

# Vehicle Programming, Coding and Diagnosis for BMW via Internet

|                |            |
|----------------|------------|
| <b>Version</b> | 1.5        |
| <b>Date</b>    | 2006-12-04 |

# 1. Notes

| Date           | News  |
|----------------|---|
| February 2006  | The name CIP Online has changed to Progman Online.  |
| March 2006     | New <i>BMW specific Driver Version 0048</i> . Older versions must not be used. The latest version is available at <a href="http://www.bmwtechinfo.com">www.bmwtechinfo.com</a> .  |
| March 2006     | Change of the "Certificate Purposes of the Trust Center" from class3 to class2. See chapter 5.2.3.2 for SP1 and 5.2.4.3 for SP2 how to match browser settings.  |
| May 2006       | New chapter "5.2.5 Computer settings" to avoid problems while working with Progman Online.  |
| May 2006       | Addenda: FAQs (chapter 6) and General rules for Programming and Coding (chapter 7).   |
| September 2006 | Addenda: FAQs (chapter 6)   |
| December 2006  | <i>New BMW specific Driver Version 0062. Older versions must not be used. The latest version is available at <a href="http://www.bmwtechinfo.com">www.bmwtechinfo.com</a>. Please Note, for the tool from I+ME Actia, the driver version to be used should be greater than V 2.0, currently 2.06b. The Bluetooth PTT is not approved for reprogramming.</i> |

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## 3. Introduction

BMW troubleshooting charts, guides and aids for diagnosis are integrated into BMW service tools. Stand-alone guides for troubleshooting are not available from BMW. All OBD-II-equipped BMW vehicles are designed to be programmed and coded electronically. Diagnosis, Coding and Programming on any BMW or MINI vehicles manufactured since 1996 may be carried out using the GT1 and SSS, BMW service tools, or alternatively with the online features “Online Diagnosis and Progman Online” (with vehicle exceptions as noted below). All BMW service tools required to repair a US specific BMW vehicle may be purchased for use by a repair shop through [www.centrallettershop.com](http://www.centrallettershop.com).

A lower cost alternative to GT1 and SSS, Online Diagnosis and Progman Online is offered to website subscribers. This alternative requires a “PassThru” tool, internet connection and a power supply. The PassThruTool is comprised of a diagnostic interface box which either meets the requirements of SAE J2534 or is configured to operate with OBD-II equipped BMW and MINI vehicles. Car/Key memory functions are not possible using Progman Online.

The power supply should be a stand-alone, constant voltage, high-amperage power supply (or an “intelligent” battery charger with an electronically controlled power supply function) meeting the following specifications:

- Microprocessor-controlled measuring and monitoring
- Power supply mode (dual function power supply/chargers): in power supply mode the charger monitors the amperage draw of the vehicle and adjusts itself accordingly. For example, the charger will output 32 amps in response to a 32-amp draw. In this way battery capacity reduction is eliminated.
- 250 Ah rating, with 10 Ah or higher resolution
- Power Supply output voltage: min 12.4V , max 14.4V, with 0.02 V or higher resolution
- Power Supply output current: 45 A, with 0.05 A or higher resolution
- Non-sparking due to delayed switch-on (battery chargers)

BMW sells such a tool, part number 99 00 0 003 944 (see SIB 04 11 02) which may be purchased through [www.centrallettershop.com](http://www.centrallettershop.com).

### 3.1. Important Information

Without a stable power supply (as defined above), mid-programming disconnections, programming errors or faulty programming may occur. Model series E65 and newer cannot be programmed without the use of such a power supply. In addition, a stable internet connection must be maintained throughout the programming sequence during the use of the online tools. Some vehicle control modules will take several hours to reprogram.

### 3.2. PassThruTool

The *PassThruTool*, a *PassThruTool Driver* and a *BMW specific Driver* are required in order to set up the connection between the diagnostic link in the vehicle and the computer.

The PassThruTool Driver can be obtained from the relevant software producer. The utilization of the PassThruTool from the company I+ME Actia ([www.actia.com](http://www.actia.com)) or from snapon ([www.snapon.com/j2534](http://www.snapon.com/j2534)) is recommended by BMW. The USB interface is now approved with this new driver.

For the tool from I+ME Actia, the driver version to be used should be greater than V 2.0, currently 2.06b. The *PassThruTool Driver* from Actia is available on the homepage [www.passthruxs.com](http://www.passthruxs.com). The Bluetooth PTT is not approved for reprogramming.

For the tool from Snap-on, the driver version to be used should be “Original J2534 Installation”. Driver “J2534-1” must not be used. The *PassThruTool Driver* from Snap-on is available on the homepage [www.snapon.com/j2534](http://www.snapon.com/j2534).

The *BMW specific Driver* can be downloaded from [www.bmwtechinfo.com](http://www.bmwtechinfo.com). Please make sure that the driver version is greater than 0062.

### **3.3. BMW specific adapter and cables**

#### **3.3.1. BMW specific 20 pin cable**

Some BMW vehicles (listed below) will require in addition a 20-pin BMW-specific diagnostic connector adapter. Your PassThruTool supplier may offer the adapter. It is included in the Actia Passthru+XS "BMW Starter Kit", available directly from Actia ([www.passthruxs.com](http://www.passthruxs.com)).

Vehicles requiring a BMW specific 20 pin cable:

- 323i sedan through MY 1998, 323i coupe/convertible through MY 1999
- 328i, 330i sedan through MY 1998, 328i, 330i coupe/convertible through MY 1999
- M3 coupe/convertible through MY 1999
- Z3 roadster 2.8/3.0 through MY 1998
- M roadster/coupe through MY 2000
- 528i, 530i, through MY 1998
- 540i /540i Sport Wagon through MY 1997
- 740i through MY 1997

#### **3.3.2. 7-8 pin Adapter**

This adapter is needed for all vehicles equipped with an OBD plug except E6X. Future manufactured vehicles should not require this adapter. It is included in the Actia Passthru+XS "BMW Starter Kit", available directly from Actia ([www.passthruxs.com](http://www.passthruxs.com)).

### **3.4. K2 Protocol Vehicles**

The following vehicles cannot be accessed using a pass-thru tool (Online Diagnosis and Progman Online). If one of these vehicles needs to be programmed or coded, please send an email with the subject, **K2 Vehicle** to: [servicetechnifo@bmwna.com](mailto:servicetechnifo@bmwna.com) providing the vehicle year, model and last 7 VIN digits as well as your name and telephone number.

- 318i MY 1996-1999
- Z3 roadster 1.9 1996-1998
- 840Ci 1996-1997.

## 4. Online Diagnosis

### 4.1. System Requirements

| <u>Attributes</u> | <u>Requirements</u>   |
|-------------------|---|
| Operating System  | Win 98, Win ME, Win 2000, Windows XP Professional   |
| Graphics          | Resolution at least 1024 x 768 Pixel at least 256 colours   |
| Memory            | At least 128 MB   |
| Hard disk         | Approx. 10 GB (at least 5 GB available)   |
| CPU               | Pentium III or higher $\geq$ 500 MHz  |
| Interfaces        | One available serial Interface RS 232<br>Internet connection at least 56k Bit (V.90)                        |
| Browser           | Netscape 4.7x<br>Microsoft Internet Explorer (MSIE) $\geq$ V5.x (see note 5.1)                              |
|                   | Microsoft Java Virtual Machine (available at <a href="http://www.bmwtechinfo.com">www.bmwtechinfo.com</a> ) |
|                   | You may need Administrator rights.  |

### 4.2. Quick connect guide for Online Diagnosis

- Start the BMW specific PassThruTool device driver manually.
- Connect an approved power supply to the battery. See SIB 04 11 02.
- Start Online Diagnosis. The first time Online Diagnosis is launched a java applet will be installed on the computer.
- Accept the requested installation grants.
- Close the browser after completion of the java applet installation.
- Restart browser and start Online Diagnosis.
- If communication problems are experienced, a reboot is recommended.

## 5. Progman Online

### 5.1. System Requirements

| <u>Attributes</u> | <u>Requirements</u>   |
|-------------------|---|
| Operating System  | Windows XP Professional (Service pack 1 or 2)   |
| Graphics          | Resolution at least 1024 x 768 Pixel at least 256 colors  |
| Memory            | At least 128 MB   |
| Hard disk         | Approx. 10 GB (at least 5 GB available)   |
| CPU               | Pentium III or higher $\geq$ 500 MHz  |
| Interfaces        | One available serial Interface RS 232 or USB<br>Internet connection at least 56k Bit (V.90)   |
| Browser           | Microsoft Internet Explorer (MSIE) Version 5 or 6<br>Please Note:<br><b>Progman Online supports only MSIE5 or MSIE6. MSIE7 will be supported end of the 1st quarter 2007.</b> |
|                   | Microsoft Java Virtual Machine (available at <a href="http://www.bmwtechinfo.com">www.bmwtechinfo.com</a> )   |
| Browser settings  | see instructions below  |

### 5.2. Installation Progman Online Client Components

This section describes the necessary prerequisites that need to exist on a client computer in order for Progman Online to operate. For installation you need Administrator rights.

This document assumes that Microsoft Windows XP Professional Service Pack 1 or 2 is already installed on the client.

#### 5.2.1. Preparation

The following software components must be installed on the client before the first use of Progman Online:

- *PassThruTool Driver* from the PTT supplier (see also point 3.2)
- *BMW specific Driver* Version 0048 (see also point 3.2)
- Microsoft Java VM (available at [www.bmwtechinfo.com](http://www.bmwtechinfo.com)) (Sun Java may conflict with MS Java)

#### 5.2.2. Procedures when starting Progman Online

Progman Online executes the following actions when launched:

- A check is carried out to verify that the current Progman Online Client Components are installed on the client. If so, Progman Online will display the model range selection.
- If this is not the case, the current Client Components will be installed. For this purpose, an ActiveX Control ("Client Inspector") will be installed on the client. The Client Inspector subsequently executes the installation of further software components. These steps could take a long time. After completion of the installation, the model range selection is displayed.

In order that the installation of the Client Components can be executed, certain settings need to be adjusted in Microsoft Internet Explorer. These settings will be described in Chapter 4 and 5.

