Remote gaze-tracking system on basis of TightVNC

User manual

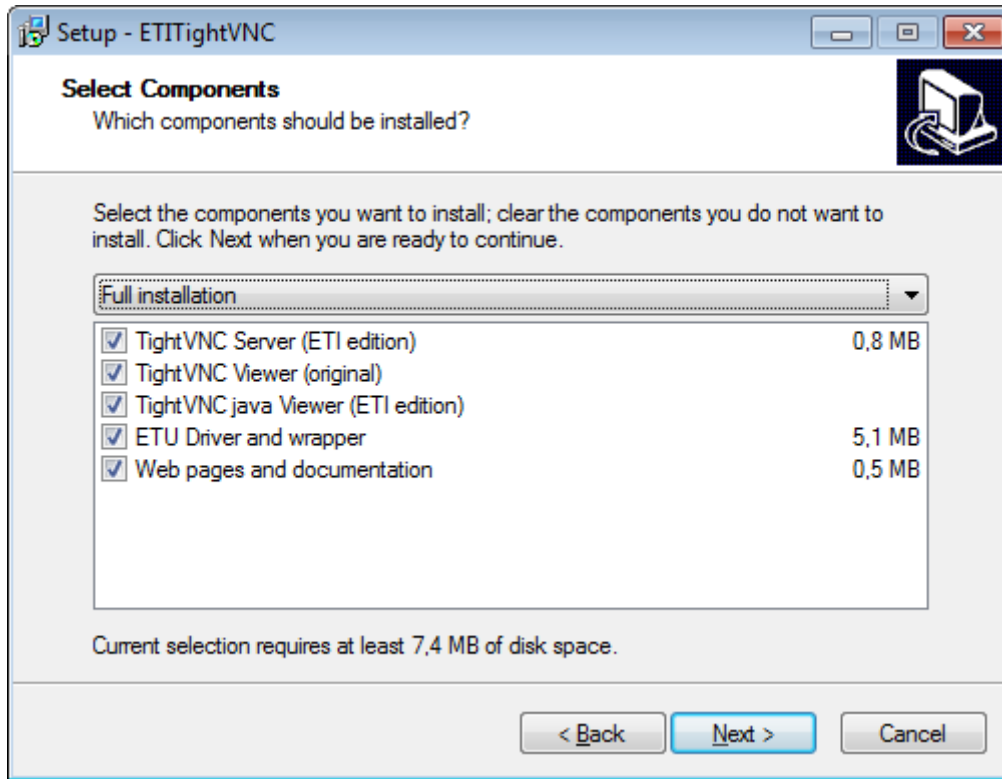| Author	Date	Version	Comments
Andrey Shipilov	02.11.09	0.1	Create document
Andrey Shipilov	07.11.09	0.2	Updates to the document

CONTENTS

COMPONENTS

Remote eye-tracking system contains 4 components:

- **_TightVNC server [ETI Edition]_** - main component of the remote eye-tracking system. It should be installed on the computer, which desctop will be shared between remote clients.

- **_TightVNC Java client [ETI Edition]_** – java version of the client, processing eye-tracking information, sending it to the server and drawing eye-tracking marks, received from other clients.

- **_Eye tracking universal driver (ETUDriver)_** – component, used to collect eye-tracking information from eye-tracking device without necessity to write hardware-specific code. It includes connectors to three types of eye-tracking devices and three simulators.

- **_ETU Driver Wrapper_** – dynamic link library, used as a bridge between java client and ETUDriver. This library uses JNI approach to process messages between java and C++ code.

MAIN COMPONENTS INSTALLATION

Start ***ETITightVNC_x.y.z.e.exe[1]*** to setup all needed components of remote eye-tracking system. It will suggest five options to install:

It will automatically copy needed components to the right destinations. Also at the end of installation it will be possible to start installation of ETUDriver.
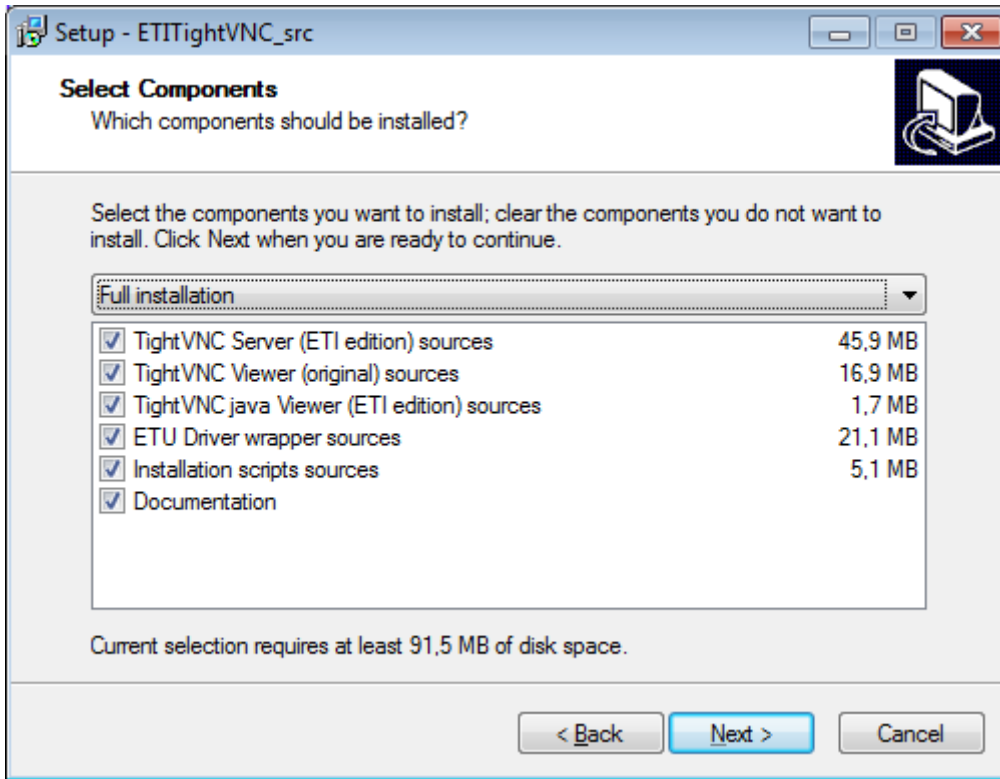
!Limitation! *ETUDriverWrapper.dll* **file has to be placed to the "C:\"[2]**

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1 **x.y.z** – version of TightVNC, that was used as a basis for creating current ETI edition of server and java client
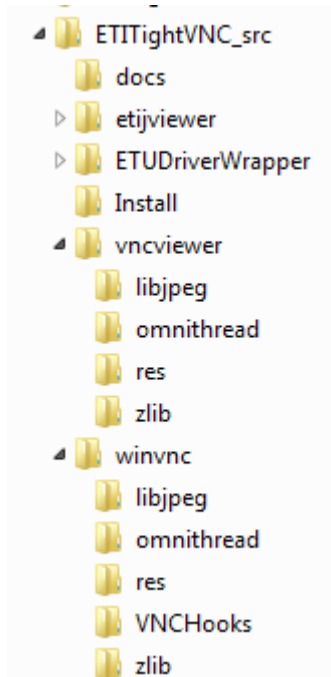   **e** – version of ETI edition
2 It is planned to add possibility to register wrapper dll in the system, so it would be possible to put this file in other location.

SOURCE CODES

Start ***ETITightVNC_x.y.z.e_src.exe***[3] to unzip source codes of remote eye-tracking system. It will suggest five options to install:

After installation process source codes will be organized in the next structure:
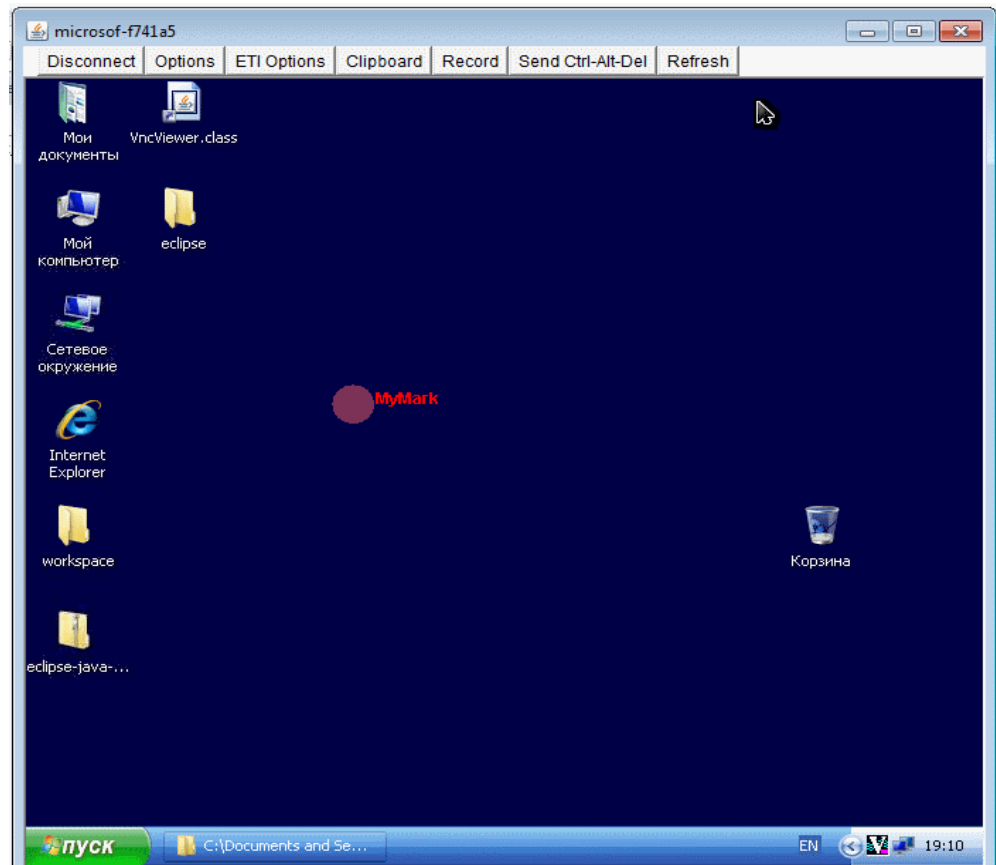

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3   **x.y.z** – version of TightVNC, that was used as a basis for creating current ETI edition of server and java client
    e – version of ETI edition

INTERFACES

ETI edition of TightVNC has slight changes in the interface of the client.

