

Flexibility for Vision Product Family – Remote Assistance

General Description

Servicing and diagnosing problems of vehicles and machinery that are distributed over the whole globe can be very costly. By supporting remote access to vehicle data, such as run-time parameters or error logs, problems can be diagnosed in the field much faster, thus significantly reducing vehicle downtimes, travel and transport costs.

System requirements (local system)	
Minimum	PC with 400 MHz CPU, 96 MB RAM, 800x600 256-color display
Recommended	PC with 1.0 GHz or higher CPU, 256 MB or more RAM, 1024x768 high-color 32-bit display
Operating system	Microsoft Windows XP
Other software	Microsoft .NET Framework 3.5SP1*
Other hardware	GSM data call capable modem (e.g. Falcom Tango 55-2) and SIM card
System requirements (remote system)	
ECU	Remote Assistance enabled Vision, VisionPlus
GSM modem	GSM data call capable modem with RS-232 interface (e.g. Falcom Tango 55-2) and SIM card

*automatically downloaded during installation if not installed on the PC

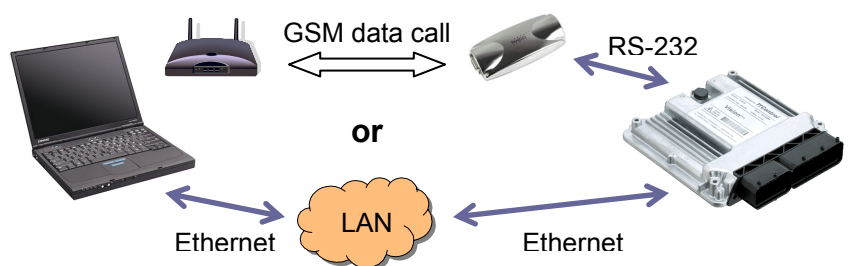
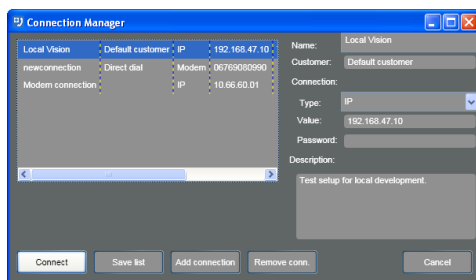
Remote Assistance provides a flexible and easy-to-use solution for enhancing Vision display controllers with remote assistance support. It uses the wide-spread communication standards GSM and PPP for remote operation, and Ethernet for local operation for establishing the connection between a self-configuring PC-based service tool and a Remote Assistance-enabled Vision product family display controller.

An XML configuration file that is stored on the display controller defines which variables and files are accessible over the remote link. The PC software synchronizes with the connected Vision by downloading and interpreting this file, and automatically shows the correct user interface for the connected device.

Connect to remote Vision display controllers over GSM or Ethernet

Connect to a Remote Assistance-enabled remote Vision display controller using standard GSM modems or using an Ethernet connection. All remote access operations are password-protected. The PC service tool allows setting passwords for different Vision controllers.

The built-in Connection Manager is used for storing and calling your remote devices.



Always stay consistent with the remote application

Each remote-assistance-enabled user application has a corresponding XML file that controls which variables and files should be accessible over the remote connection. This file is stored on the Vision together with the user application and gets downloaded by the PC application as soon as the connection has been established. The PC software then automatically configures its interface according to the received configuration file and, thus, always shows the correct user interface for the currently connected Vision, regardless of whether it is located in the field or in your local network.

With the included multi-language support it is possible to define multiple versions of all descriptive texts in the configuration file for different languages, which are then displayed in the PC application depending on the currently selected language (implemented in a later version).

