Hello my name is Junior and I am no expert at this so I will do my best here, there are something I do not fully comprehend yet but hey we all have to start somewhere. After about 2 months I have successfully learned how to code my own car using an OBD to serial cable and NCS expert (2006 325i) Usually you have to install all these programs from a cd but I have compressed them directly from my hard drive and I think it should work this way. This setup assumes you are using an OBD interface there is a file in C:\ediabas.ediabas.ini that you can set which interface you would like to use.. a little more advanced

Over-view

- 1. Unzip "NCS EXPERT.rar" to C:\
 - a. We are looking for three folders, EDIABAS, INPA and NCS EXPERT
- 🕒 💽 🗢 🚢 🕨 Computer 🕨 Local Disk (C:) 🕨 ✓ 4 Search Local Disk (C:) Q . 2 Organize • 🔚 Open Burn New folder Date modified Name Тур 😭 Favorites 📃 Desktop 🔒 downloads 10/1/2010 4:53 PM File bownloads Drivers File 9/7/2010 11:05 AM Recent Places EDIABAS 11/4/2010 8:52 PM File INPA 11/4/2010 8:52 PM File 🔚 Libraries Intel 9/7/2010 10:51 AM File Documents NCSEXPER 11/5/2010 11:37 AM File Music 🔰 OLD 11/5/2010 10:07 AM File Pictures PerfLogs 7/13/2009 10:37 PM File Videos Program Files 10/1/2010 4:47 PM File Users 9/7/2010 8:27 AM File Computer Nindows File 9/16/2010 2:36 PM 🚢 Local Disk (C:) working 11/4/2010 8:51 PM File DVD RW Drive (D:) NEU 11/8/2010 9:56 PM AtmApInit Text R NCSEXPER 11/8/2010 10:15 PM Win 🛍 Network 11/2/2010 7:52 AM working Win < 📃 3 items selected Date modified: 9/7/2010 10:51 AM - 11/5/2010 11:37 AM
- b. folders should look like this

- 2. Navigate to C:\INPA\BIN
 - a. Right click on INPALOAD.exe and create a shortcut to desktop
- 3. Navigate to C:\NCS EXPERT
 - a. Create a shortcut to your desktop of the "WORK" folder
- 4. Navigate to C:\NCS EXPERT\BIN
 - a. Create a shortcut to desktop of "NCSEXPER.EXE"

5. Navigate to C:\Ediabas\hardware\OBD and run the OBDsetup.exe. Your screen will look something like this, since I have ran this script previously it might look a little different the first time you run it. YOU MUST RESTART after this!!

C:\EDIABAS\Hardware\OBD\OBDSetup.exe	lignigent 🗿 ligne bare	
Windows XP Version 5.1 Build 260	0	*
Installing OBD driver		
SubKey 'SYSTEM\CurrentControlSet	≺Services\Serial'allready	exist !
Reading values of the key		
Value Type = 1 Value Start = 3 Value Group = Extended Value ErrorControl = 0	Expected = 1 Expected = 1 I base Expected = Extended Expected = Ø	Ok Warning base Ok Ok
Read value 'Tag' failed ! Value ForceFifoEnable = 1 Value RxFIFO = 8 Value TxFIFO = 8 Value PermitShare = 0	Expected = 1 Expected = 8 Expected = 8 Expected = 0	Ok Ok Ok Ok
Value LogFifo = 0 Warning! Some values have no sta Press any key to continue	Expected = 0 indard data - May be there ar	Ok re problems !
		*

- 6. Right click on my computer > properties
 - a. Windows 7

a.

- i. Click on Advanced system settings
- ii. click on Environment Variables

System Properties
Computer Name Hardware Advanced System Protection Remote
You must be logged on as an Administrator to make most of these changes.
Visual effects, processor scheduling, memory usage, and virtual memory
<u>S</u> ettings
User Profiles
Desktop settings related to your logon
S <u>e</u> ttings
Startup and Recovery
System startup, system failure, and debugging information
Settings
Environment Variables
OK Cancel Apply