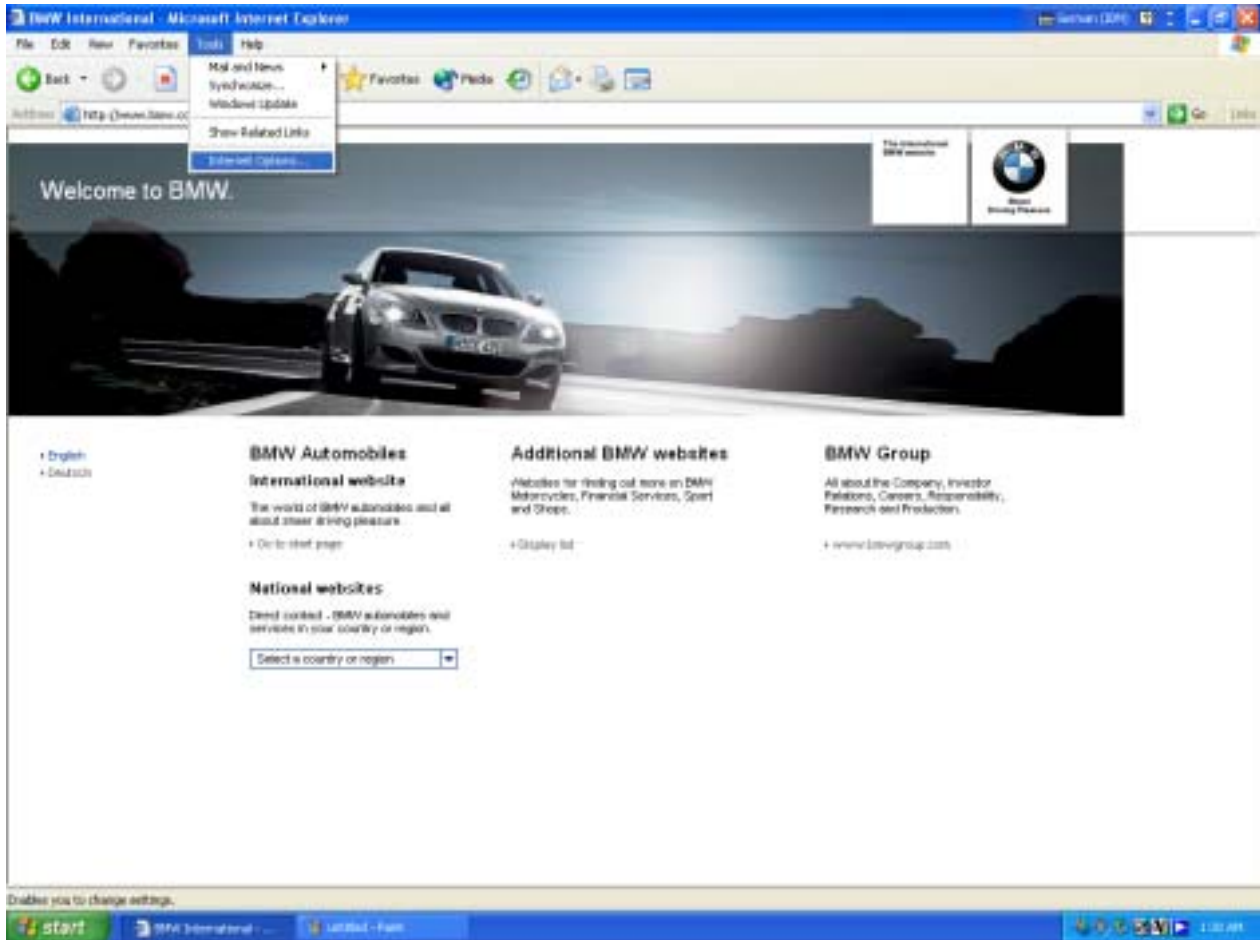
Since some of these settings have the value "Prompt", dialog boxes with messages or further inquiries can be displayed to the user during installation.

Please note: In the event that the client is operated with Firewall Software, it is possible that during the installation of the Client Components, messages/inquiries from the Firewall Software can be displayed on the screen.

### **5.2.3. Settings in Microsoft Internet Explorer 6 for Windows XP Professional SP1**

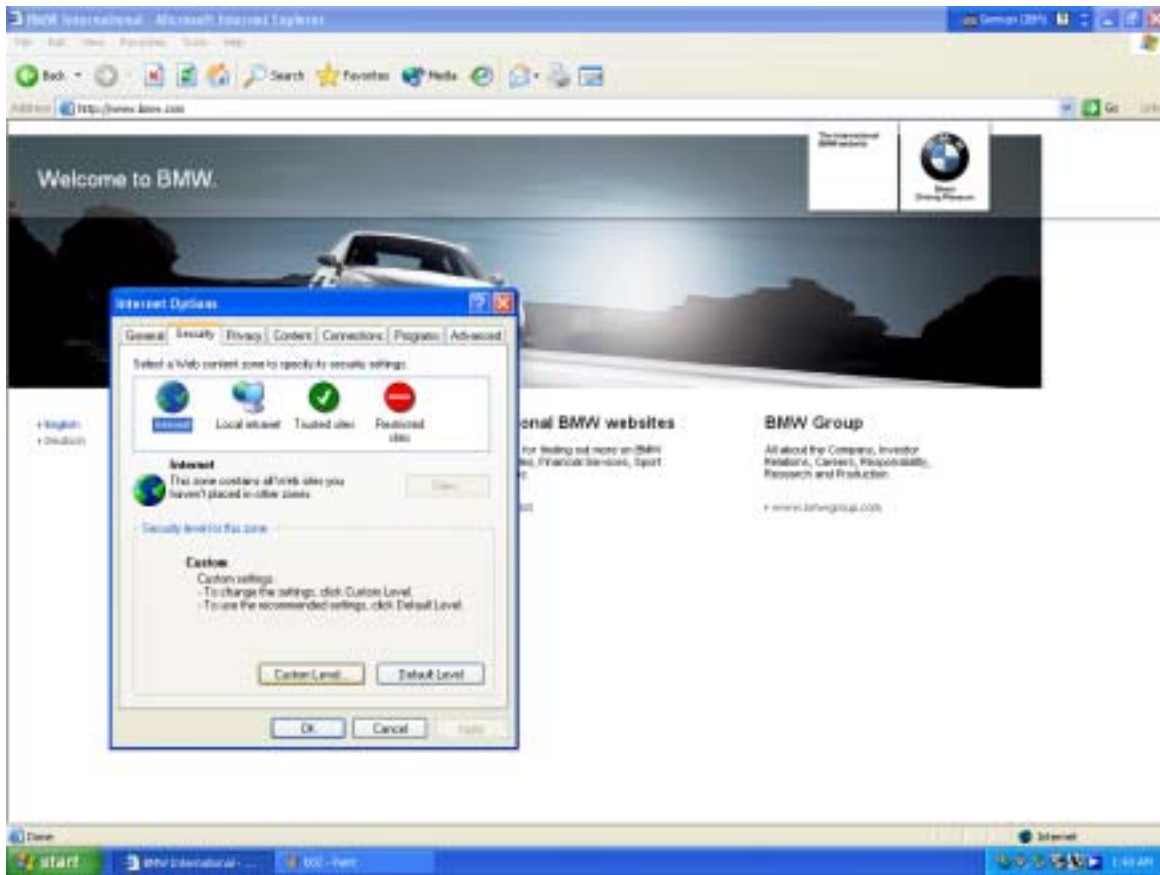
#### **5.2.3.1. Step 1: Security Setting Adjustments**

The Internet Explorer security settings are reached by choosing the menu “**Tools -> Internet Options**”.





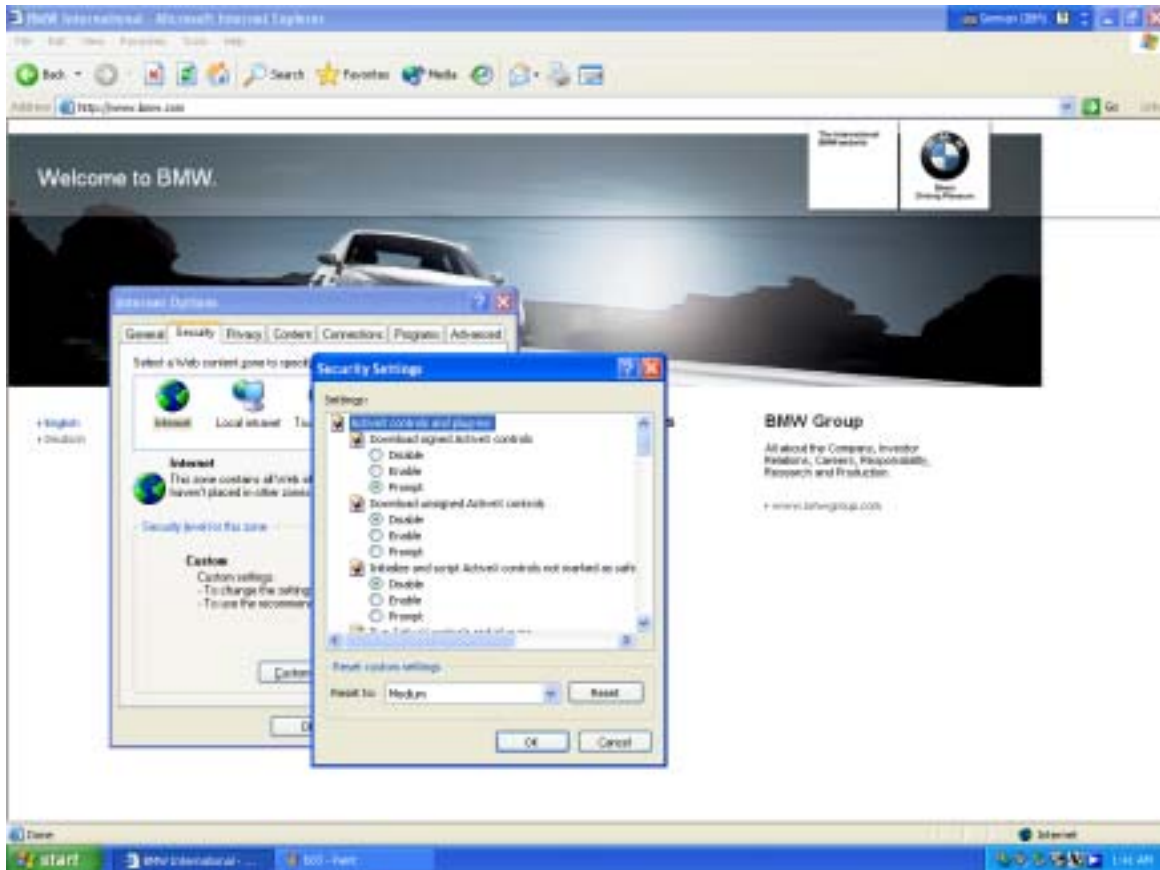
In the “**Internet Options**” dialog box, select the “**Security**” tab.  
From the displayed Web content zones, select the “**Internet**” zone and click on the “**Custom Level...**” button.



