Upgrading ECU's on BMW F11 520d

Disclaimer: All content in this document is to be seen as guidelines. No one but yourself can take responsibility if you break something as a consequence of following this guide. The author can in NO WAY be held liable or responsible if you mess up something / anything.

Remember always to create a backups before starting an endeavour like this!

All this could not have been done without primarily shawnsheridan @ bimmerfest and a bunch of other users.

Prerequisites: ENET cable, E-Sys 3.26.0, PsdZData files (54.0 is used in this guide). It's important that the PsdZData files are the FULL version as the Lite version does not include all necessities for flashing. And last prerequisite: a BMW F10 or F11. I'm doing this on my F11 520d. This guide should work for all Fxx chassis.

E-Sys 3.26.0 is used for screen dumps. Other versions may differ slightly.

In this document, I'll be upgrading these ECU's:

- CMB_MEDIA
- HU_CIC
- KOMBI
- ZGW

The steps for upgrading other ECU's should be the same as doing these four. Just remember to identify the dependencies and select appropriately in step 15 in the below procedure.

When flashing involves ZGW it is widely said that the ZGW module should be updated BEFORE other modules. The TAL (transaction list) generated by E-Sys should take care of this. But if you want, you could flash the ZGW all by itself and then restart and do the rest. The steps remain the same.
Flashing all modules at once is also as easy as flashing individual modules. Just select all the modules in step 15 (still blFlash, swDeploy, cdDeploy, and ibaDeploy columns)

HU_CIC Depends (PreRequisites) on: 38 + 14 (BOTH ZGW)
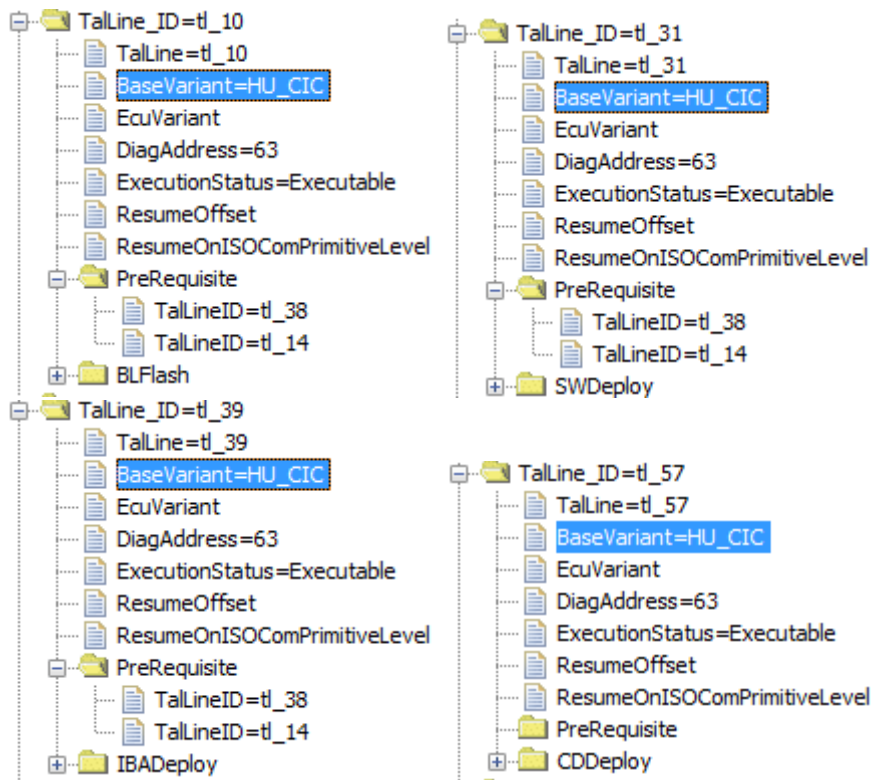KOMBI Depends on: 38 + 10 + 14 + 53 + 57 (ZGW + HU_CIC + ZGW + CMB_MEDIA + HU_CIC)
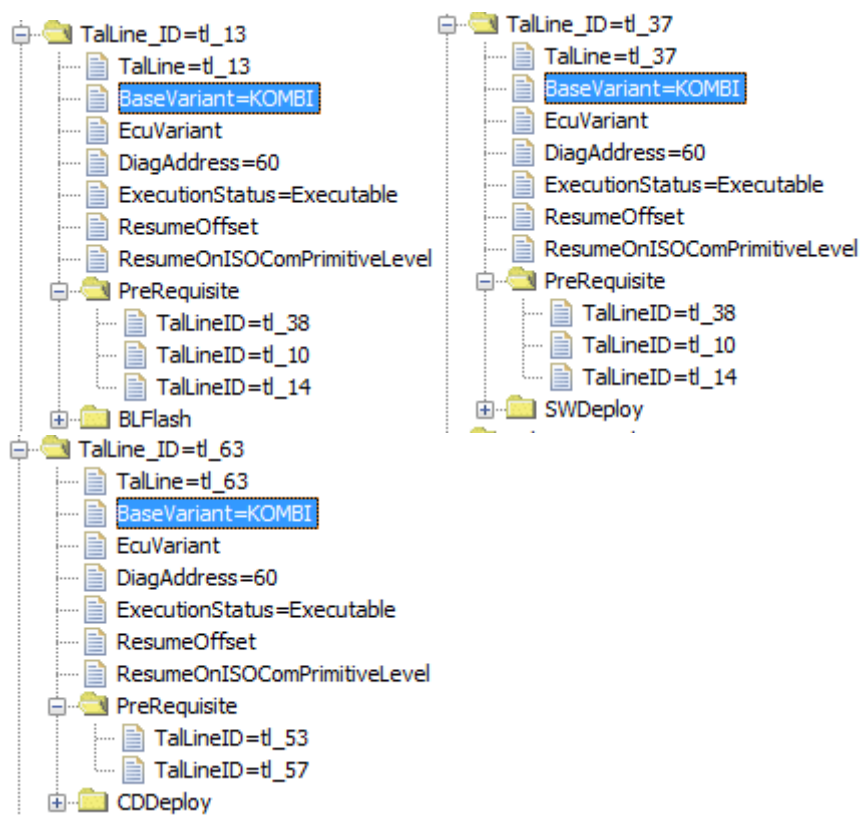CMB_MEDIA Depends on: 57 (HU_CIC)
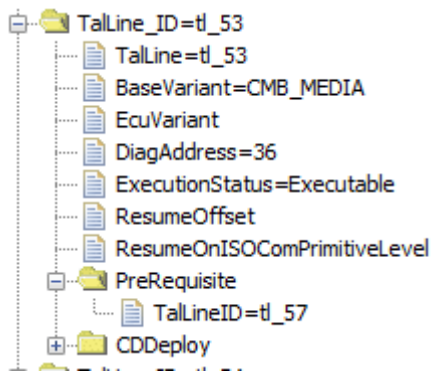ZGW does not have dependencies.

