

Interfacing Resolvigen 3 with AutoVue Innova 1.02

Author : Paola Borgnolo (OCD France)
Carlo Magnaghi (Tecnosoft srl)
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Version 1.02 of Innova can export results for antibody identification tests to Resolvigen 3, moreover:

- It will export group identification results to Resolvigen 3.
- It will export patient's antigenic profiles for Rh and Kell.
- It will export results obtained with antibody screening panels when exporting results for antibody identification panels.

AutoVue Innova 1.02 also differs from previous in the way it manages archived images.

In order to interface with Innova 1.02 you must use Resolvigen 3 version 1.20rc4 or above.

When interfacing with AutoVue Innova 1.02, make sure that you are using Resolvigen 3 1.20rc4 (or above) and select AutoVue as instrument type within Resolvigen 3.

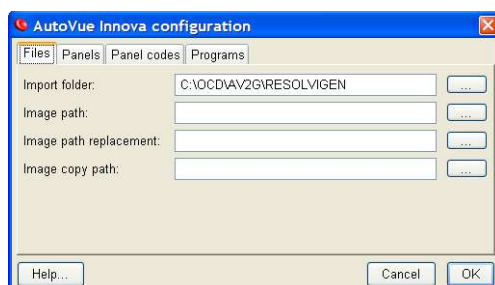
Also note that from version 1.20rc4 onward, Resolvigen 3 no longer requires abilitation codes for interfacing to instruments.

Quick start

If you do not have time to go through this document, please read at least this paragraph.

In order to setup an instrument select **Configure** in **Tools** menu, and click on **Instruments** tab.

Then select AutoVue from **Available Instruments Types** (not AutoVuePre or AutoVue1.01) and click the **Add** button. Click **Edit Settings** button to configure the AutoVue interface module. The configuration reported below is reasonable:



If you want BioVue images to remain available for Resolvigen 3 even after they are deleted from Innova, you should create a directory and enter its path in **Image copy path**; the **Image path** and **Image path replacement** fields should be left blank in 99.9% of the cases, so leave them blank unless you wish to go into the details of this document.

Innova directory structure

Innova exports test data for use by Resolvigen 3 into XML files named IdentXXXX.xml (where XXXX represent four digits from 0000 to 9999). After acquisition Innova saves images in JPEG (Joint Photographic Exper Group) format files with names like 22101264_001.JPG (where the initial part contains part of the barcode of the BioVue cassette).

Two directories are relevant when interfacing Resolvigen 3 to Innova:

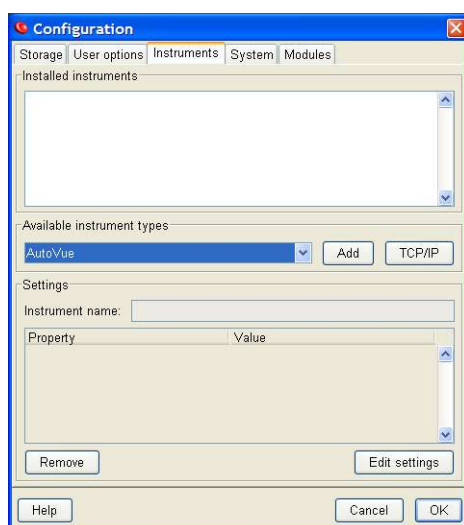
- The directory in which Innova stores IdentXXXX.xml files; this is usually **C:\OCD\AV2G\RESOLVIGEN**.
- The directory in which BioVue JPEG images are stored; this is usually

C:\OCD\AV2G\RESOLVIGEN\IMAGES.

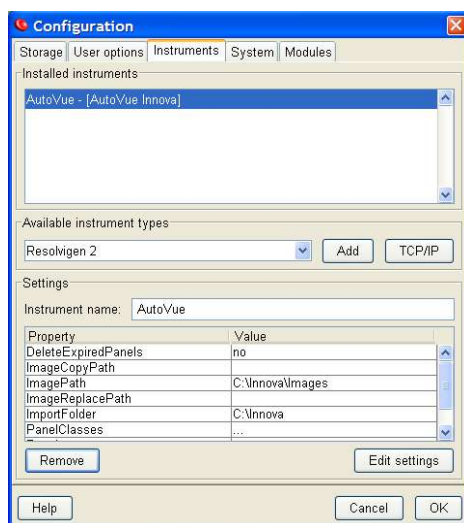
Resolvigen 3 defines a third directory which it uses to store copies of the BioVue images; if this directory is defined, Resolvigen 3 copies images here when importing data so that they are permanently stored even in case Innova software deletes images or the software directory structure is changed.