The “**Security Settings**” dialog box is displayed (in the area “**Reset custom settings**”, the value “**Medium**” should be selected).

The following settings should be activated (if they have not already been selected):

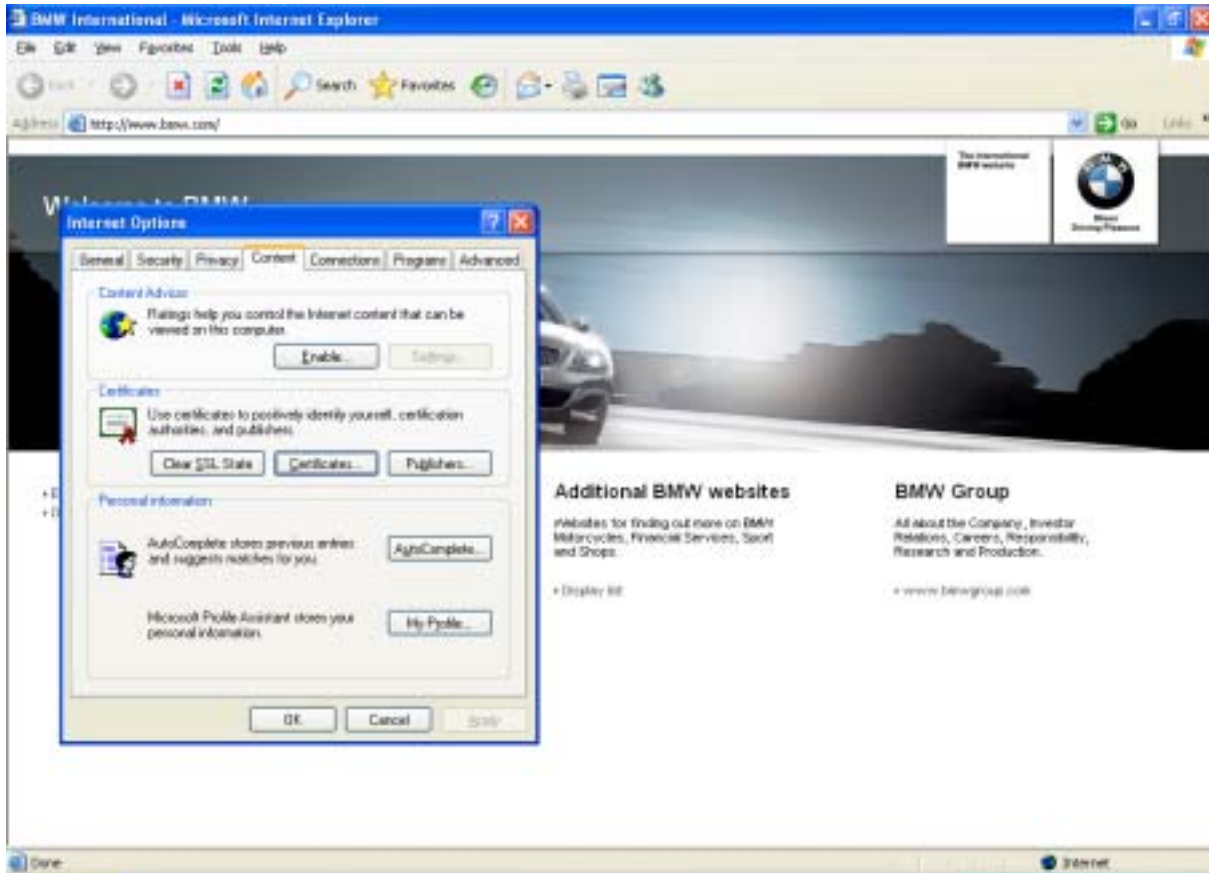
- **Download signed ActiveX controls -> Prompt**
- **Run ActiveX controls and plug-ins -> Enable**
- **Script ActiveX controls marked safe for scripting -> Enable**
- **Allow META REFRESH -> Enable**
- **Active scripting -> Enable**
- **Allow paste operations via script -> Enable**



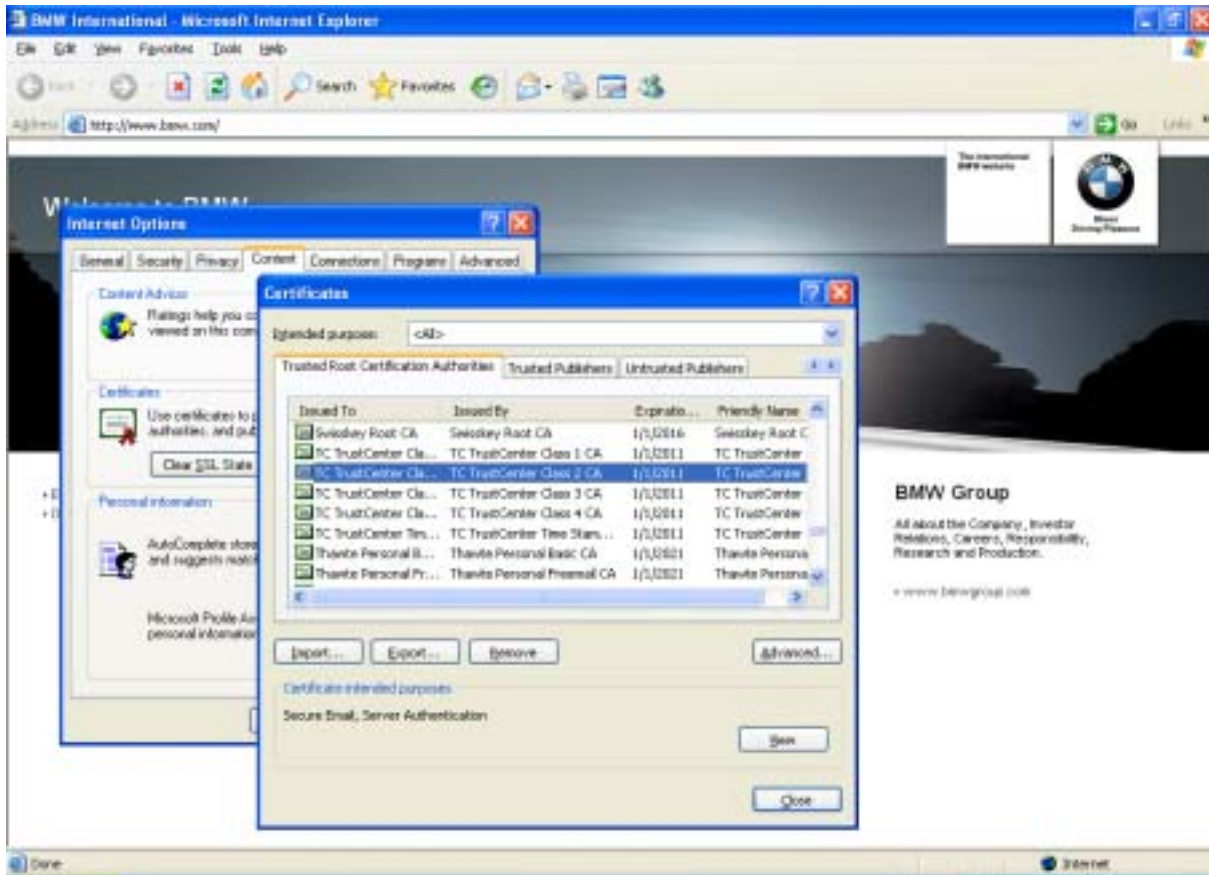
Thereafter, clicking on the „OK“ button will close all open dialog boxes.

### 5.2.3.2. Step 2: Activation of the Certificate Purposes of the “TC TrustCenter Class 2 CA” Root Trusted Certificate to “Code Signing”

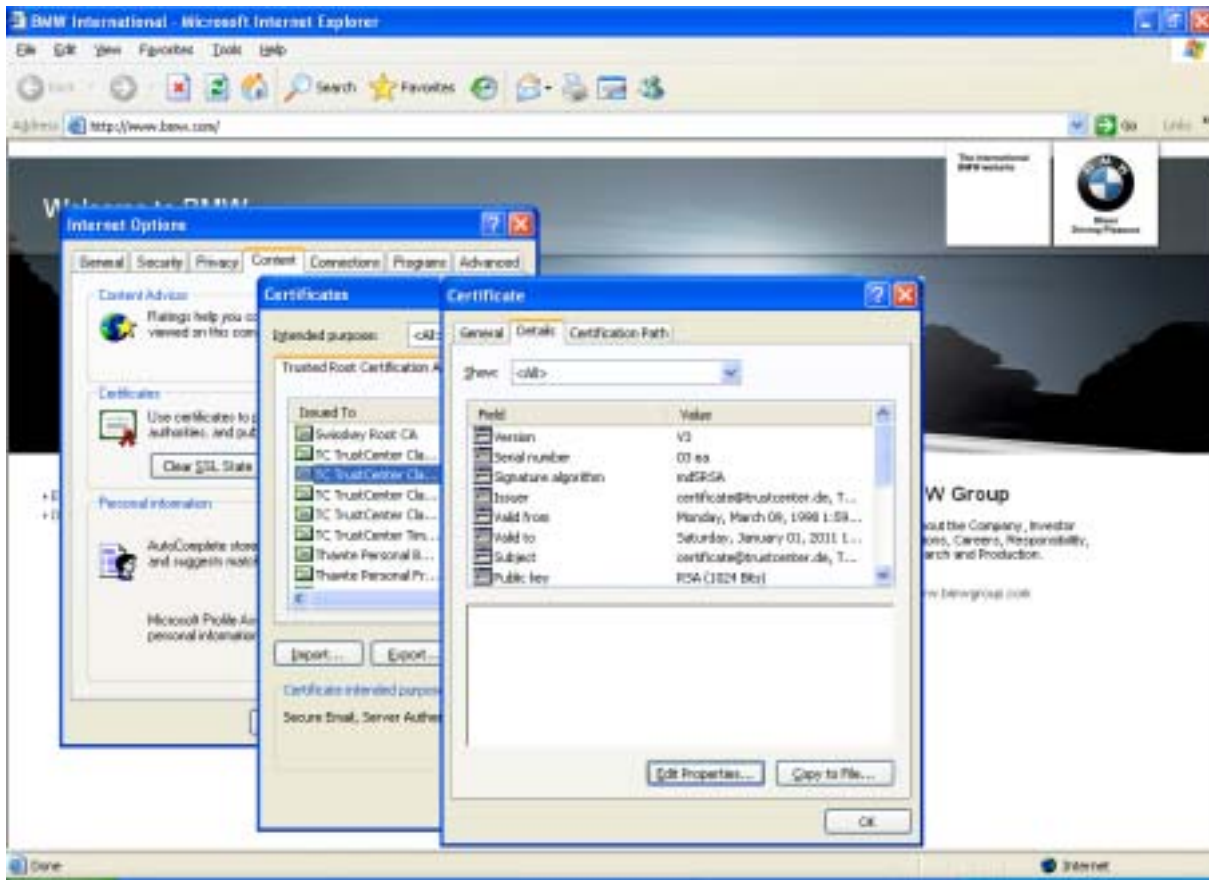
In the dialog box “(Internet Explorer -> Tools ->Internet Options...) **Internet Options**“, select the “**Content**” tab. In the area “**Certificates**“, click on the “**Certificates...**” button.



