del av vedlikeholdsavtalen er oppfylt for denne perioden

Nils Ole Kiplesund
R&D Manager NOCA AS