Resolvigen 3 setup

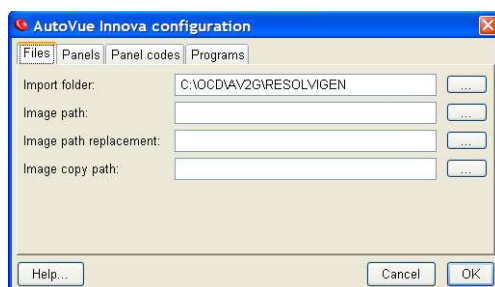
In order to setup an instrument select **Configure** in **Tools** menu, and click on **Instruments** tab. Then select AutoVue from **Available Instruments Types** (not AutoVuePre or AutoVue1.01) and click the **Add** button.



A new instrument will be added to the **Installed Instruments** list and default values will be displayed for it in the **Property/Value** table at the bottom of the window.



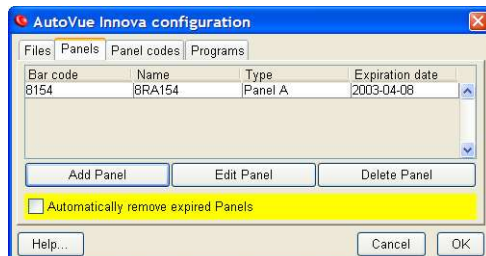
Click **Edit Settings** button to configure the AutoVue interface module. The configuration window contains four tabs; the first tab, **Files**, shows information related to the directory structure.



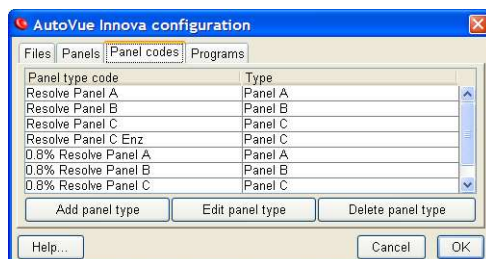
You would usually leave **Image path** and **Image path replacement** empty; these fields are used when Innova and Resolvigen 3 run on different machines and data is shared by mapping a directory. For example, if images are stored on Innova PC in C:\OCD\AV2G\RESOLVIGEN\IMAGES and the directory C:\OCD\AV2G\RESOLVIGEN is mapped to Z: on Resolvigen 3 PC, you would set **Image path** to C:\OCD\AV2G\RESOLVIGEN\IMAGES and **Image path replacement** to Z:\IMAGES. **Image copy path** may be left undefined: in this case images will not be copied and Resolvigen 3 will search the original path when requested to display a BioVue image.

The next three tabs contain information that is needed by Resolvigen 3 to translate information transferred from Innova.

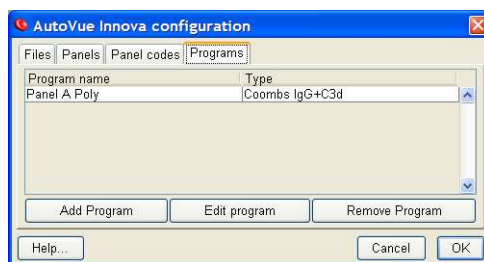
The **Panels** tab lists the correspondences between barcodes used by Innova to identify Panels, and actual Panel codes (e.g. RA123) used by Resolvigen 3.



The **Panel codes** tab lists the correspondences between names used by Innova to identify different types of panels with the types used by Resolvigen 3.



The **Programs** tab matches different Programs used by Innova to the different reaction phases (temperature, enzymes, etc.) used by Resolvigen 3.

