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
- ▼ 4 Search Local Disk (C:) 🕒 💽 🗢 🚢 🕨 Computer 🕨 Local Disk (C:) 🕨 Q Burn 8EE 🔻 2 Organize • 🔚 Open New folder Date modified Name Тур 😭 Favorites E Desktop 10/1/2010 4:53 PM 🔒 downloads 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 9/7/2010 10:51 AM Intel 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 E 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 AtmApInit 11/8/2010 9:56 PM Text R NCSEXPER 11/8/2010 10:15 PM Win 🛍 Network 11/2/2010 7:52 AM working Win ٠ 📃 III 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		
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 andard data - May be there an	
		•

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

a.

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

System Properties	x
Computer Name Hardware Advanced System Protection Remote	
You must be logged on as an Administrator to make most of these change	es.
Visual effects, processor scheduling, memory usage, and virtual memory	r.
Settings	
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	
	ply

iii. Highlight "Path" and click edit

Variable	Value
TEMP	%USERPROFILE%\AppData\Local\Temp
TMP	%USERPROFILE%\AppData\Local\Temp
	New <u>E</u> dit <u>D</u> elete
ystem variables Variable	
Variable	Value '
Variable OS	Value ' Windows_NT
Variable OS Path	Value Windows_NT C:\Windows\system32;C:\Windows;C:\
	Value Windows_NT C:\Windows\system32;C:\Windows;C:\ .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;

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

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Run		
	Type the name of a program, resource, and Windows will o	
<u>O</u> pen:	devmgmt.msc	 with administrative privileges.
	ОК	Cancel <u>B</u> rowse

- 8.
- 9. This will open device manager.

1

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 - Loade About	en BMW Diagnosis Program Ve	ersion 5.00		and the second second					
0									
BM	N Diagnos	is Progra	am						
•	Battery :		00		lan	ition :		00	
	Dattery.	•	on		ign	nion .	•	on	
	< F1 > Information <shift> + < F1 > Change Editor</shift>								
	< F2 > E87				<shift< td=""><td>> + < F2 > Mini</td><td>R50</td><td></td><td></td></shift<>	> + < F2 > Mini	R50		
	< F3 > E46				<shift< th=""><th>>+<f3> Spe</f3></th><th>cial tests</th><th></th><th></th></shift<>	>+ <f3> Spe</f3>	cial tests		
	< F4 > E60								
	< F5 > E65				<shift< th=""><th>> + < F5 > Roll</th><th>s Royce RR1</th><th></th><th></th></shift<>	> + < F5 > Roll	s Royce RR1		
	< F6 > E85								
	< F7 > E83								
	< F8 > E53								
	< F9 > E90				<shift< td=""><td>> + < F9 > Old</td><td>modells</td><td></td><td></td></shift<>	> + < F9 > Old	modells		
	< F10> End				<shift< td=""><td>> + < F10> Exit</td><td></td><td></td><td></td></shift<>	> + < F10> Exit			
RUNNING F1	F2	F3	F4	Selec F5	t menu F6	F7	F8	F9	F1 0
Into	E87	E46	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..

GPI N	CS-Expe	ertentool - I	no profil	e loaded) <mark>x</mark>
<u>F</u> ile	<u>V</u> iew	<u>H</u> elp						
		CHAS	SIS:			Nrcl-No.	.:	
		FG GM						
		SA						
		VN						
·								
	F1	F2		F3	 4	F5		F6
	<u> </u>			10	4			10
	ady							
	auy		_		 			

- 21. Remember to follow directions closely....
- 22. Select "File > Load profile > Expertmode > OK

1	Profil 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	FG/ZCS/FA/Baureihe
Verifikation		ASW ASW-Trace = ON
	SGET	сут
SGET-Data		FSW/PSW FSW-/PSW-Trace = ON
	Coding]
Car-,Keymemory Car/Key Memory	Nettodata-Trace = ON	Profile info
consiste	ence check OK	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		activv	
 from CVT 	2		
O from file			
FSW-/PSW-	frace		
FSW-/PSW-I	Manipulate v	rith FSW_PSW.MA	.N
	ок	Cancel	