How to identify dependencies:
http://www.bimmerfest.com/forums/showpost.php?p=8688725&postcount=18

HU_CIC:

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```
├─ TalLine_ID=tl_10                          ├─ TalLine_ID=tl_31
│  ├─ TalLine=tl_10                          │  ├─ TalLine=tl_31
│  ├─ BaseVariant=HU_CIC                     │  ├─ BaseVariant=HU_CIC
│  ├─ EcuVariant                             │  ├─ EcuVariant
│  ├─ DiagAddress=63                         │  ├─ DiagAddress=63
│  ├─ ExecutionStatus=Executable            │  ├─ ExecutionStatus=Executable
│  ├─ ResumeOffset                           │  ├─ ResumeOffset
│  ├─ ResumeOnISOComPrimitiveLevel          │  ├─ ResumeOnISOComPrimitiveLevel
│  ├─ PreRequisite                           │  ├─ PreRequisite
│  │  ├─ TalLineID=tl_38                     │  │  ├─ TalLineID=tl_38
│  │  └─ TalLineID=tl_14                     │  │  └─ TalLineID=tl_14
│  └─ BLFlash                                │  └─ SWDeploy
├─ TalLine_ID=tl_39
│  ├─ TalLine=tl_39                          ├─ TalLine_ID=tl_57
│  ├─ BaseVariant=HU_CIC                     │  ├─ TalLine=tl_57
│  ├─ EcuVariant                             │  ├─ BaseVariant=HU_CIC
│  ├─ DiagAddress=63                         │  ├─ EcuVariant
│  ├─ ExecutionStatus=Executable            │  ├─ DiagAddress=63
│  ├─ ResumeOffset                           │  ├─ ExecutionStatus=Executable
│  ├─ ResumeOnISOComPrimitiveLevel          │  ├─ ResumeOffset
│  ├─ PreRequisite                           │  ├─ ResumeOnISOComPrimitiveLevel
│  │  ├─ TalLineID=tl_38                     │  ├─ PreRequisite
│  │  └─ TalLineID=tl_14                     │  └─ CDDeploy
│  └─ IBADeploy
```

KOMBI:

```
├─ TalLine_ID=tl_13                          ├─ TalLine_ID=tl_37
│  ├─ TalLine=tl_13                          │  ├─ TalLine=tl_37
│  ├─ BaseVariant=KOMBI                      │  ├─ BaseVariant=KOMBI
│  ├─ EcuVariant                             │  ├─ EcuVariant
│  ├─ DiagAddress=60                         │  ├─ DiagAddress=60
│  ├─ ExecutionStatus=Executable            │  ├─ ExecutionStatus=Executable
│  ├─ ResumeOffset                           │  ├─ ResumeOffset
│  ├─ ResumeOnISOComPrimitiveLevel          │  ├─ ResumeOnISOComPrimitiveLevel
│  ├─ PreRequisite                           │  ├─ PreRequisite
│  │  ├─ TalLineID=tl_38                     │  │  ├─ TalLineID=tl_38
│  │  ├─ TalLineID=tl_10                     │  │  ├─ TalLineID=tl_10
│  │  └─ TalLineID=tl_14                     │  │  └─ TalLineID=tl_14
│  └─ BLFlash                                │  └─ SWDeploy
├─ TalLine_ID=tl_63
│  ├─ TalLine=tl_63
│  ├─ BaseVariant=KOMBI
│  ├─ EcuVariant
│  ├─ DiagAddress=60
│  ├─ ExecutionStatus=Executable
│  ├─ ResumeOffset
│  ├─ ResumeOnISOComPrimitiveLevel
│  ├─ PreRequisite
│  │  ├─ TalLineID=tl_53
│  │  └─ TalLineID=tl_57
│  └─ CDDeploy
```

CMB_MEDIA:

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```
TalLine_ID=tl_53
    TalLine=tl_53
    BaseVariant=CMB_MEDIA
    EcuVariant
    DiagAddress=36
    ExecutionStatus=Executable
    ResumeOffset
    ResumeOnISOComPrimitiveLevel
    PreRequisite
        TalLineID=tl_57
    CDDeploy
```

ZGW:

```
TalLine_ID=tl_14                         TalLine_ID=tl_38
    TalLine=tl_14                            TalLine=tl_38
    BaseVariant=ZGW                          BaseVariant=ZGW
    EcuVariant                               EcuVariant
    DiagAddress=10                           DiagAddress=10
    ExecutionStatus=Executable               ExecutionStatus=Executable
    ResumeOffset                             ResumeOffset
    ResumeOnISOComPrimitiveLevel             ResumeOnISOComPrimitiveLevel
    PreRequisite                             PreRequisite
    BLFlash                                  SWDeploy
```

Basic steps (src: http://www.bimmerfest.com/forums/showpost.php?p=8179840&postcount=29):

1. Connect external charger (at least 50AMPs, preferably 70AMPs) to the car battery. Connect laptop to power supply. **This step is essential!**
2. Turn lamp switch to parking light – this will keep the ignition on beyond 20 minutes. (src: http://www.bimmerfest.com/forums/showthread.php?p=8625168&highlight=parking+light+switch#post8625168). Please refer to Appendix B for further info regarding the light switch and the 20 minutes.
3. Connect via "Connection via Gateway URL" (src: http://www.bimmerfest.com/forums/showthread.php?t=698424, post #6) (else flashing ZGW will fail)

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→
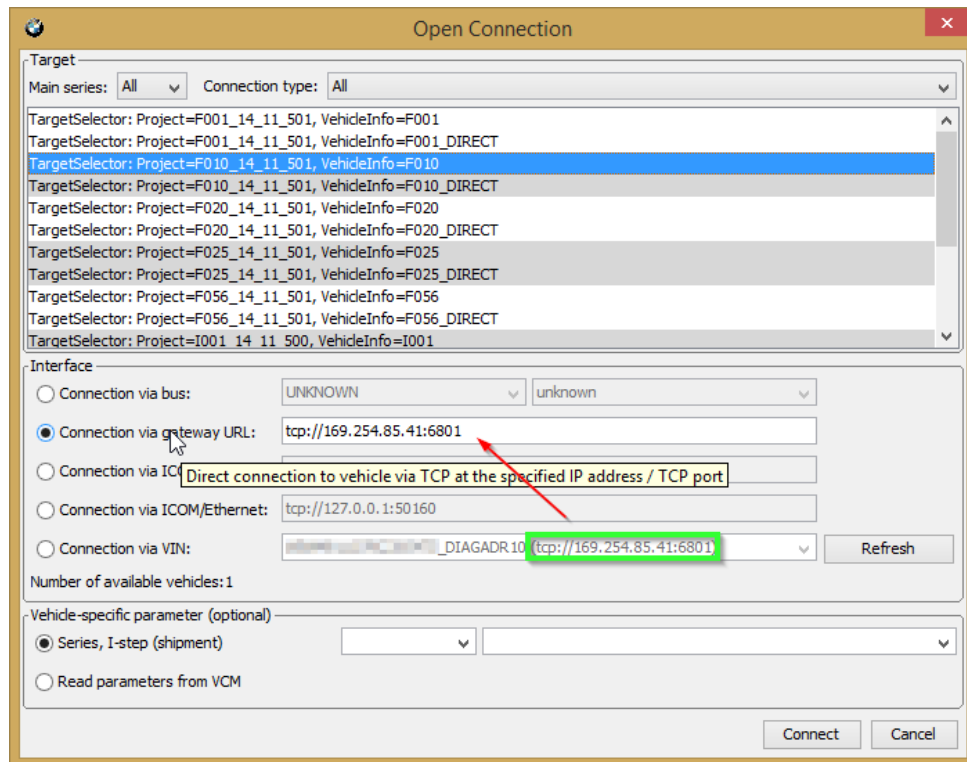
4. Select Comfort Mode → TAL Calculating