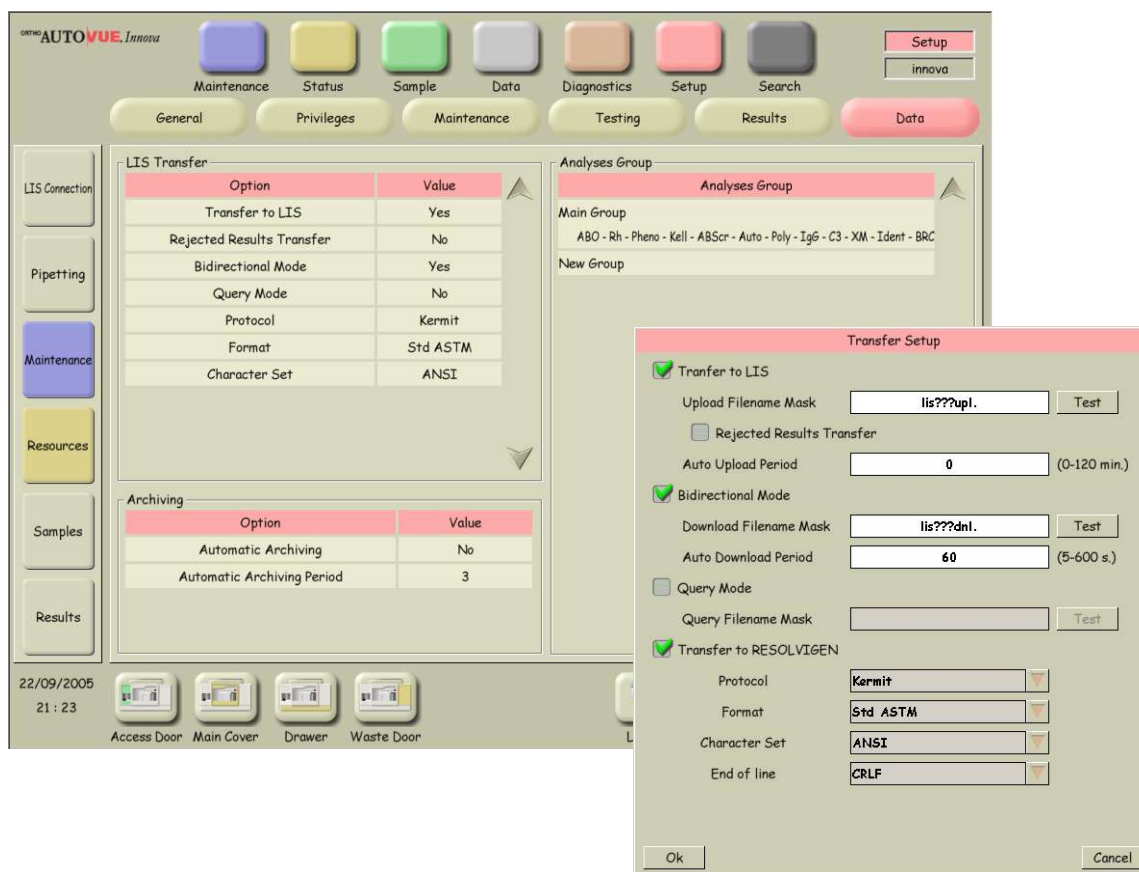


You do not need to fill any of these information right now: Resolvigen 3 will query for different pieces of information when transferring data from Innova and will remember them for the next time.

Innova setup

In order to export results to Resolvigen 3, exporting to LIS must be enabled.

In **SETUP mode** select **Data** button on the right corner and click on **Transfer to LIS** field to open the transfer configuration window (transfer setup).