iii. Highlight "Path" and click edit

TEMP %USERPROFILE%\AppData\Local\Temp TMP %USERPROFILE%\AppData\Local\Temp New Edit Delete variables Value OS Windows_NT Path C: \Windows\system32;C: \Windows;C: \ PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS; PROCESSOR_A x86	variable	Value
TMP %USERPROFILE%\AppData\Local\Temp New Edit Delete ystem variables Variable Value OS Windows_NT Path C:\Windows\system32;C:\Windows;C:\ PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS; PROCESSOR_A x86	TEMP	%USERPROFILE%\AppData\Local\Temp
New Edit Delete ystem variables Variable Value OS Windows_NT Path C: \Windows\system32;C: \Windows;C: \ PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS; PROCESSOR_A x86	TMP	%USERPROFILE%\AppData\Local\Temp
Variable Value OS Windows_NT Path C:\Windows\system32;C:\Windows;C:\ PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS; PROCESSOR_A x86		
OS Windows_NT Path C:\Windows\system32;C:\Windows;C:\ PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS; PROCESSOR_A x86	ystem variables -	<u>N</u> ew <u>E</u> dit <u>D</u> elete
Path C: \Windows\system32;C: \Windows;C: \ PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS; PROCESSOR_A x86	ystem variables Variable	New Edit Delete
PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS; PROCESSOR_A x86	ystem variables - Variable OS	New Edit Delete Value ' Windows_NT ()
PROCESSOR_A x86	ystem variables Variable OS Path	New Edit Delete Value ' Windows_NT ' C:\Windows\system32;C:\Windows;C:\
	ystem variables - Variable OS Path PATHEXT	New Edit Delete Value Windows_NT C:\Windows\system32;C:\Windows;C:\ .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;
	ystem variables – Variable OS Path	New Edit Delete Value Value Windows_NT C:\Windows\system32;C:\Windows;C:\

iv. Add this to the end ";C:\ediabas\bin"

Edit System Variable	X
Variable <u>n</u> ame:	Path
Variable <u>v</u> alue:	?\WindowsPowerShell\v1.0\;C:\ediabas\bin
	OK Cancel

- v. Click ok and exit all windows to desktop
- 7. From desktop press the WINDOWS KEY + R and type devmgmt.msc or just type in to search

🖅 Run	
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	devmgmt.msc 👻
	😗 This task will be created with administrative privileges.
	OK Cancel Browse

- 8.
- 9. This will open device manager.
 - a. Go to PORTS> double click on com1 > port settings tab > advanced

- b. Ensure "use fifo uffers" option is marked and receive buffers and transmit buffers are both set to 8. Once that is finished press ok and exit all windows.
- 10. Take a second, double check everything you just did. Trust me when I say you can't skip steps!
- 11. Connect your obd cable to car and computer we are going to test functionality with INPA.
- 12. Put key in slot and press the START STOP button but not to start car.
- 13. Go to desktop and click on "INPALOAD" (shortcut we created previously)
 - a. Both circles are black then continue, if not double check all previous steps make sure serial is set to com1

INPA - Loader	BMW Diagnosis Program Ve	rsion 5.00		and the second second					
About									
BMV	V Diagnosi	is Progra	am						
	-	-					-		
-	Battery :		on		Ign	ition :	•	on	
	< F1 > Information				<shift< td=""><td>> + < F1 > Cha</td><td>nge Editor</td><td></td><td></td></shift<>	> + < F1 > Cha	nge Editor		
	< F2 > E87				< Shift	> + < F2 > Mini	R50		
	< F3 > E46				<shift< td=""><td><pre>t> + < F3 > Spe</pre></td><td>cial tests</td><td></td><td></td></shift<>	<pre>t> + < F3 > Spe</pre>	cial tests		
	< F4 > E60								
	< F5 > E65 <\$hift> + < F5 > Rolls Royce RR1								
	< F6 > E85								
	<f7> EB3</f7>								
	< F8 > E53								
	< F9 > E90 <\$hift> + < F9 > Old modells								
	< F10> End <\$hift> + < F10> Exit								
RUNNING				Selec	t menu				
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Info	E87	E 46	E60	E65	E85	E83	E53	E90	End

14. Select your chassis mine is E90 so press F9, you will get this box

Script selection (<tab> to change</tab>	listbox, <esc> to abort)</esc>	
Select E90 V1.27 Engine Transmission Chassis Karosserie Seat Modules Communication Syste	Functional Jobs	

- 15. Select "Karosserie" now you will see another menu to the right. Select "airbag"
- 16. Press F5 to read status.. if it continues without any errors we are ready to run NCS Expert

- 17. Close INPA and start NCS EXPERT.exe from desktop shortcut.
- 18. Follow instructions very very very carefully, you can screw up your car starting now. If you don't know how to follow directions stop immediately . ok now for the fun part.
- 19. Should start off looking like this..