Main window

There are two changes in the interface of main window of TightVNC java client – additional control "ETI Options" on the buttons panel and drawing of ETI marks on the screen.

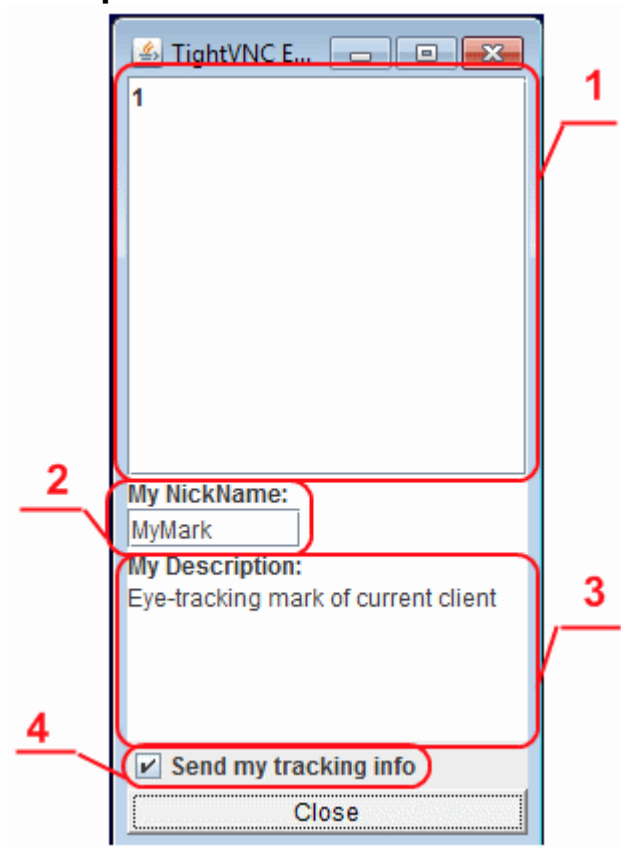ETI mark consist of two components – graphical shape and text:

Current version of ETI edition of TightVNC java client implements only one type of shape – transparent circle of some color.
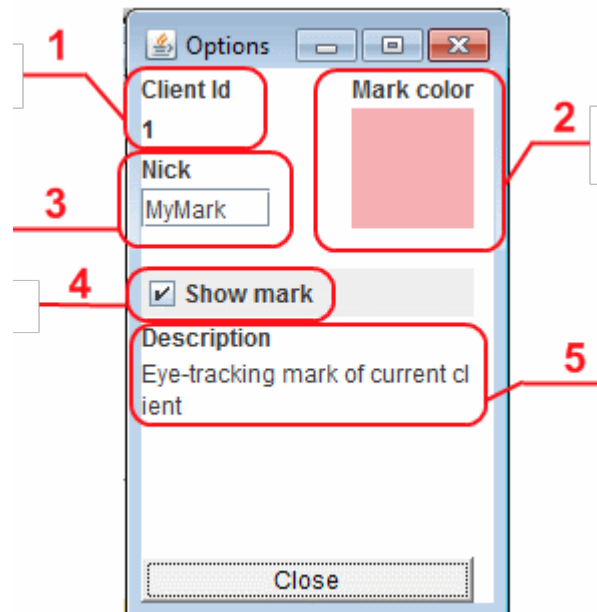
ETI Options

ETI Options include two windows. Main options of the current client and options of marks of remote clients.

Client options

1. List of unique Ids of remote clients, which eye-tracking information is processed. Double-click on the item in the list will open mark options window for corresponding remote client;

2. Nickname of the current client. It will be sent to teh server and propagated to other clients to show on the screen;

3. Short description of the current client. It will be sent to teh server and propagated to other clients;

4. Visibility flag. If not set – eye-tracking information wouldn't be sent to the server.

Mark options

1. Unique Id of the client, assigned by the server;

2. Color chooser component, allowing to define RGB components of the mark on the screen (alfa channel will be assigned 50% transparency);

3. Nickname of the client. Initiality it will be received from the server, but it's possible to define your own value. This text will be drawn on the screen next to the mark;

4. Visibility flag. If not set – mark for this client wouldn't be shown on the screen;

5. Short description of the client, received from server. Read-only.

ETU Driver Options

This dialog window allows user to control ETU Driver options and control it. Java client can receive eye-tracking information only if this window is open.