- 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

Save As			×
File name: CSEXPER\PFL\FZG2.PFL FAL.PFL FAL.PFL FZG.PFL FZG0.PFL FZG1.PFL FZG2.PFL FZG3.PFL ▼	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

	CHASSIS: FG FA			Nrcl-N	0.:
F1 /IN/ZCS/F/	F2	F3	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)

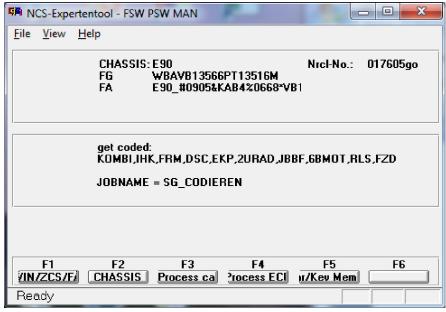
E39			-
E46			
E52			
E53			
E60			
E65			
E70			
E83			
E85			
E89			
K24			
R50			
R56			

39. 🔔

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	Help			
	CHASSI FG FA	S: E90 WBAVB13566PT13516M E90_#0905&KAB4%0668*VB	Nrcl-No.: }1	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



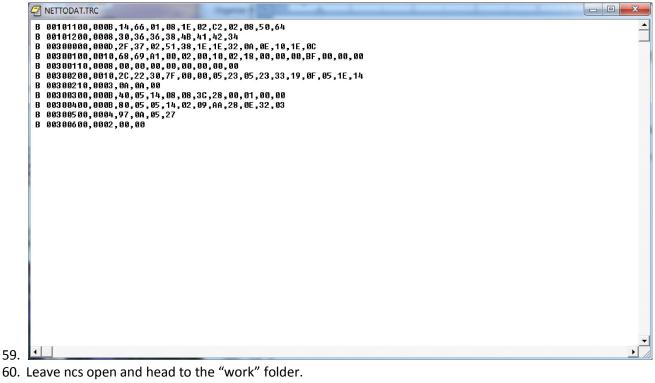
- 45. We are going to start by making a backup of the car.
- 46. WARNING this initial step will reset your ECU and replace any settings you have coded previously since we have just "coded nothing" to the ECU.
- 47. The whole point of this was for the ECU to read all the settings from every module and 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 <u>File Edit Format View H</u> elp	A	
CC_BLINKFREQUENZ_LANG5AM		
wert_01		
CC_BLINKFREQUENZ_SCHNELL		
wert_01		
TANK_FILTER_FALLEND		
wert_02		
C_15_EIN		
benzin		
C_15_AUS		
wert_01		
C_R_EIN		
wert_01		
C_ML		
wert_01		
REDRIVE_PERIODENDAUER		
wert_01		
<pre>FANK_FILTER_STEIGEND wert_02</pre>		
TANK_MITTLUNGSZEIT		
wert_01		
ANK_BERUHIGUNGSZEIT		
wert_01		
TANK_SICHERHEITSFAKTOR		
wert_01		
TANK_RED_REICHWEITE		
wert_01		
AUSSENTEMP_ZEITKONST_Z4		
wert_01		
AUSSENTEMP_ZEITKONST_Z5		
wert_01		
AUSSENTEMP_ZEITKONST_Z6		
wert_01		
AUSSENTEMP_DELTA_K2		
wert_01		
AUSSENTEMP_ZEITKONST_Z1		
wert_01		
NUSSENTEMP_ZEITKONST_Z2 wert_01		
AUSSENTEMP_ZEITKONST_Z3		
wert_01		
NUSSENTEMP_DELTA_K1		
wert_01		
USSENTEMP_ANZ_FEHLER_1		
wert_01		
AUSSENTEMP_ANZ_FEHLER_2		
wert_01		
REDRIVE_ABB_MOT		
nicht aktiv		
		8 🙃 📼 🗖 🗛
		- 😓 🕢 🛄 💻 😣 🏘

- 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	
1	OK Cancel	

72. Then you should get this.

coapiReadSgGetFswPsw 📃 🛛	
basic function perfect ended	
ОК	

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>F</u> ile <u>\</u>	<u>/</u> iew	<u>H</u> elp				
		CHASSI FG FA	WBAVB13566	SPT13516M (AB4%0668*VE	Nrcl-No.: 81	017605go
			F3	F4	F5	F6

- 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!