SPI NCS-EX	pertentool - no pro	file loaded			
<u>F</u> ile <u>V</u> iev	v <u>H</u> elp				
	CHASSIS: FG GM SA VN			Nrcl-No.:	
F1	F2	F3	F4	F5	F6
Ready					

21. Remember to follow directions closely....

20.

1

22. Select "File > Load profile > Expertmode > OK

Pro	fil ausw
	Default Profil mit eingeschaltetem Trace ohne SG FAL Code control unit, allow ZCS reading CAR KEY MEMORY FSW PSW MAN
	Expertmode BVR CKM ZCS nicht schreiben Revtor's NCS Expert Profile
	OK Cancel

24. File > edit profile password is "repxet"

Profile editor	-		
Applic	ZCSUT	ZST	FG/ZC S/FA/Baureihe
Verifikation			ASW ASW-Trace = ON
SGET-Data	SGET	С с т	F SW/P SW
	Coding		FSW-/PSW-Trace = ON
Car-,Keymemory Car/Key Memory	Nettodata-Trace =	= ON	Profile info
consister	nce check	ОК	Cancel

- 26. Select car-keymemory > check all three boxes > press ok
- 27. Click on "consistency check" should get this .. press ok



- 29. Then select "FSW/PSW"
- 30. Make sure both check boxes are checked and top part only has "from CVT" selected .. should look like this

Read FSW	//PSW: /SW processing	inactivv		
from C	:VT			
O from fi	le			
× FSW-/F	SW-Trace			
FSW-/F	SW-Manipulate	e with FSW	PSW.MAN	

- 32. Press ok, select consistency check again.. if no errors then press ok
- 33. File > save profile as > FZG4.PFL "mine is name GZG2.PFL" press ok

34. Example

37.

Save As		×
File name: CSEXPER\PFL\FZG2.PFL FAL.PFL FZG.PFL FZG_ZCS2.PFL FZG0.PFL FZG1.PFL FZG2.PFL FZG3.PFL V	Eolders: c:\ncsexper\pfl	OK Cancel Network
Save file as type: Profiles (*.pfl)	Dri <u>v</u> es:	-

- 35. File>edit profile>repxet>profile info> set profile name to "FSW PSW MAN"
- 36. We have just created a profile to write to car via a .man file. Every time you start NCS expert you will need to load this profile. After you load the profile you will see options like this

Real NCS-Expertentool - FSW PSW MAN	
<u>F</u> ile <u>V</u> iew <u>H</u> elp	
CHASSIS: FG FA	Nrcl-No.:
F1 F2 F3 VIN/ZCS/F4 CHASSIS SG ausw Ready	F4 F5 F6

38. Select F1 > select F3 here we can choose our chassis. We are going to select E89 (again we are assuming you are working on an E90)

BR ausw			X
E39	 	 	
E46			
E52			
E53			
E60			
E65			
E70			
E83			
E85			_
E89			
K24			
R50			
R50			-
	OK	Cancel	
	UN	Guilder	

40. Press ok. Now it is asking which computer we want to code.. we are going and always select "CAS" press ok. All options will gray out for a couple seconds and then it will look like this.

<u>F</u> ile <u>V</u> iew	<u>H</u> elp			
	CHASSIS FG FA	S: E90 WBAVB13566PT13516M E90_#0905&KAB4%0668*VB	Nrcl-No.:	017605go

- 42. Notice that now our vin is there along with "FA" FA is like a single string that tells the car everthing that it came with from the factory. More advanced users can change this but not really needed. I have provided a pdf for that if you are interested.
- 43. Now select "F6" for back will gray out then will look like this



- 45. We are going to start by making a backup of the car.
- 46. WARNING this initial step will reset your ECU and replace any settings you have coded previously since we have just "coded nothing" to the ECU.
- 47. The whole point of this was for the ECU to read all the settings from every module and place them in a file called FSW_PSW.TRC.
- 48. Navigate to the "WORK" shortcut we created on the desktop.
- 49. Open the file FSW_PSW.TRC with notepad. Make a copy of it in a safe place. This is your backup of all the settings.
- 50. Ok now for the fun.. coding.. lets code the famous "digital speed on cluster"
- 51. Just to avoid any mistake close NCS we are going to start from the beginning.
- 52. Load NCS >File>load profile "FSW PSW MAN"
- 53. F1>F3>select your chassis>select "CAS"
- 54. Press F6 for back

44.