5. Read and save FA

→

6. Activate FA
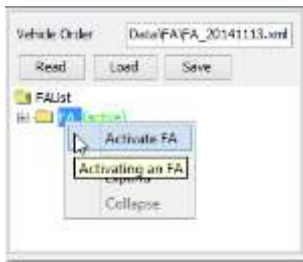
7. Read and save SVT Actual as "SVT_ist"
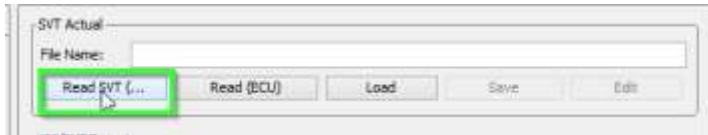
8. Create an SVT Target:
   a. Select Complete Flash
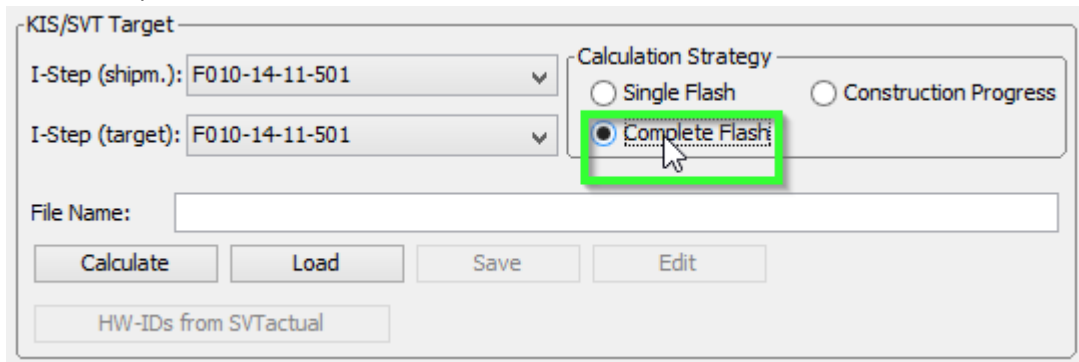
   b. Select I-Step (shipm.) to match vehicles shipment I-Step level
      (src: http://x3.xbimmers.com/forums/showthread.php?t=715297)
      i. Select Expert Mode VCM button
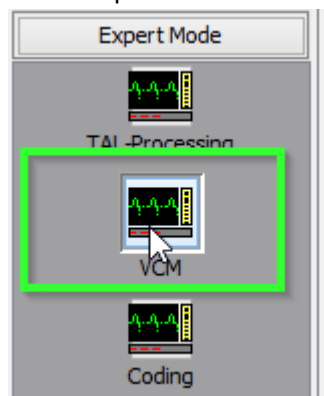
ii. On the right bottom box, select "Master" tab
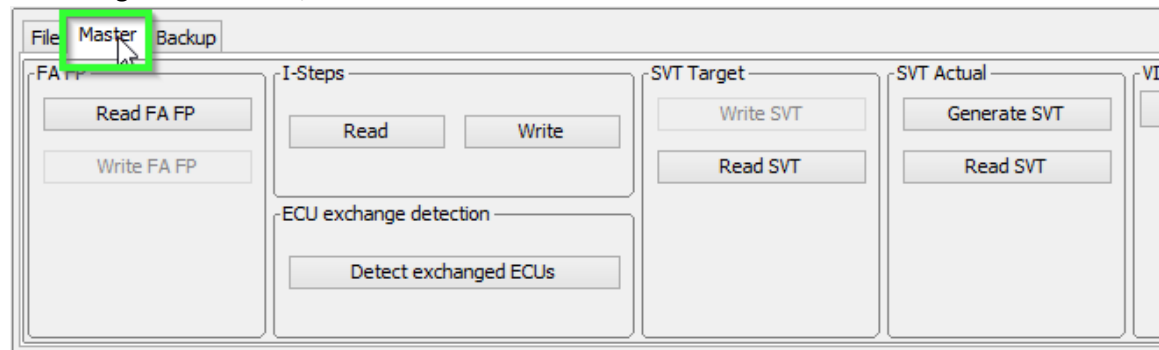
iii. In I-Steps box, click on "Read" button.
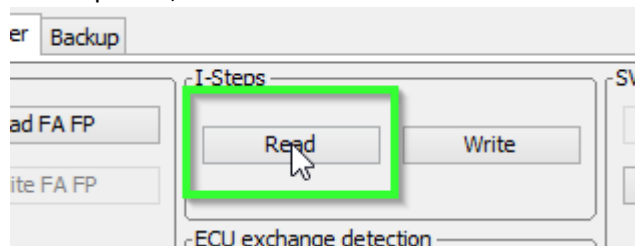
iv. Integration Steps boxes above will be populated with the data. Note down the I-Step (Shipment).
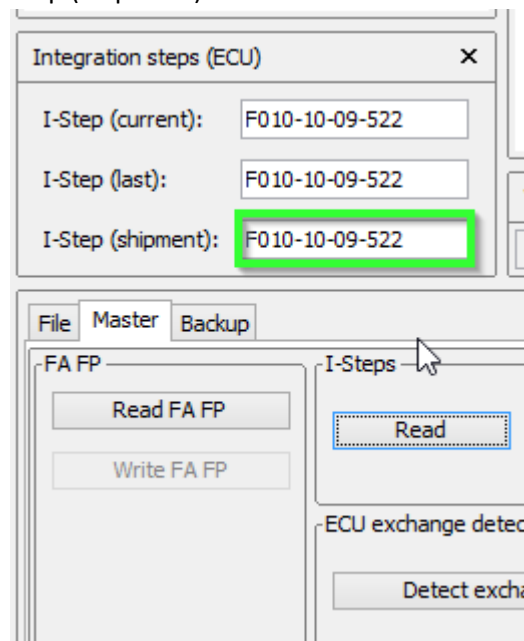
c. I-Step (target.) will be unselectable as it is fixed based on current PSdZData I-Level. Select the appropriate level in I-Step (shipm.) as obtained in step above