The dialog box “**Certificates**” is displayed. After selecting the “**Trusted Root Certification Authorities**” tab, a list of certificates will be displayed. Select “**TC TrustCenter Class 2 CA**” from this list and click on the “**View**” button.

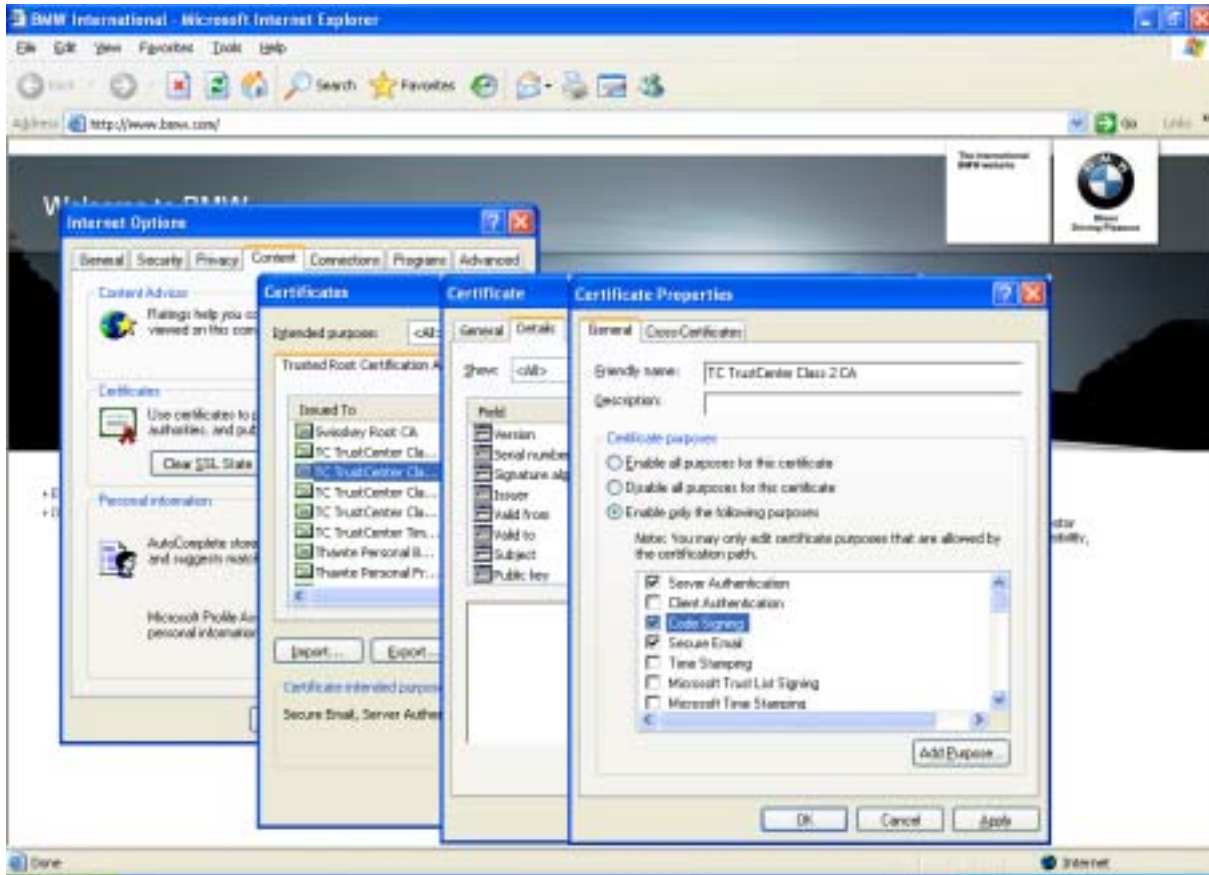


The “**Certificate**” dialog box is then displayed. After selecting the “**Details**” tab, click on the “**Edit Properties...**” button.



The dialog box “**Certificate Properties**” is then displayed. On the “**General**” tab, in the area “**Certificate purposes**”, the checkbox “**Code Signing**” must be checked.

Thereafter, clicking on either „OK or Close“ can close all open dialog boxes.

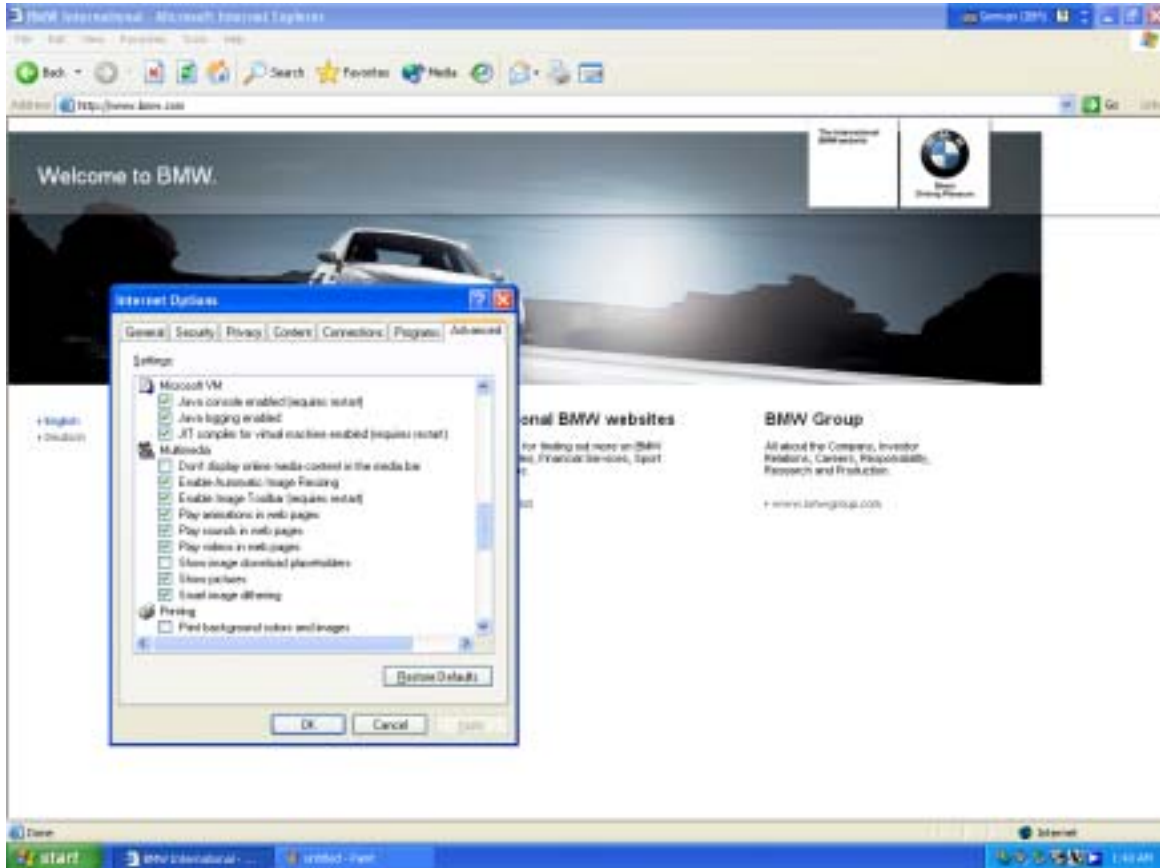


### 5.2.3.3. Step 3: Activation of Microsoft VM

In Internet Explorer open the “**Internet Options**” dialog box by selecting “**Tools -> Internet Options**”. Select the “**Advanced**” tab.

Under the “**Microsoft VM**” entry, activate the following options:

- **Java console enabled (requires restart)**
- **Java logging enabled**
- **JIT compiler for virtual machine enabled (requires restart)**