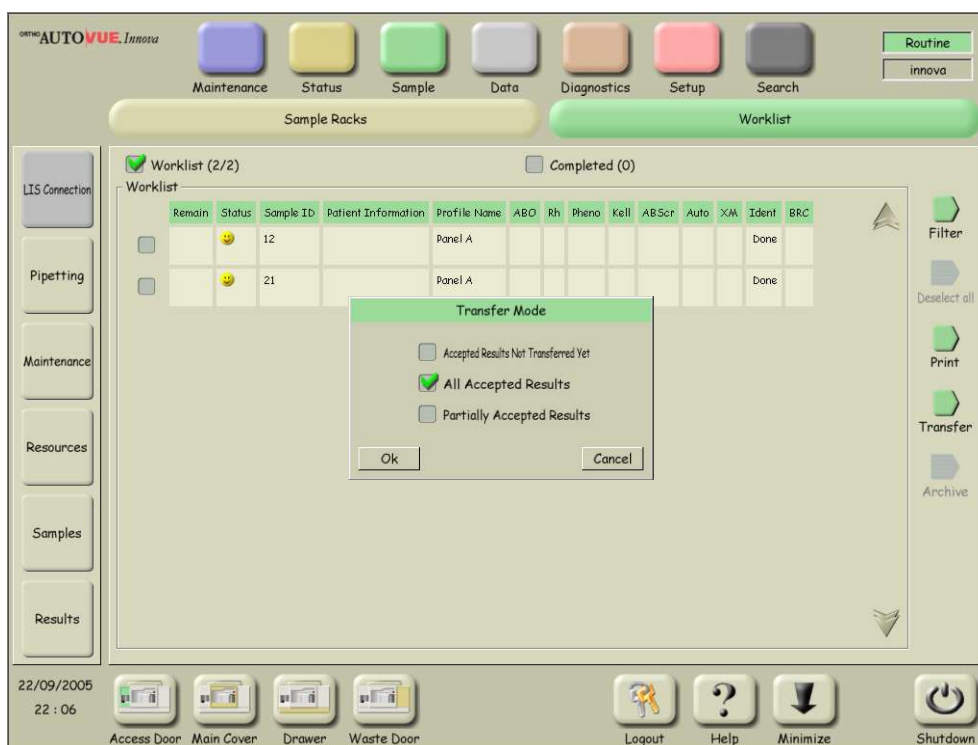
In this page you should make sure that the **Transfer to Resolvigen** option is checked; the **Protocol**, **Format**, **Character set** and **End of line** options should be configured as needed for transferring to LIS but are of no concern for Resolvigen 3.

Exporting from Innova

You should at this point perform screening and identification tests as required; please note that **data is only transferred to Resolvigen 3 when an identification test has been performed for a given patient.**

Usually you would perform some preliminary tests for a patient; for example ABO, Rh, Kell and say a SurgiScreen. If you try to transfer at this point **nothing is sent**: Resolvigen 3 should be involved in the antibody identification (not screening) task, so there is no reason to transfer results for screening tests alone.

If SurgiScreen is positive you would probably perform a Panel A test. When you ask to transfer Panel A/B/C results to Resolvigen 3, Innova will search results for the same patient for ABO, etc. for tests performed in the last 24 hours and transfer them as well. Please note Innova will be able to locate tests for the same patient **only if the PID is used** to identify the patient.



In **Routine** mode click on the **Sample** button at the top of the screen, then **Results** button on the left and select **Work list**.

Click on the **Transfer** icon on the right of the screen, then select in the popup dialog which tests you wish to transfer (e.g. **All accepted results**).

At this point results should have been exported. You may now import results into Resolvigen 3 as described below.

For troubleshooting, you may check that a file named IdentXXXX.xml (where XXXX is a numeric sequence from 0000 to 9999) was created in the directory C:\OCD\AV2G\RESOLVIGEN; you may check the content of this file using Microsoft Explorer.