d. Do a KIS/SVT Target Calculation and Save as "SVT_soll"

→

→

e. Do a TAL Calculation and Save as "SVT_tal"

→
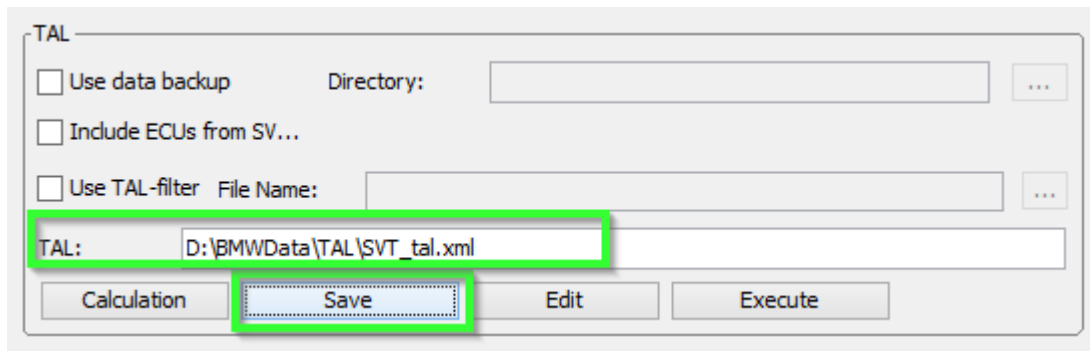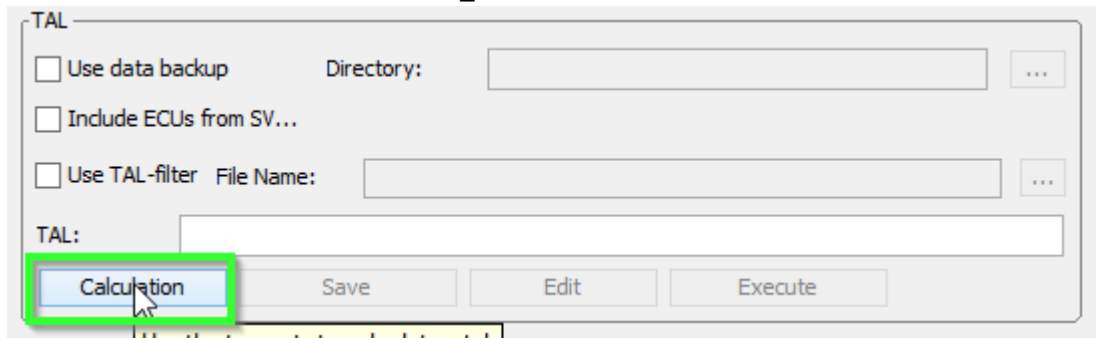
9. Go to Expert Mode → TAL-Processing
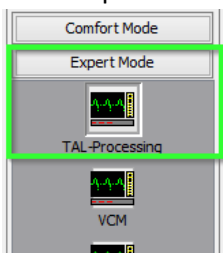
10. Load TAL [SVT_tal) created in step 8.e