## **5.2.4. Settings in Microsoft Internet Explorer 6 for Windows XP Professional SP2**

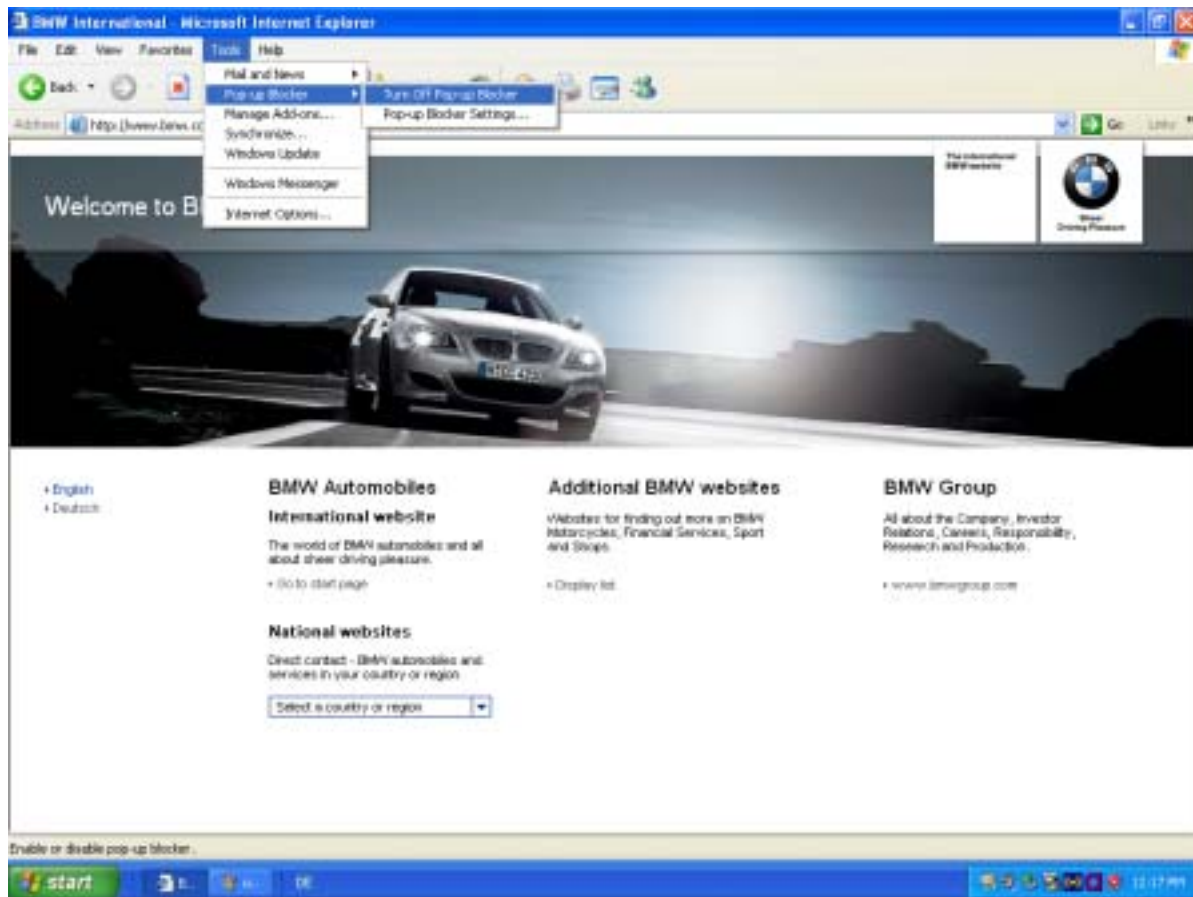
### **5.2.4.1. Step 1: Turn off Pop-up Blocker**

A Progan Online session is launched in its own window. For this reason, the Internet Explorer Pop-up Blocker must be switched off.

For this purpose, the following selections need to be made in Internet Explorer:

- **“Tools -> Pop-up Blocker -> Turn Off Pop-up Blocker”**

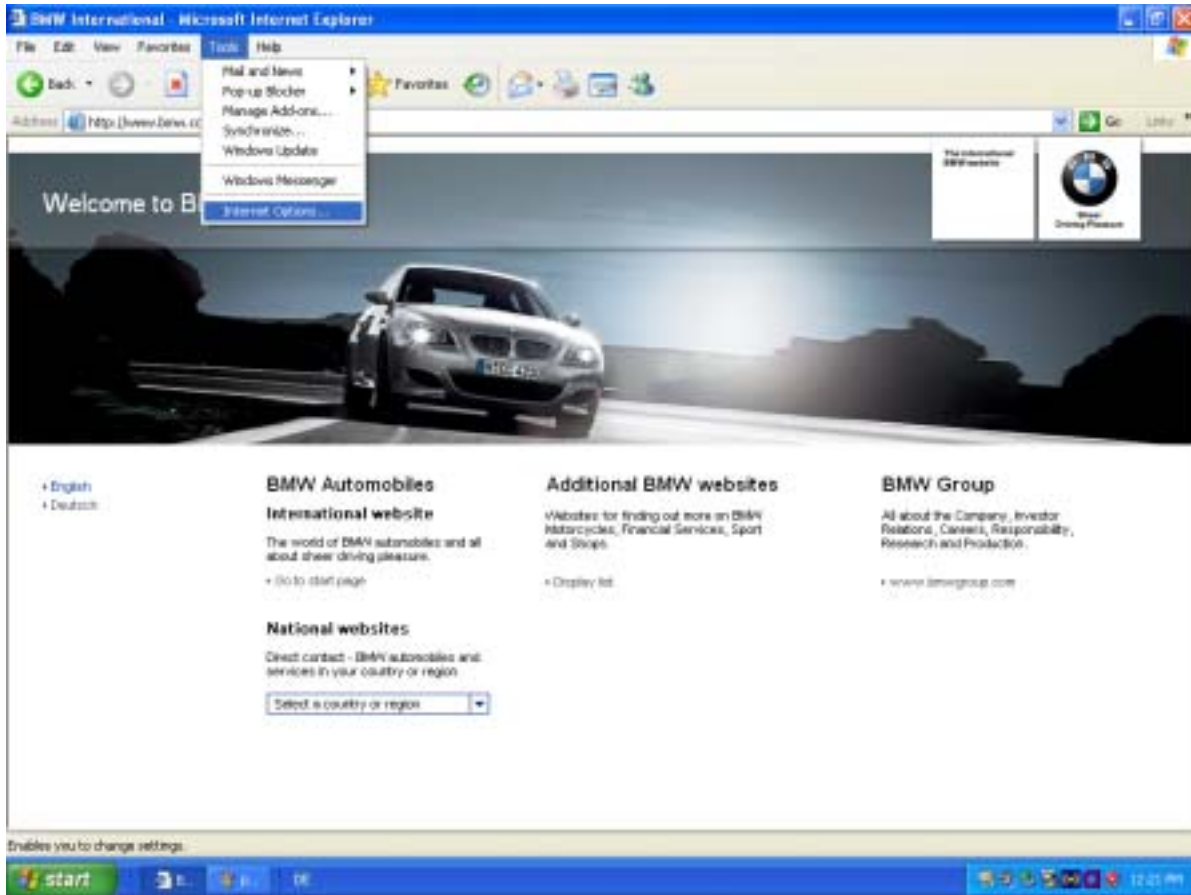
If the Pop-up Blocker is already de-activated, the option **“Turn On Pop-up Blocker”** will appear in the submenu.



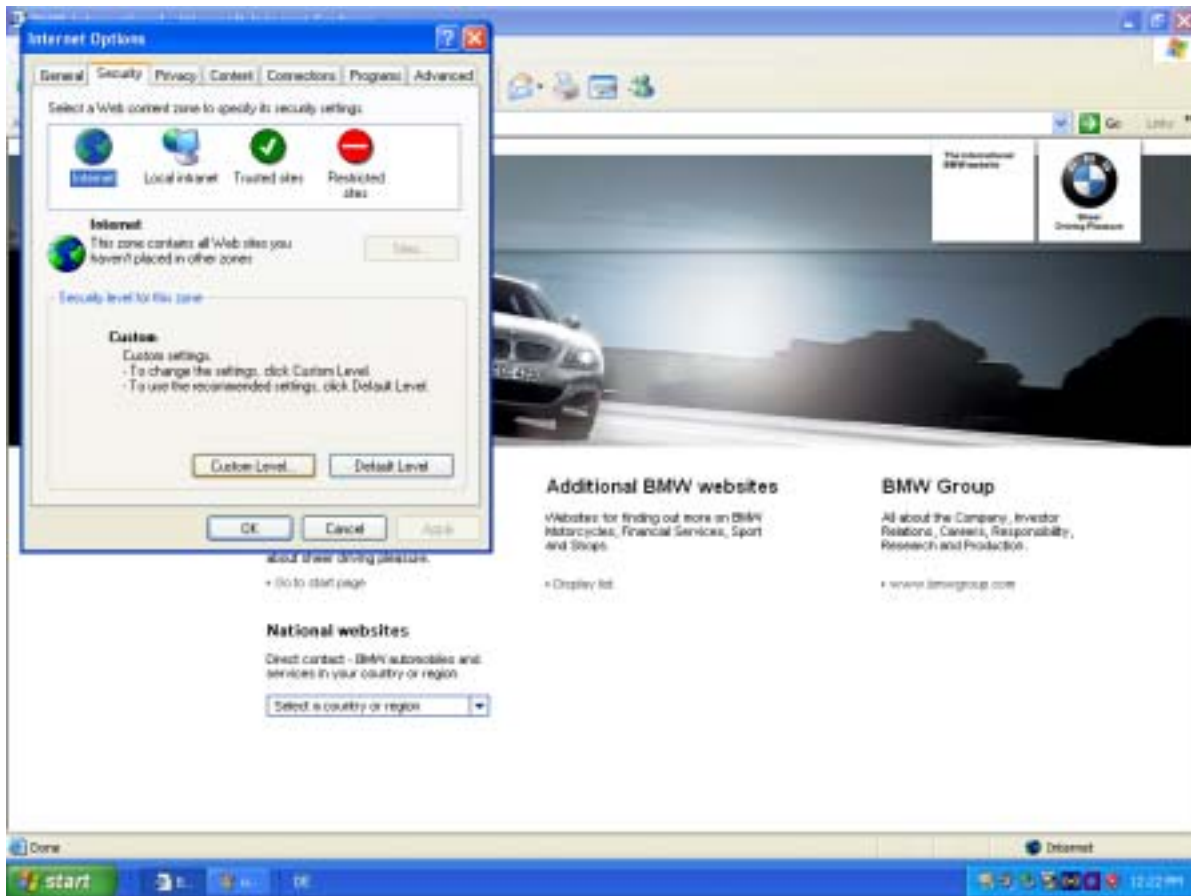


### 5.2.4.2. Step 2: Security Setting Adjustments

The Internet Explorer security settings are reached by choosing the menu “**Tools -> Internet Options**”.