The file should look like the following example:

```
<?xml version="1.0" ?>
<doc>
<Patient PID="1110071" FirstName="PRN71" FamilyName="NOM71" BirthDate="19891006000000">
<Analysis AnalysisName="ABO" AnalysisResult="B" />
<Analysis AnalysisName="Rh" AnalysisResult="POS" />
<Analysis AnalysisName="Pheno" AnalysisResult="ccEe" />
<Analysis AnalysisName="Kell" AnalysisResult="POS" />
<Analysis AnalysisName="IgG" AnalysisResult="POS" />
<Analysis AnalysisName="Poly" AnalysisResult="POS" />
<Sample SampleID="712" SampleType="PLASMA">
<Test Program="ABScr 3 Poly" PanelClass="Surgiscreen" PanelLot="1234">
<Result Hole="1" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124956_001.JPG" URClassID="21"
URClassName="Surg 1" URValue="0" />

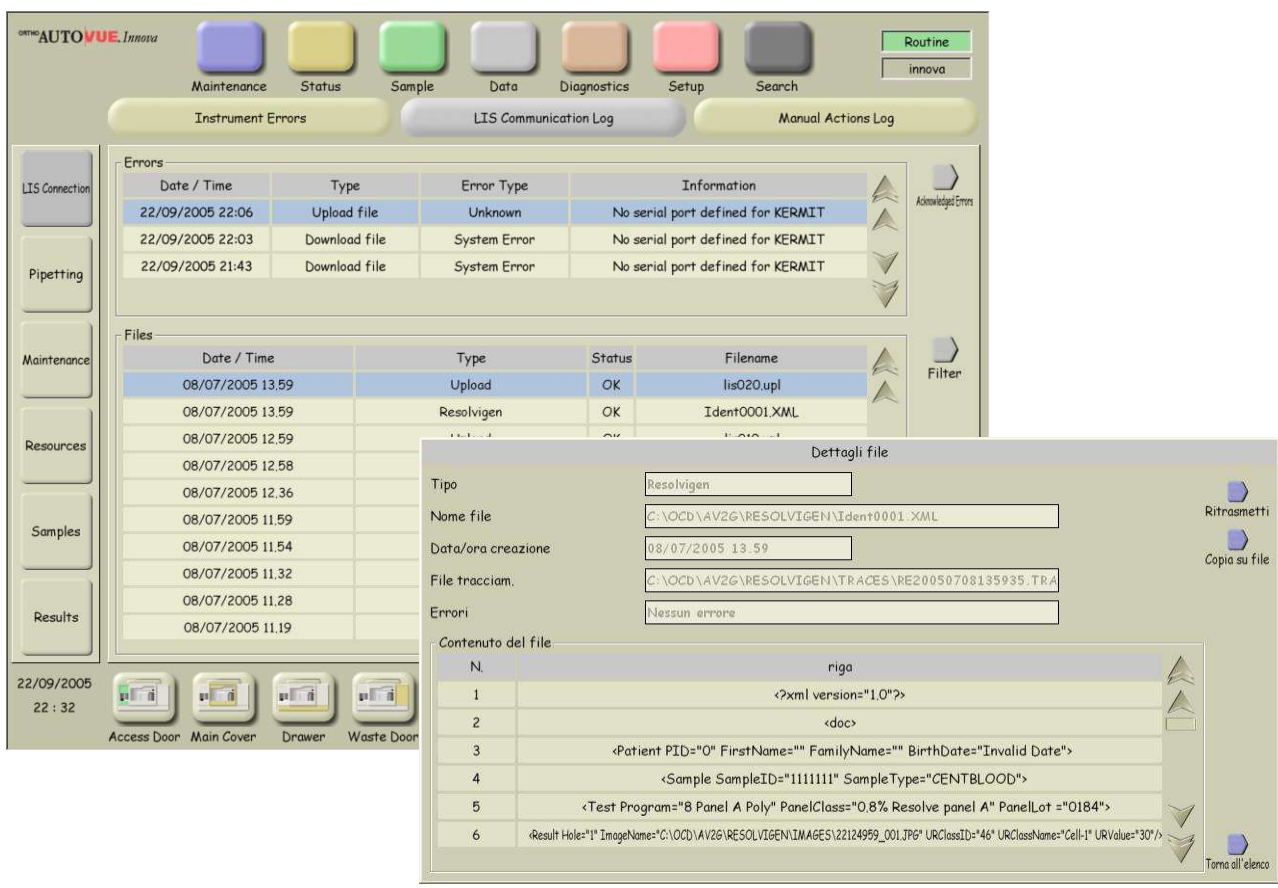
```

```

<Result Hole="2" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124956_001.JPG" URClassID="22"
URClassName="Surg 2" URValue="40" />
<Result Hole="3" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124956_001.JPG" URClassID="23"
URClassName="Surg 3" URValue="40" />
</Test>
<Test Program="Panel A Poly" PanelClass="Resolve panel A" PanelLot="1234">
<Result Hole="1" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124957_001.JPG" URClassID="46"
URClassName="Cell-1" URValue="0" />
<Result Hole="2" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124957_001.JPG" URClassID="47"
URClassName="Cell-2" URValue="40" />
<Result Hole="3" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124957_001.JPG" URClassID="48"
URClassName="Cell-3" URValue="40" />
<Result Hole="4" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124957_001.JPG" URClassID="49"
URClassName="Cell-4" URValue="40" />
<Result Hole="5" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124957_001.JPG" URClassID="50"
URClassName="Cell-5" URValue="40" />
<Result Hole="6" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124957_001.JPG" URClassID="51"
URClassName="Cell-6" URValue="0" />
<Result Hole="1" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124958_001.JPG" URClassID="52"
URClassName="Cell-7" URValue="0" />
<Result Hole="2" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124958_001.JPG" URClassID="53"
URClassName="Cell-8" URValue="40" />
<Result Hole="3" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124958_001.JPG" URClassID="54"
URClassName="Cell-9" URValue="40" />
<Result Hole="4" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124958_001.JPG" URClassID="55"
URClassName="Cell-10" URValue="40" />
<Result Hole="5" ImageName="C:\OCD\AV2G\RESOLVIGEN\IMAGES\22124958_001.JPG" URClassID="56"
URClassName="Cell-11" URValue="40" />
</Test>
</Sample>
</Patient>
</doc>
    
```