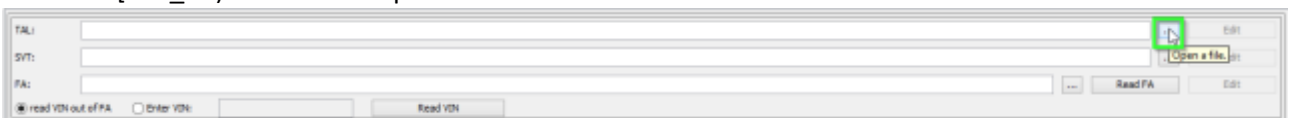
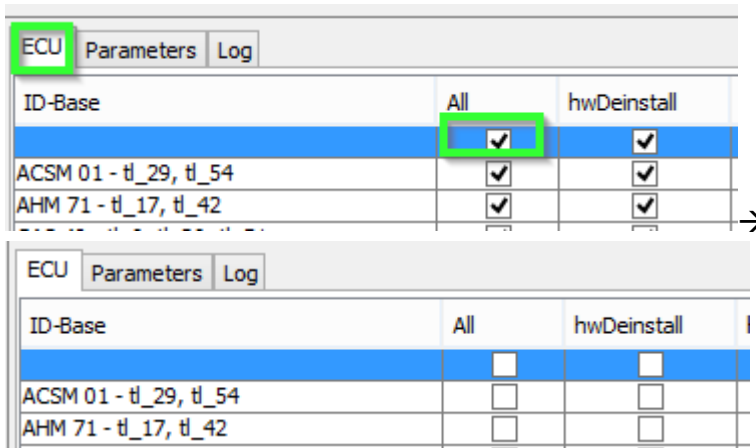11. Load SVT Target ("SVT_soll") created in step 8.d
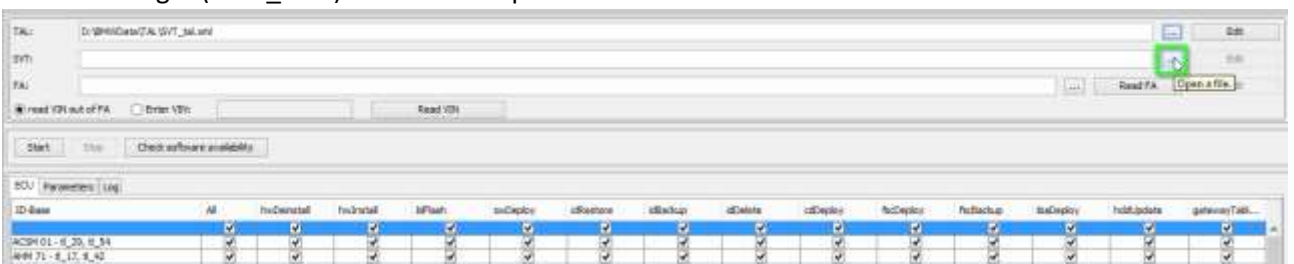
12. Click the "Read FA" button
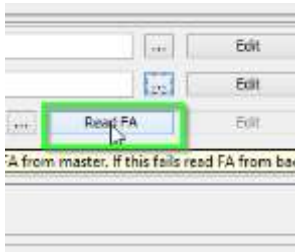
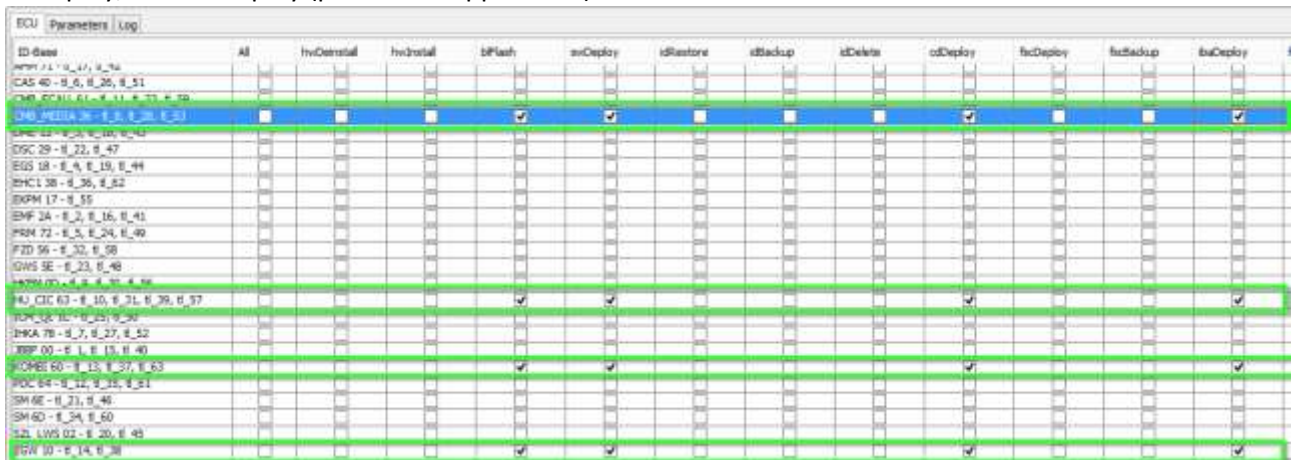→this will result in the FA_aus_VCM.xml file:

13. Check radio button for "read VIN out of FA" and click the "Read VIN" button
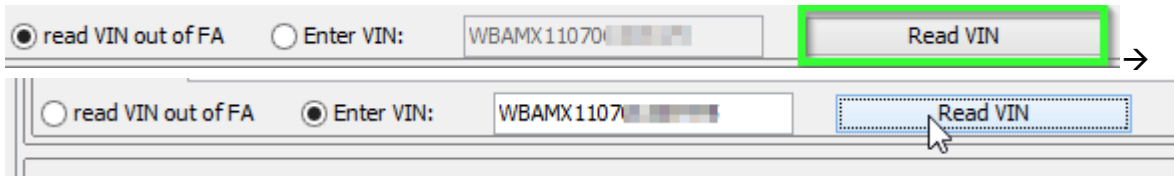
14. On ECU Tab, uncheck let top box in column "All" (All checked boxes should toggle to unchecked)
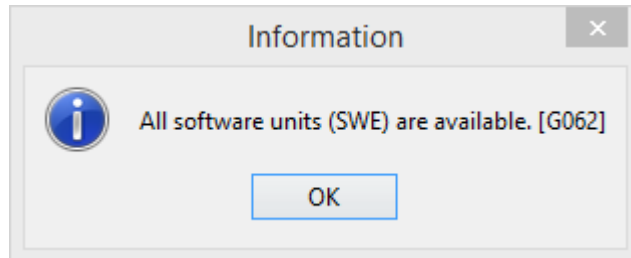

15. On ID Base Row for HU_CIC, CMB_MEDIA, KOMBI and ZGW check the boxes in blFlash, swDeploy, cdDeploy, and ibaDeploy (please see Appendix C) columns.
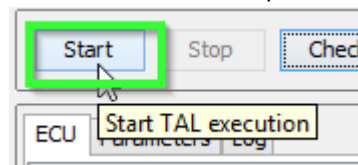

16. Press Check software availability (this, among other, ensures that you have the correct PSdZdata and the FULL version of them)

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→
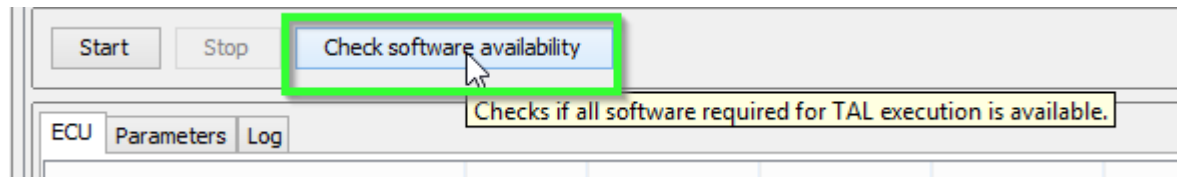
17. Press Start and it will proceed with processing TAL to flash Kombi with new firmware

18. Cross your fingers and watch it work

Troubleshooting

If coding ACSM, the airbag needs be locked. This can be done by using the following procedure (src: http://www.bimmerfest.com/forums/showthread.php?t=796371 post #3) (another good src: http://www.bimmerfest.com/forums/showthread.php?t=809906).