55. Press F4 to select a specific module "process ecu" then you get a list of all modules on your car.. will and may be different.

SG	ausw	×
	2URAD 6BMOT ABG CAS DSC EGS EKP FAS FRM FZD IHK JBBF KOMBI	•
	OK Cancel]

- 57. Select "CAS" then select "READ ECU" this is going to create another FSW_PSW.TRC file but only with the values on for the module we select.
- 58. Select "READ ECU" this will read all the values from the specific module and place ten in the file stated above. You will get a screen like this.. you can close it.



- 61. Open the FSW_PSW.TRC file with notepad
- 62. File>save as FSW_PSW.MAN (be sure to select "save as type" to all files so that it will accept our ".MAN" extension. If you fail to do so it will just save it as a text file .TXT
- 63. The "FSW PSW MAN" profile that we used is going to use this "FSW_PSW.MAN" file . this is where we are going to make any changes and then NCS will write this to ECU.
- 64. Open the file we just saved with notepad will look like this.

FSW_PSW - Notepad) <mark>X</mark>
<u>File Edit Format View H</u> elp					
CC_BLINKFREQUENZ_LANGSAM					
wert_01					
wert 01					E
TANK_FILTER_FALLEND					
wert_02					
benzin					
CC_15_AUS					
wert_01					
wert 01					
CC_ML					
wert_01					
PREDRIVE_PERIODENDAUER					
TANK_FILTER_STEIGEND					
wert_02					
TANK_MITTLUNGSZEIT					
TANK BERUHIGUNGSZEIT					
wert_01					
TANK_SICHERHEITSFAKTOR					
TANK RED REICHWEITE					
wert_01					
AUSSENTEMP_ZEITKONST_Z4					
AUSSENTEMP ZEITKONST Z5					
wert_01					
AUSSENTEMP_ZEITKONST_Z6					
AUSSENTEMP DELTA K2					
wert_01					
AUSSENTEMP_ZEITKONST_Z1					
Wert_01					
wert_01					
AUSSENTEMP_ZEITKONST_Z3					
Wert_01					
wert_01					
AUSSENTEMP_ANZ_FEHLER_1					
Wert_01					
wert 01					
PREDRIVE_ABB_MOT					
nicht aktiv					
				🛄 💻	🙆 🍪 🛛
			and the second		

- 65.
- 66. The basics are if an option is enabled it will say "aktiv" if its not it will say "nicht_aktiv"
- 67. Search for the option "BC_DIGITAL_V" and change the value from "nicht_aktiv" to "aktiv"
- 68. File >save
- 69. Back to NCS now hit F5 for basic functions
- 70. Select "coapiReadSgGetFswPsw" and ok.. you are basically telling NCS to read all the values from your fsw_psw.man file. You will see a screen similar to this just press ok.

coapiReadSgGetFswPsw	X
CBD name: CAS2.C05	_
Chassis: E89	
Ergebnisdatei	_
OK Cancel	

72. Then you should get this.



74. Press ok.

73.

- 75. Ok now take a look where it says "JOBNAME = CODIERDATEN_LESEN"
- 76. We need to change that to a coding function because we want to write the changes to the module.
- 77. Select F2 "job" select SG_CODIEREN and press ok
- 78. Then press F3 to execute the job. Will gray out for some time.. now you will see this . notice the "coding ended' message

<u>File Vie</u>	ew <u>H</u> e	lp				
		CHASSIS FG FA	6: E90 WBAVB13566 E90_#0905&K	6PT13516M (AB4%0668*VE	Nrcl-No.: 81	017605go
		get code CAS Coding et JOBNAMI CAS2.CO	d: nded E = SG_CODIEI 5, A_E65CAS.IF	REN PO, CAS.PRG		

- 80. Assuming no errors.. CONGRATS you now have digital speed.
- 81. Press the BC button to scroll by MPG, MLS and MPH eventually you will see "V= 0 mph"...
- 82. After a couple of times you will get used to the process.. to code other options you just have to know which module controls them. Which value or values to change. Always do your research.
- 83. I know this is long as hell I tried to be as descriptive as possible. If this helped you in any way please make a donation as I am offering this knowledge free ⁽²⁾
- 84. Any questions visit E90post.com!