The only part worth examining are the names of the exported image files, for example C:\OCD\AV2G\RESOLVIGEN\IMAGE\22124958_001.JPG; in case the images are not displayed inside Resolvigen 3, you may wish to check that these files really exist.

You may later check which results have been transferred: In Routine mode click on the **Data** button at the top of the Screen (or on the **LIS Connection** on the left) then select LIS Communication Log. You may double click on any row of the file list to view details of the exported file and eventually to retransmit it.



Importing data

Select the AutoVue instrument from the **Instruments** item of the **File** menu.



Assuming this is the first time you import from Innova, Resolvigen 3 will ask for some information; increasingly less information will be asked for in the future when data is imported, as Resolvigen 3 remembers data entered by the user.

First Resolvigen 3 asks for the phase in which reactions measured with the program used by Innova should be recorded.



You will have to choose among the seven phases used by Resolvigen 3:

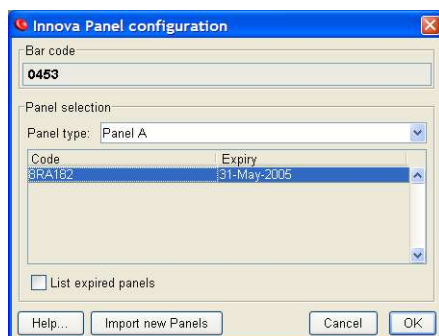
- Room temperature
- Room temperature with enzymes
- 37 °C
- 37 °C with enzymes
- Coombs polyspecific (anti-IgG+C3d)
- Coombs polyspecific (anti-IgG+C3d) with enzymes
- Coombs monospecific (anti-IgG only)

Next Resolvigen 3 will ask you for the panel type.



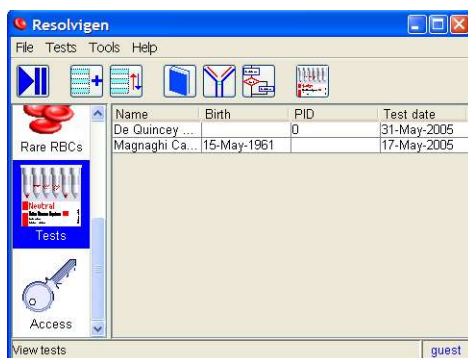
Resolvigen 3 needs to be informed that the panel type 'Resolve panel A' used by Innova is actually a 'Panel A'. It may seem obvious that 'Resolve panel A' matches 'Panel A', but Resolvigen 3 prefers to ask, just in case: better safe than sorry.

Finally Resolvigen 3 asks for the Panel corresponding to the barcode received from the Innova.

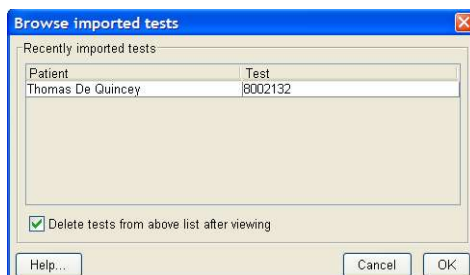


You should select a panel; if the needed panel is not available, you may decide to import it now by clicking the **Import new Panels** button.

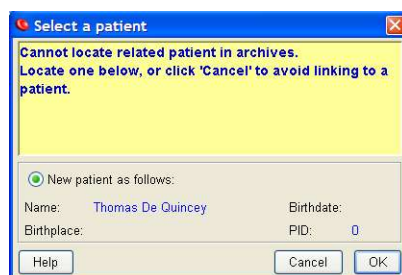
At this point the test should be imported correctly and you should be able to see it in the main window when the **Tests** group is selected.



Recently imported tests may be viewed by clicking the **BioVue** button in the toolbar.