E-Sys Transmitter:

1) Click "External Applications" in the left menu.

2) Click "External Application"

3) Double-click "Transmitter"

4) Double-click "ACSM verriegelung_schreiben"

Appendix A – list of ECU's

Thanks to shawnsheridan on bimmerfest.com for compiling this list. (src: http://www.bimmerfest.com/forums/showthread.php?t=808412).

AAG - Trailer Hitch Module

ACC - Active Cruise Control

ACSM - Advanced Crash and Safety Management

AHM - Trailer module

AMP - Amplifier

AMPH - HiFi Amplifier

AMP_TOPHB - Top HiFi Amplifier/System

AMP - Amplifier/System

AMP_TOPHB - Top HiFi Amplifier/System

ASA - Active steering

ASD - Active Sound

BDC - Body Domain Controller (ZGW, FEM, REM, SZL, IHKA, TCB, CAS, JBBF Combined)

CAS - Car Access System

CID - Central Information Display

CMB_ECALL - Combox Emergency Caller

CMB_MEDIA - Combox Media

CVM - Soft top module (Convertable Top)

DKOMBI - MFID Instrument cluster (6WB)

DDE - Digiatl Diesel Electronics

DME - Digital Motor Electronics

DSC - Dynamic Stability Control

DWA - Immobilizer (Alarm)

DVDC - DVD Changer

EGS - Electronic Transmission Control Unit

EHA - Electronic ride-height control

EHC - Electronic ride-height control

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EKPM - Electronic fuel pump control

EMF - Electromechanical parking brake

EPS - Electronic power steering

FEM_BODY - Front electronics module (ZGW, FRM, CAS, and JBBF Combined)

FEM_GW - Front electronics module gateway

FKA - Rear-cabin automatic A/C

FLA - Automatic High Beam Camera Only

FRM - Footwell module (Lighting)

FRR - Active cruise control

FZD - Function unit roof

GWS - Gear selection switch

HKFM - Rear Lift-Lid (Trunk)

HKL - Rear Lift-Lid (Trunk)

HU_ENTRY - Head Unit Entry Level (no iDrive System)

HU_CHAMP (Head Unit CIC Mid) (iDrive system)

HU_CIC - Head Unit CIC High (iDrive system)

HU_NBT - Head Unit NBT (iDrive system)

HC2 - Lane Change Warning

HUD - Heads-Up Display

ICM_QL - Integrated Chassis Management

ICM_V - Integrated Chassis Management Vertical (Vertical dynamics management)

IHKA - Integrated automatic heating/air conditioning system

JBBF - Junction box electronics

JBE - Junction box electronics

KAFAS - Cameras System (LDW, AHB, SLI)

KOMBI - Instrument cluster

LHM - LED Headlights main light modules (fan and LEDs for the cornering light, low-beam and high-beam headlights).

NIVI - Night Vision Camera

PDC - Park distance control

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PMA2 - Parking Assist

RDC - Tyre pressure control

REM - Rear Electronics Module

RSE - Rear Seat Entertainment

SM - Seat module / Seat Memory

SME - Accumulator-management electronics

SMBF - Seat module / Seat Memory Passenger

SZL_LWS - Steering column control unit

SVT - Servotronic

TCB - Telematics Communications Box (BMW Assist)

TMS - LED Headlights (stepper motors for the Adaptive LED Headlights and LEDs for the side marker light, the positioning light and the turn indicator)

TRSVC -All around view camera

TBX - iDrive Controller Touch Handwriting Module

VDM - Vertical dynamics Management

ZBE - iDrive Controller

ZGW - Central gateway module

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Appendix B

On new cars (7/2014 F30) the ignition will not stay on even if you turn light switch. After 15 minutes or so ignition will turn off. This is not a problem though, just remember to cycle ignition before svt soll calculation and before starting TAL processing (actual flash). Ignition will stay on as long as the TAL is running.

Thank you ap90500, src: http://www.bimmerfest.com/forums/showpost.php?p=8737326&postcount=2

Appendix C

ibadeploy is needed only if you are flashing a headunit that has IBA (electronic user manual). It doesn't do any damage if it is selected without a reason though.

Thank you ap90500, src: http://www.bimmerfest.com/forums/showpost.php?p=8737326&postcount=2