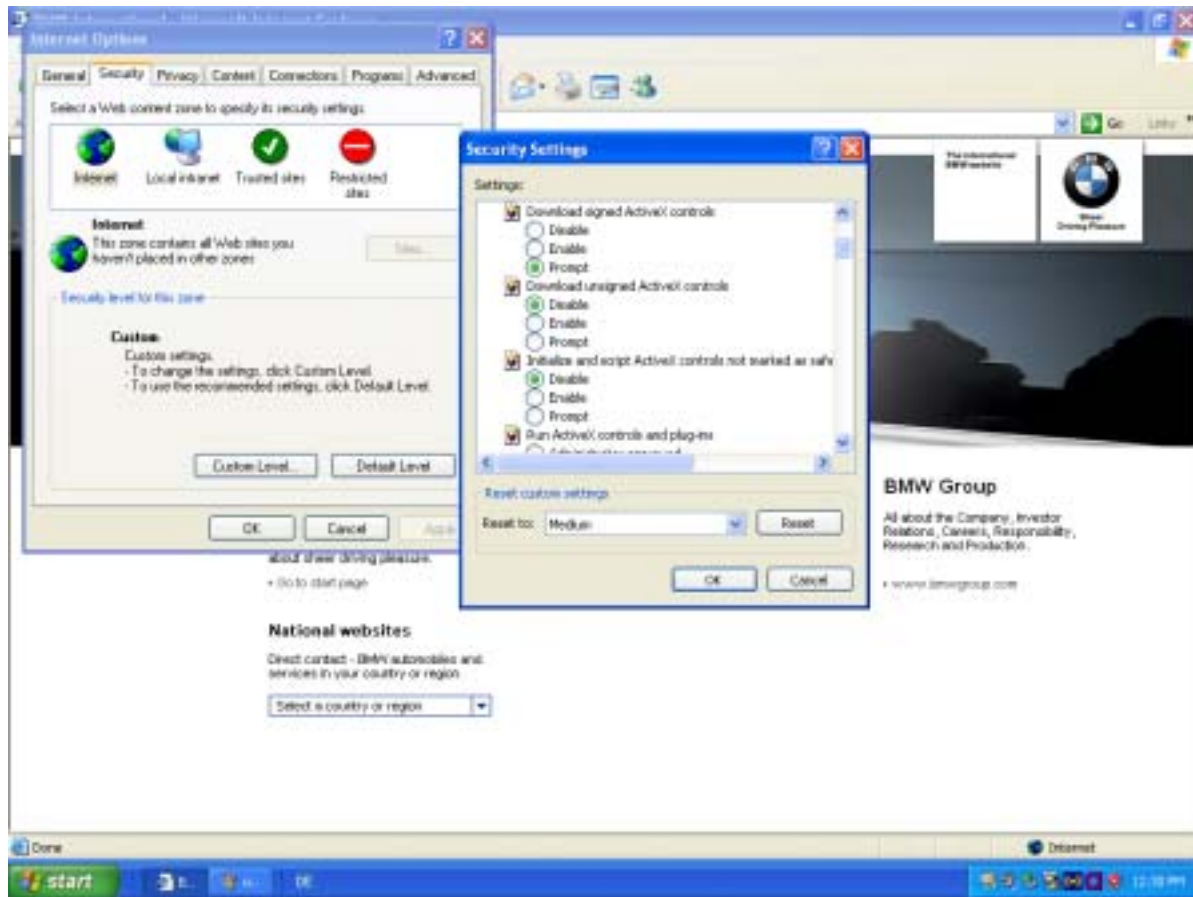
In the “**Internet Options**” dialog box, select the “**Security**” tab.  
From the displayed Web content zones, select the “**Internet**” zone and click on the “**Custom Level...**” button.



The “**Security Settings**” dialog box is displayed (in the area “**Reset custom settings**”, the value “**Medium**” should be selected).

The following settings should be activated (if they have not already been selected):

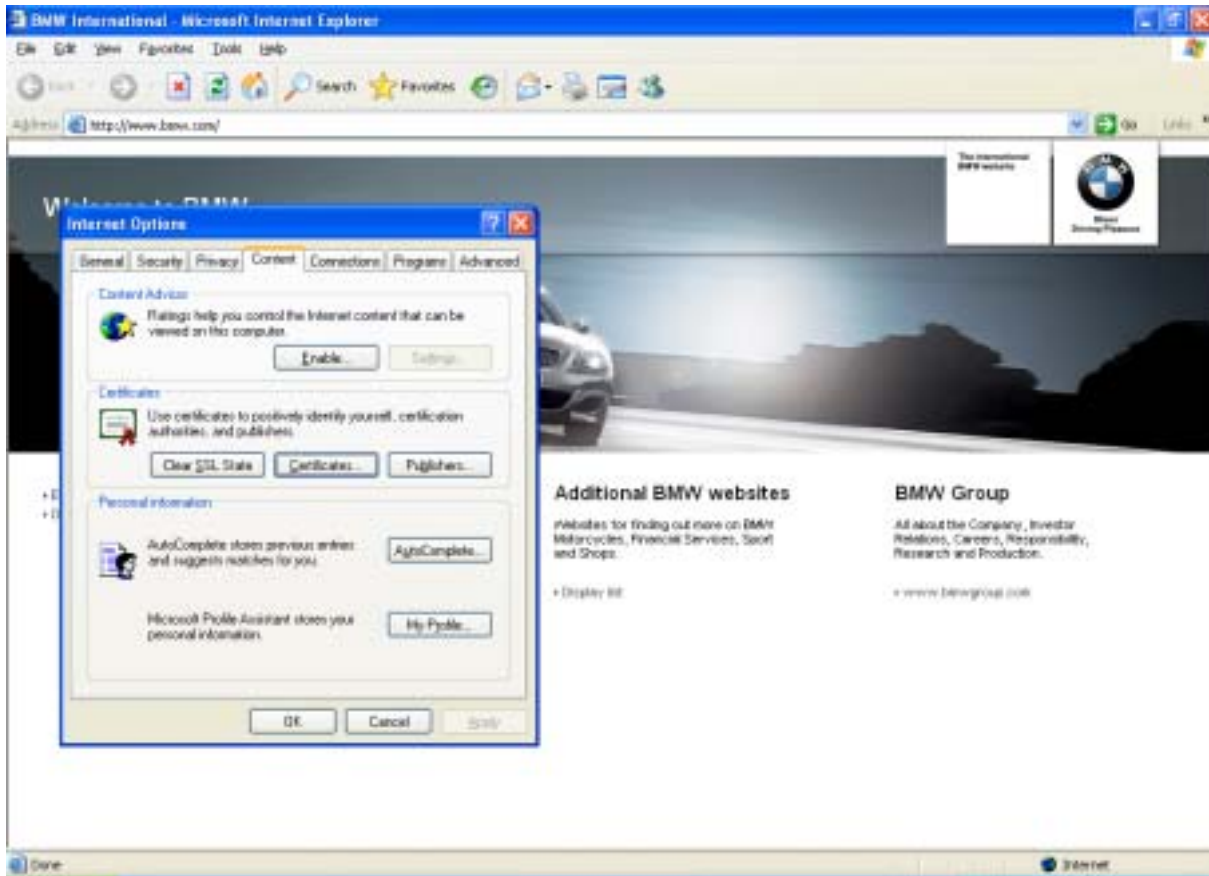
- **Automatic prompting for ActiveX controls -> Enable**
- **Download signed ActiveX controls -> Prompt**
- **Run ActiveX controls and plug-ins -> Enable**
- **Script ActiveX controls marked safe for scripting -> Enable**
- **Active scripting -> Enable**
- **Allow paste operations via script -> Enable**
- **Allow META REFRESH -> Enable**
- **Allow script-initiated windows without size or position constraint -> Enable**



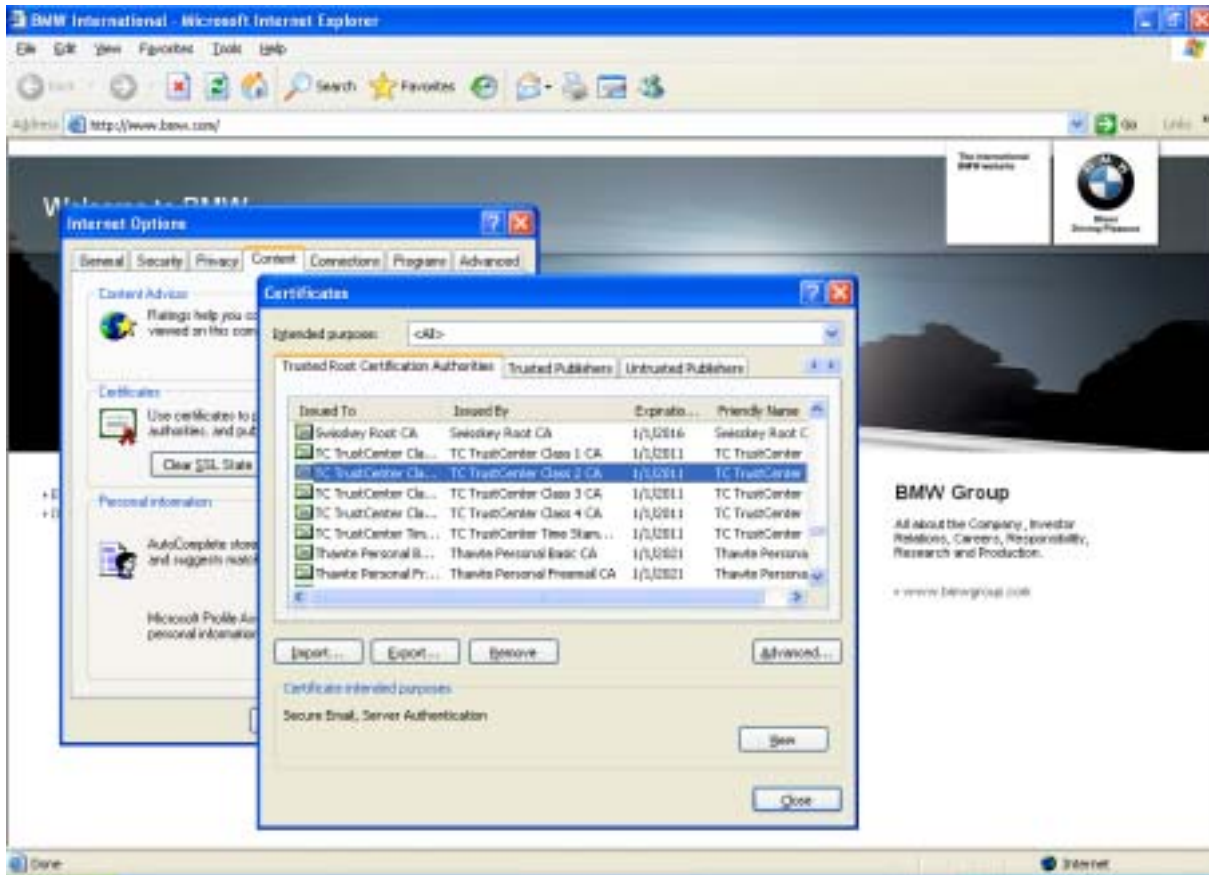
Thereafter, clicking on the „OK“ button will close all open dialog boxes.

