Cross Divisional Group - Software, Methods and Tools

BOSCH

From	Our Reference	Tel	Fax	Abstatt
	Ingo Ehlert	07062/911-4007		11.01.2011

Requirements specification

Recipient

Cc

Topic   **Bootloader CMP Integration Specification**

1   Introduction

The purpose of this document is to describe the changes required in a CC-AS project to integrate a Bootloader CMP.

Important: This document serves as a template parts in italic need to be adapted as defined according to the project specific needs.

2   Component & File List

The following components and files have to be integrated and/or adapted:

Name	Type	Version	Path
MTC_Configuration_BB*xxxxx*.XML	revision		\PRJ\Gen9Config
MTC_MKS_MakeOptions_BB*xxxxx*.XML	revision		\PRJ\Gen9Config
MTC_MKS_AddHexBlockConfig_Flash09_BB*xxxxx*.XML	revision		\PRJ\Gen9Config
MTC_MKS_AddHexBlockConfig_Flashdrv09_BB*xxxxx*.XML	revision		\PRJ\Gen9Config
BB*xxxxx*_ECA.lcf	revision		\PRJ
BB*xxxxx*_ECB.lcf	revision		\PRJ
BB*xxxxx*_ECC.lcf	revision		\PRJ
BB*xxxxx*_ECD.lcf	revision		\PRJ
BB*xxxxx*_ECE.lcf	revision		\PRJ
CMHSW09_CSWPRSettings_BB*xxxxx*.h	revision		\Psw\HSW\CMHSW_Config\HDR\HSW
CMPSW09_Settings_BB*xxxxx*.h	revision		\Psw\CMPSW_Config\HDR\PSW
LCF09_HEXBLOCKS_ALLOCATION_BB*xxxxx*.C	revision		\Psw\HSW\CMHSW_Config\SRC
CM_SWIdentification_BB*xxxxx*.h	revision		\Hdr
FLASH09_BB*xxxxx*	configuration		\Psw\DNC\FLASH
FLASH09_BootManager_BB*xxxxx*	configuration		\Psw\DNC\FLASH
FLASH09_COMMON	configuration		\Psw\DNC\FLASH
FLASH09_CUBAS_CAN	configuration		\Psw\DNC\FLASH
FLASH09_*RB01*	configuration		\Psw\DNC\FLASH
FLASH09_TMS570_COMMON	configuration		\Psw\DNC\FLASH
FLASHDRV09_BB*xxxxx*	configuration		\Psw\DNC\FLASH

From	Our Reference	Tel	Fax	Abstatt
	Ingo Ehlert	07062/911-4007		11.01.2011

Requirements specification

Bootloader CMP Integration Specification

BOSCH

From	Our Reference	Tel	Fax	Abstatt
	Ingo Ehlert	07062/911-4007		11.01.2011

Requirements specification

Bootloader CMP Integration Specification

3   Detailed Description

3.1   Build and MakeOptions

MTC_Configuration_BB*xxxxx*.XML
MTC_MKS_MakeOptions_BB*xxxxx*.XML
MTC_MKS_AddHexBlockConfig_Flash09_BB*xxxxx*.XML
MTC_MKS_AddHexBlockConfig_Flashdrv09_BB*xxxxx*.XML

3.1.1   Additional Hexblock builds

The Bootloader and the Flashdriver are build in an external build run. Therefore the AddHexBlockConfig for Flash09 and FlashDrv09 configures the included and excluded files / folders.
Also the direct link to the build specific linker files and the build name has to be given.

Example:

```
?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<XMLAddHexBlocks xmlns="http://de.bosch.com/SharCC/DB">
    <AddHexBlockList>
        <UsedDefineName>FLASH09</UsedDefineName>
        <LCFFile>..\PSW\DNC\FLASH\FLASH09_BBxxxxx\prj\Flash09_BBxxxxx.lcf</LCFFile>
        <Configuration>
            <DynamicRules>
                <IncludeFolderList>PSW\DNC\FLASH.*</IncludeFolderList>
                <ExcludeFolderList>PSW\DNC\FLASH\FLASHDRV.*</ExcludeFolderList>
            </DynamicRules>
            <StaticRules>
                <IncludeFileList>MIC09_BootblockServiceFunc_COMMON.c</IncludeFileList>
                 ..
                <ExcludeFileList>FLASH09_InterfaceFsw_BBxxxxx.c</ExcludeFileList>
            </StaticRules>
        </Configuration>
    </AddHexBlockList>
</XMLAddHexBlocks>
```

The path to the lcf file has to be exact, the include component names can take use of the '.*' place-holder. ('.*' is a logical expression meaning any character in any number)

To use this additional HexBlock configurations the MTC_Configuration_BB file has to configure both addhexblock.xml files in its AddHexBlockConfigList.

Example:

```
<AddHexBlockConfig>
        <AddHexBlockConfigFileList> ..\PRJ\Gen9Config\MTC_MKS_AddHexBlockConfig_Flash09_BBxxxxx.XML
        </AddHexBlockConfigFileList>
        <AddHexBlockConfigFileList> ..\PRJ\Gen9Config\MTC_MKS_AddHexBlockConfig_Flashdrv09_BBxxxxx.XML
        </AddHexBlockConfigFileList>
</AddHexBlockConfig>
```

From	Our Reference	Tel	Fax	Abstatt
	Ingo Ehlert	07062/911-4007		11.01.2011

Requirements specification

Bootloader CMP Integration Specification

3.1.2 Customer-, BBNumber Map and Zipfile Handling

The MTC_MKS_MakeOptions gives the possibility to add replacement
names for Project and Customer.
The required BB-Number for *RB01* CMP is ***xxxxx***.
The required Customer Name for RB01 CMP is **RB01**.
A specific Layout name is not required.