The screenshot shows the TTControl Link'n'Sync application interface. On the left, there are several control panels for 'Alarms', 'update ECU', 'update Vision', and 'copy application file to Vision'. On the right, an XML configuration snippet is displayed, defining groups like 'Power ON remote function', 'Alarms', and 'update ECU', along with variables, enums, and function codes.

```

<Group Name="Power ON remote function">
  <Description>variable to power on remote function</Description>
  <Items>
    <Variable Name="Activate remote functions" Ref=".VIRA_active">
      <WritePermission/>
    </Variable>
  </Items>
</Group>
<Group Name="Alarms">
  <Description>machine alarms</Description>
  <Items>
    <Variable Name="alarms active" Ref=".activealarms">
      <ReadPermission/>
    </Variable>
  </Items>
</Group>
<Group Name="update ECU">
  <Description>update the application software of ECU's connected to the
  <Items>
    <Enum>
      <Variable Name="Select Filename of binary file" Ref=".ECU_file_hex">
        <Description>Choose the ECU to upgrade from the list</Description>
        <WritePermission />
      </Variable>
      <EnumValue Value="ECU1.s19">ECU1</EnumValue>
      <EnumValue Value="ECU2.s19">ECU2</EnumValue>
      <EnumValue Value="ECU3.s19">ECU3</EnumValue>
    </Enum>
    <Function Name="Update ECUs" Ref=".control_UpdateESXState" Type="Cont
    <Description>This function updates the specified ECU connected to t
    <StatusCodes>
      <Code Name="started" Code="0">Function running</Code>
    </StatusCodes>
    <ReturnCodes>
      <Code Name="finished" Code="128">Function stopped</Code>
    </ReturnCodes>
  
```

Monitor and change remote data

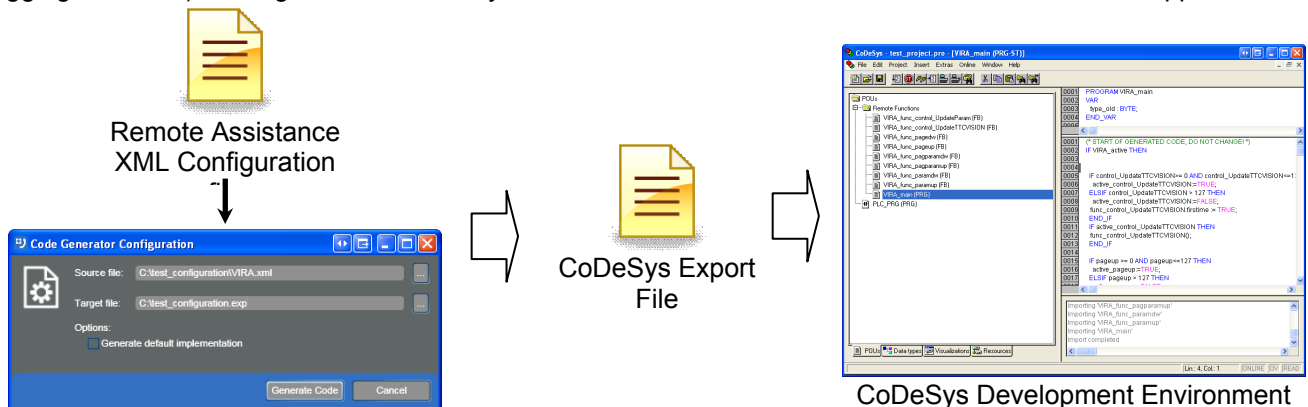
The Remote Assistance XML configuration file format provides control of which parameters of the user application can be monitored and/or modified in the PC-side application. Additionally, the PC service tool allows dynamic changes in the list of updated data in order to trade-off between update speed and the number of variables that are updated at the same time. In order to make best use of the limited GSM bandwidth, Remote Control uses compression for all communication.

Transfer files

Files like software updates may be uploaded to or error logs downloaded from the file system of remote Vision display controllers or TTControl's USB/RS-232 memory stick units that have been connected to a remote **Vision**.

Flexible and extensible – Write your own service functions

Remote Assistance defines a standard calling interface that maps user-defined service functions into the user interface of the PC application. Specify the interface of your own service function (input/output parameters, status and error codes) in the XML configuration file and let the built-in code generator create the interface code for importing into your CoDeSys® application. Implement your own service functionality (e.g. application-level authentication, logging functions) in the generated CoDeSys function block and then use the function from the PC application.



Subject to changes and corrections.

For further information, including price and availability, contact products@ttcontrol.com

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