### 5.2.4.3. Step 3: Activation of the Certificate Purposes of the “TC TrustCenter Class 2 CA” Root Trusted Certificate to “Code Signing”

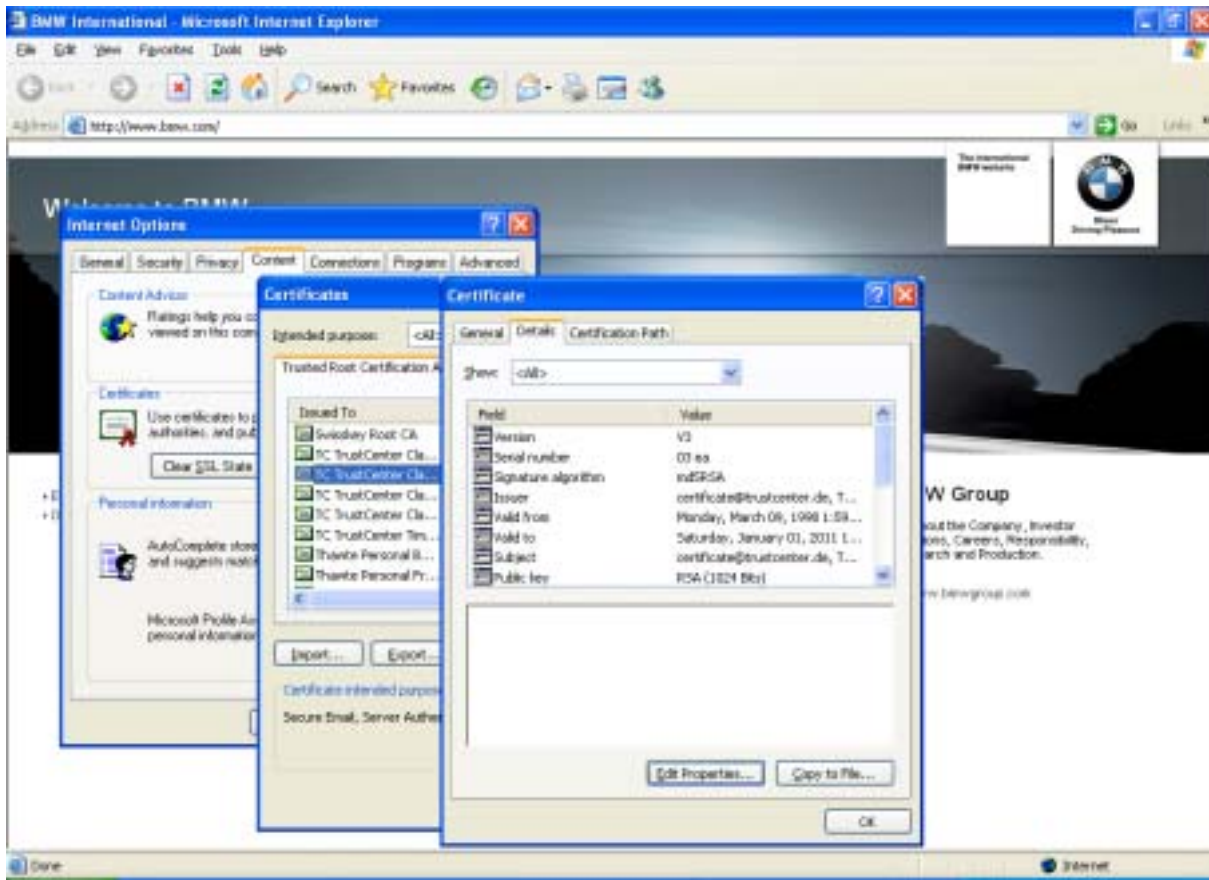
In the dialog box “(Internet Explorer -> Tools ->Internet Options...) **Internet Options**“, select the “**Content**” tab. In the area “**Certificates**“, click on the “**Certificates...**” button.



The dialog box “**Certificates**” is displayed. After selecting the “**Trusted Root Certification Authorities**” tab, a list of certificates will be displayed. Select “**TC TrustCenter Class 2 CA**” from this list and click on the “**View**” button.

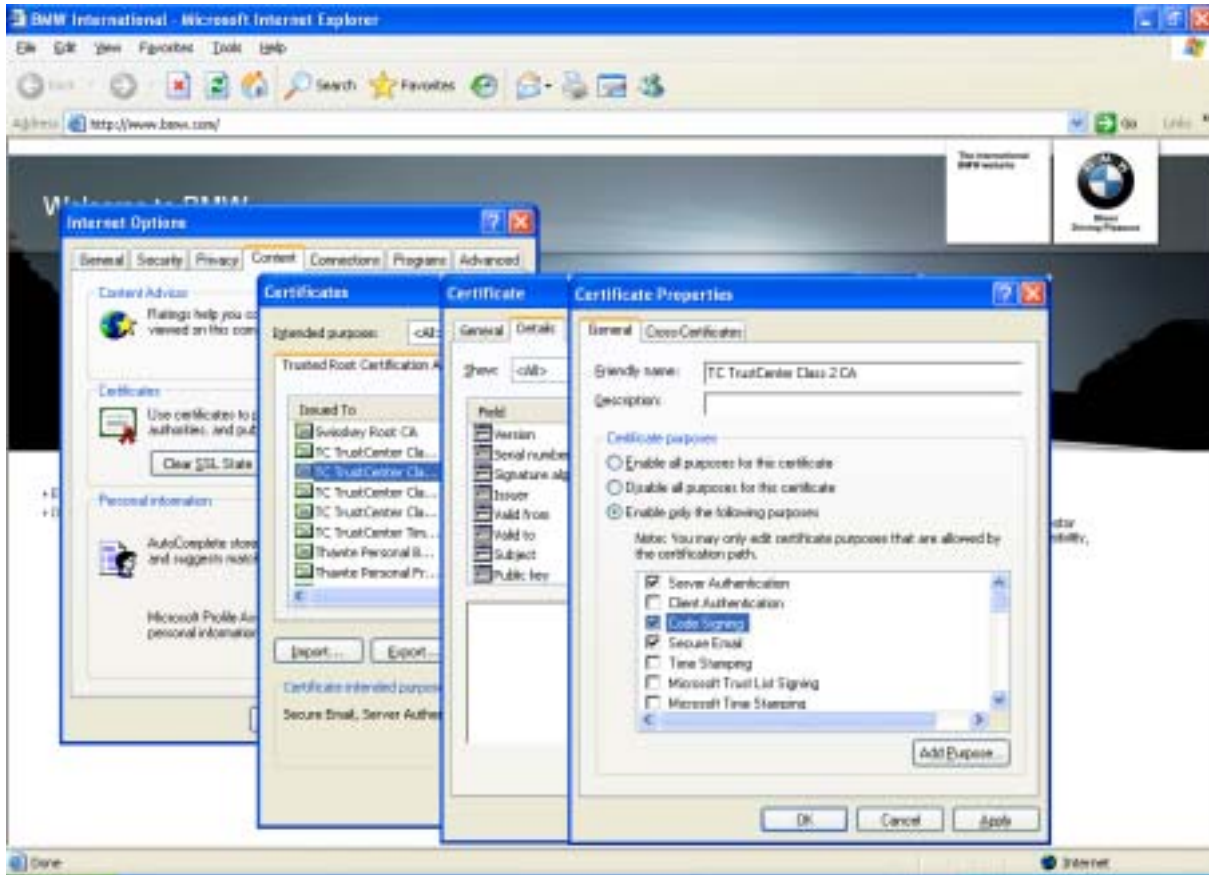


The “**Certificate**” dialog box is then displayed. After selecting the “**Details**” tab, click on the “**Edit Properties...**” button.



The dialog box “**Certificate Properties**” is then displayed. On the “**General**” tab, in the area “**Certificate purposes**”, the checkbox “**Code Signing**” must be checked.

Thereafter, clicking on either „OK or Close“ will close all open dialog boxes.

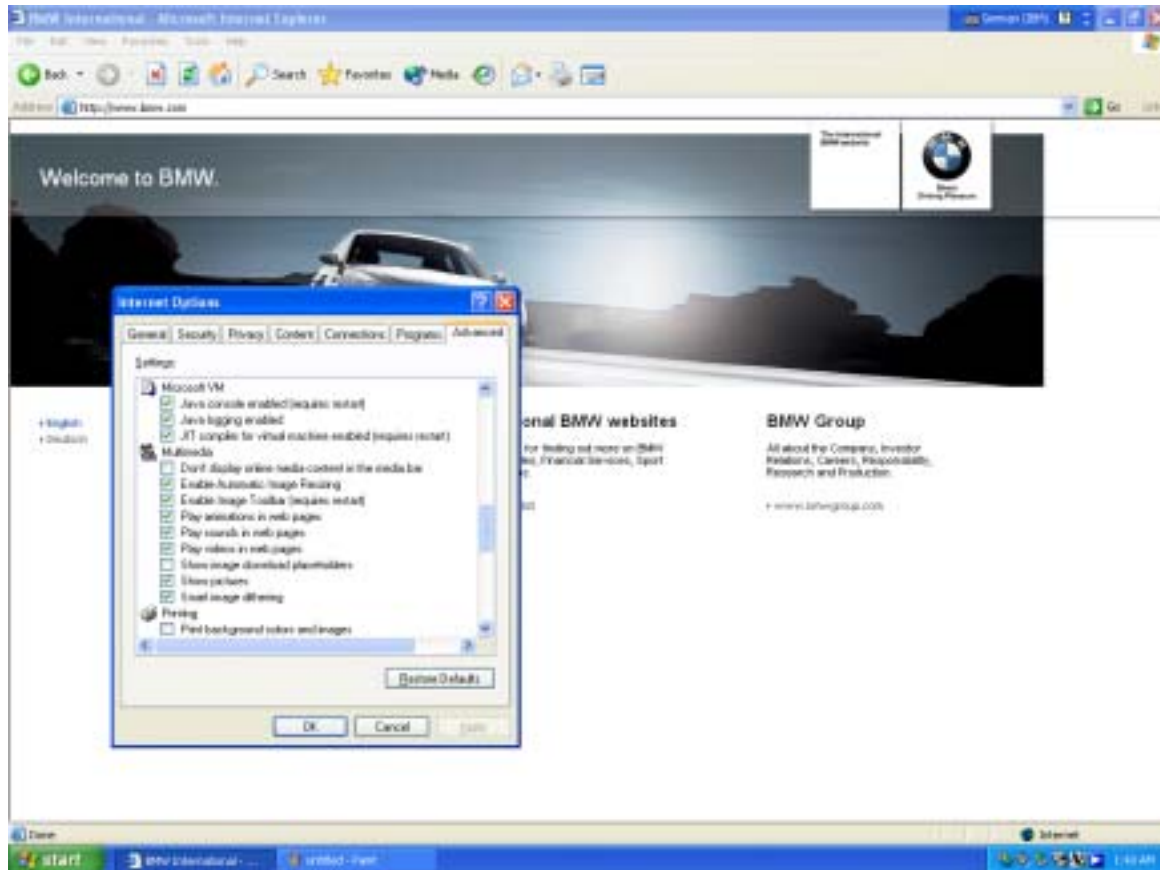


#### 5.2.4.4. Step 4: Activation of Microsoft VM

In Internet Explorer open the “**Internet Options**” dialog box by selecting “**Tools -> Internet Options**”. Select the “**Advanced**” tab.