Example:

```
<CustomerMap>CanRef, RB, RBRef, RBRefCanDev, RBRefCanStd, RBRefFlxrDev, RB01</CustomerMap>
<BBMap>29888, 39887, 29828, 29930, 90112, xxxxx, </BBMap>
```
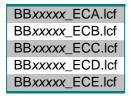
Furthermore the MTC_MKS_MakeOptions may define zip files which should
be unpacked during the TMK run.
For the Bootloader CMPs at least the extraction of the CUBAS configuration
is required.

```
<ZipFileInfoList>
        <ZipFileName>FLASH09_CUBAS_BBxxxxx.zip</ZipFileName>
        <FileList>..\Psw\DNC\FLASH\FLASH09_BBxxxxx\cubas\FLASH09_CUBAS_BBxxxxx.tfl</FileList>
        <Password></Password>
        <ExtSource></ExtSource>
        <TFLUsage>RELATIVE_PRJ</TFLUsage>
</ZipFileInfoList>
```

The path to the filelist (tfl) has to match.

3.2 Linker Files

The linker file defines the layout of the ROM and RAM area. The Bootloader
part is usually defined by the bootblock CR-P. **Any changes need to be re-
viewed by the Bootloader expert as the linker file is depending on the
settings made in the local lcf for Bootloader and FlashDriver build.**

BB*xxxxx*_ECA.lcf
BB*xxxxx*_ECB.lcf
BB*xxxxx*_ECC.lcf
BB*xxxxx*_ECD.lcf
BB*xxxxx*_ECE.lcf

3.3 Project Specific Configuration

BOSCH

From	Our Reference	Tel	Fax	Abstatt
	Ingo Ehlert	07062/911-4007		11.01.2011

Requirements specification

Bootloader CMP Integration Specification

The project specific configuration need to enable and set switches required to switch on the bootloader features.

CMHSW09_CSWPRSettings_BB*xxxxx*.h
CMPSW09_Settings_BB*xxxxx*.h
LCF09_HEXBLOCKS_ALLOCATION_BB*xxxxx*.C
CM_SWIdentification_BB*xxxxx*.h

3.3.1   CMHSW09_CSWPRSettings_BB*xxxxx*.h

Switch	Value
FS_BootblockSize	*FS_BootblockSize_32KB*
FS_CalblockSize	*FS_CalblockSize_32KB*
FS_HexBlksOrder	*FS_HexBlksOrder_BootCalFsw*
FS_BoschSignature	*FS_BoschSignature_Off*

3.3.2   CMPSW09_Settings_BB*xxxxx*.h

Switch	Value
FS_RBBootblock	*FS_RBBootblock_EnabledWithEeprom*
FS_FlashDriverAutoSAR	*FS_FlashDriverAutoSAR_Off*
FS_FlashDriverSingleByteAccess	*FS_FlashDriverSingleByteAccess_Yes*
FS_FlashDriverAutoAlignment	*FS_FlashDriverAutoAlignment_Yes*
C_maxNumberOfBytes2Program_ul	*4095*

3.3.3   LCF09_HEXBLOCKS_ALLOCATION_BB*xxxxx*.C

This file defines the constant data field according to the hexfile handling document.
"C:\tsdst\CHK\hexfile_handling_in_Gen9_projects.pdf"
As there are major dependencies to the linker file changes here need to be reviewed by the Flash CR-P.

3.3.4   CM_SWIdentification_BB*xxxxx*.h

The SW-Identification file defines the customer specific logistic data. The define names have to remain constant. **The parameters have to be reviewed and changed upon each baseline by the CSW-PR.**

ParameterName	Description	Format	Example Value
CM_DataCompabilityN	*DataCompabilityNumber*	*2 Byte Binary: 0xYYYY*	*0x0100*

From	Our Reference	Tel	Fax	Abstatt
	Ingo Ehlert	07062/911-4007		11.01.2011

Requirements specification

Bootloader CMP Integration Specification

umber	has to be changed each time the application and/or calibration blocks are no longer compatible to a prior application baseline	

From	Our Reference	Tel	Fax	Abstatt
	Ingo Ehlert	07062/911-4007		11.01.2011

Requirements specification

Bootloader CMP Integration Specification

4   Flash Bootloader Components

The bootloader components need to be placed in the path defined by the additional hexblock configuration and make option files.

> FLASH09_BB*xxxxx*
> FLASH09_BootManager_BB*xxxxx*
> FLASH09_COMMON
> FLASH09_CUBAS_CAN
> FLASH09_GM01
> FLASH09_TMS570_COMMON
> FLASHDRV09_BB*xxxxx*

If the components are used in other projects (different BB Number) and changes to the BB specific components are necessary the changed files and the component has to be renamed to the new BB- Number.
Changes to the CMP requires a feedback from CMP-RP.
Changes to a COMMON component have to be discussed with the Bootloader Mainstream responsible.