Under the “**Microsoft VM**” entry, activate the following options:

- **Java console enabled (requires restart)**
- **Java logging enabled**
- **JIT compiler for virtual machine enabled (requires restart)**





### 5.2.5. Computer settings

The Internet connection and the running client components can be disturbed by system programs. To prevent this from happening during a Progman Online session it is necessary to implement specific Display Properties' and Power Option Properties' settings. Otherwise problems may occur during a vehicle session.

#### 5.2.5.1. Display Properties - Screen saver

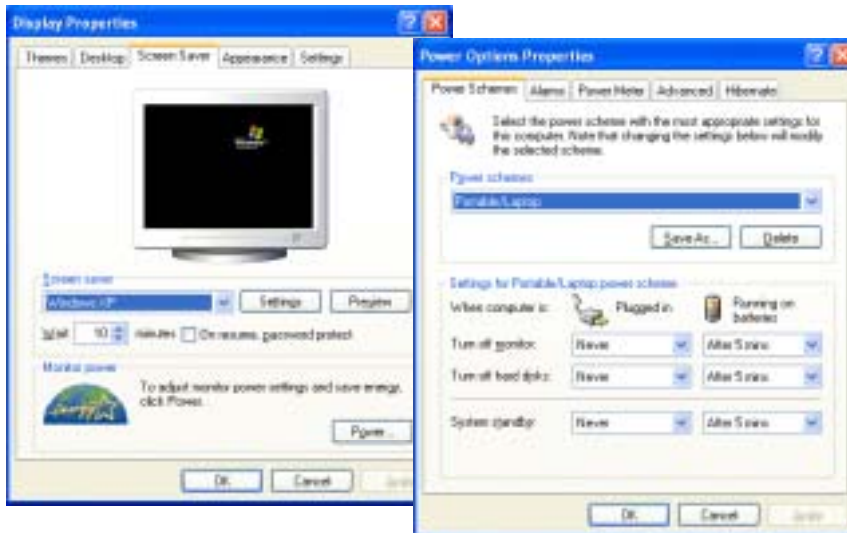
Choose **"Start -> Control Panel -> Appearance and Themes -> Display"**.

Make sure that under the **"Screen Saver"** tab your Display Properties are set to a screen saver that does not inhibit the system's performance. BMW recommends using one of the standard screen savers without a password.



#### 5.2.5.2. Power Options Properties

Choose **"Start -> Control Panel -> Appearance and Themes -> Display"** and then the **"Power..."** button. The dialog box **"Power Options Properties"** is then displayed. Select the **"Power Schemes"** tab and make sure that **"Turn off monitor"**, **"Turn off hard disks"** and **"System standby"** in the **"Plugged in"** column are all set to **"Never"**.



## 6. Frequently asked questions & solutions

- ? What do I need to be able to use BMW Online Tools?  
⇒ For BMW Online Tools you will need a Pass Thru interface Tool, an internet connection, a subscription to [www.bmwtechinfo.com](http://www.bmwtechinfo.com), an approved power supply, cables, a 1996 or newer vehicle, ignition to remain on and the necessary software. Please check section recommendations.
- ? How fast should my Internet access be?  
⇒ If you would like to use the BMW Online Tools, you should be connected to the Internet. We do recommend an ISDN connection or faster.
- ? When I try to start DIS Communication I get the error message "...Did not get session key..."  
⇒ This is a transient error in the connection to the server due to delays in the data transfer. Please retry the connection:
- Disconnect from the server
  - Clear your browser cache and cookies
  - Close your browser
  - Reopen the browser
  - Reconnect to the server
  - Start "DIS Communication"
- If the problem persists you should shut down and restart your personal computer.  
Our computing center will refuse activation if your IP address is not specified.  
Current host: [bmwta.bmw-serviceweb.de](http://bmwta.bmw-serviceweb.de) (194.231.170.125)  
Activation range, network: 194.231.170.112/ 255.255.255.240  
Port: TCP/3144 ; 344
- ? I'm having problems displaying the navigation bars: letters are cut off and buttons are missing.  
⇒ For a correct display, please set "Small Fonts" in your system control and take into account our technical requirements.
- ? Everything is connected as instructed and there still seems to be a communication problem.  
⇒
- Double check all connections, check the battery charger, check for pertinent bulletins in group 04, 07, 09, check that your ignition is on, ensure your internet connection is valid. If starting Online Diagnosis is the IFH server on your PC started?
  - Check to make sure your PC's firewall is not blocking access to the servers. Also, be sure to have your PC's cookies set as instructed.
  - Close the Online session.
  - Reboot your PC and continue former work.
- ? After installation of Progman Online I have problems to start the Client?  
⇒
- Close the Online session and close all Browser windows
  - Remove the "Progman Online Client Components" [Windows start -> Control Panel -> Add or Remove programs]
  - Reinstall Progman Online
- ? I have problems to install the Client components?  
⇒ Double check if the user account has administrator rights and that the Browser settings are correctly configured.
- ? When control units do not respond correctly or cannot be coded after programming.  
⇒
- Terminate Progman Online.
  - Disconnect the connection with the vehicle.
  - Turn ignition off.
  - Disconnect the battery charger.
  - Close vehicle.
  - Wait 16 minutes.
  - Connect all again and turn on ignition.
  - Continue former work.



- ? Certain control units are listed “to be installed” in the Measures Plan that was produced before any programming has been carried out.
- ⇒
- Shut down Progman Online.
  - Start “Diagnosis” and make a short test to confirm all control modules are operational.
  - Continue former work.
- ? In case of programming abort, some control units will be marked with an “x” in the Final Report after programming.
- ⇒
- Shut down Progman Online.
  - Start “Diagnosis” and make a short test to confirm all control modules are operational.
  - Restart Progman Online
- ? After performing a programming update the airbag light is on. One of the airbag system satellites has a “system time” fault stored.
- ⇒ Start Diagnosis and check airbag control unit.
- ? When downloading files the calculated value does not correspond to the real one. In some cases the displayed value is higher than 100%.
- ⇒ To calculate the required download time the client sends reference packages before starting the download. Based on their transfer time, the average download time is calculated. Especially when using a fast Internet connection it is likely that the calculated and the real time do not correspond. This is due to an oscillating data transfer rate. Since the originally estimated time will not be recalculated dynamically, download values higher than 100% can be displayed.
- ? Problems during download of service packets. The Download takes a long time and the displayed value is far over 100%.
- ⇒ In some cases a request are blocked from an internet security service. Please restart the session, Progman Online check how many files are still existent on the client and download only the missing ones. Normally this takes a shorter time than the full download and then the communication with the vehicle (next step) starts.
- ? Failure message pops up and display: “Lost connection to server”
- ⇒ This message is displayed, when the connection to the Progman server is lost, e.g. during interferences in the internet connection. This message is also being displayed when the interference was temporary and Progman Online was able to reconnect the server.
- ⇒ If the message occurs during programming or coding an ECU, the interferences could result in an abort situation. Please repeat the programming or coding action.
- ⇒ Do you have this message often, please inform your internet provider.
- ? Failure message are displayed: “Vehicle information could not be determined. Terminate program. Further information could be obtained from technical market support.” Restart your PC and attempt procedure again.
- ⇒ Please check first if the ignition is switched on and that the battery charger voltage is above 12.6 Volt. If the problem is still existent, please inform the technical market support by sending an email to [servicetechinfo@bmwna.com](mailto:servicetechinfo@bmwna.com).
- ? The following message could be displayed during the session: “If an OPPS/OPS is connected to the MOST port, disconnect the MOST port now, remove the OPPS/OPS from the MOST ring and close the MOST ring with the original flash plug (bridge) in the vehicle. Then proceed with ‘Continue’ ”.
- ⇒ This message is only relevant, when another interface is used (other than a PTT) and should be ignored in this case (Press ‘Continue’).

## 7. General Rules for Programming and Coding

### Preparatory measures

- Switch the engine off.
- Shift the manual transmission to neutral or the automatic transmission to "Park".
- Activate the electromechanical parking brake or apply the parking brake.
- Make sure that the temperature of the transmission oil is less than 85 °C (185 °F).
- Switch off all electrical consumers, lights and turn signals.
- E65/E66: The fuel tank has to be filled up or the fuse "F73" in the fuse box in the trunk has to be disconnected (programming of vehicles with little fuel can cause damage of the fuel pump).
- Switch off the wiper/washer system. The wipers may be actuated during programming. Make sure that the wiper can move freely.
- Make a note of all FM and AM radio frequencies.
- Connect an approved battery charger. Do not connect or disconnect the battery charger while programming; the voltage of the vehicle electrical system must not fall below 12.6 V.
- Recharge the battery before starting so that the battery voltage is at least 12.6 volts.
- Make sure that all control units are installed and working correctly.
- Carry out a diagnostic procedure before working with Progman Online. Occurring faults have to be remediated before the programming session. Any existing fault codes must be cleared.
- Before programming, rectify any fault messages that may be present and clear any fault codes stored.
- Set up a cable connection between the vehicle interface and the vehicle. (do not program wirelessly or use a Blue Tooth PTT)
- Check the cable routing. Cables routed through open windows could be damaged when the windows are automatically initialized. Do not route cables through open windows.
- All stored FM and AM radio stations must be noted. During programming and coding it is possible that the stored entries could be lost.
- Switch on the ignition (terminal 15)

### During the programming session

- Leave the ignition switched on unless Progman gives a prompt to the contrary.
- Do not operate or move anything on the vehicle (hood, tailgate, doors, windows, seats, steering wheel, switches and adjusting knobs of any kind, etc.).
- Do not cut off any connection between Internet, Progman Online, the vehicle interface and the vehicle.
- Do not connect or disconnect the charger during programming. If the vehicle system voltage is too low, it could happen that a control unit cannot be programmed correctly. This control unit can then no longer be used and will have to be replaced. Make sure that the vehicle system voltage does not drop below 12.6 volts while programming is in progress.

### Follow-up measures

- Perform the remaining initializations.
- After leaving the Progman Online session the vehicle let the vehicle standing for at least 5 minutes with terminal R OFF so that all control units go into sleep mode.
- Perform a diagnosis session with the diagnosis system
- Eliminate all fault messages present and clear the stored fault codes (quick delete).