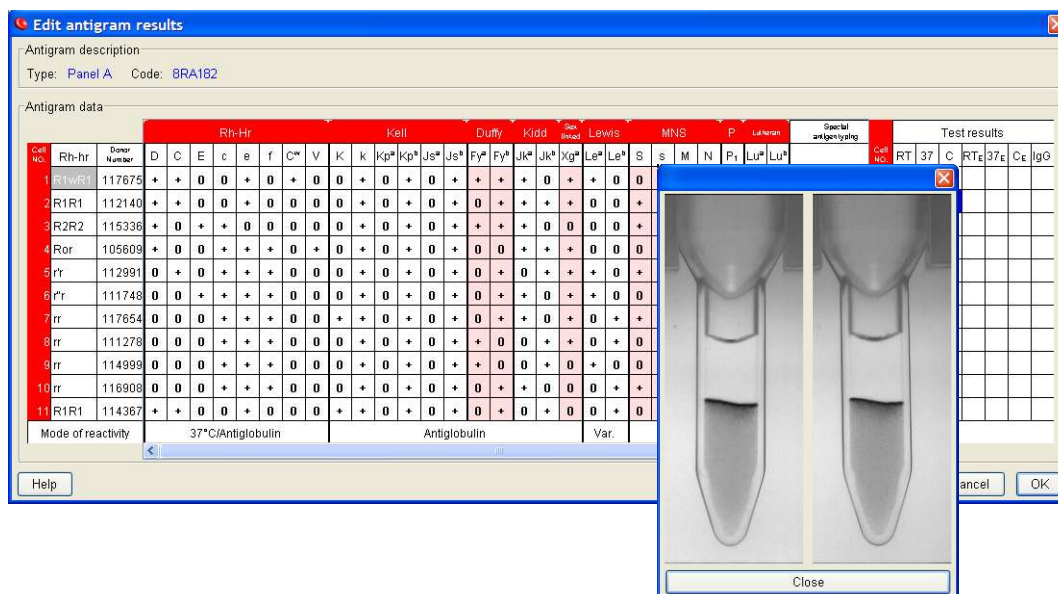


Select an item and click the **OK** button to view it. Please note that the test has been imported, but the corresponding patient has not been created, so Resolvigen 3 will ask you if a new patient should be created now unless a patient matching data for the test is already recorded in patients' archive.



Click **OK** to create the patient or **Cancel** to skip to viewing test data without creating a new patient.

You may now view the panel; by right-clicking on any of the scores you may view the image of the matching BioVue well.



Maintaining conversion tables

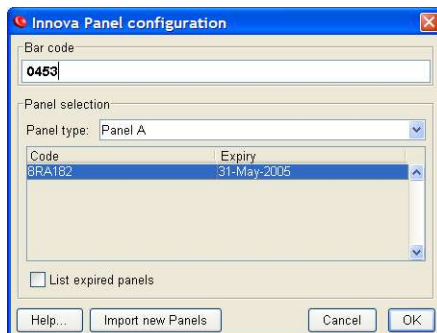
Each time Resolvigen 3 asks for a piece of information, like the phase in which reactions obtained with a specific Innova program should be stored, it keeps track of such information. It is possible to browse and edit stored information, for example for correcting mistakes.

Select **Configure** in **Tools** menu, click on the **Instruments** tab. Select the AutoVue instrument in the **Installed Instruments** list and click the **Edit settings** button.

The **Panels** tab lists the associations between barcodes and panel codes for all the recently used panels; if **Automatically remove expired Panels** is checked, expired panels (that cannot be used with Innova anymore) are automatically removed from this list; please note that these panels are not removed from Resolvigen 3 archives.

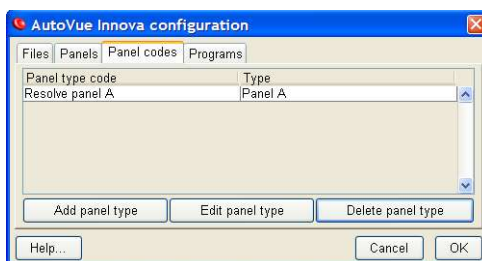


If you wish to remove one item from this list, just select it and click the **Delete Panel** button.



You may edit an item by selecting it and clicking the **Edit Panel** button. Click the **Add Panel** button to add a new item.

The **Panel codes** tab lists associations between the names used by Innova to identify panel types and the names used by Resolvigen 3.

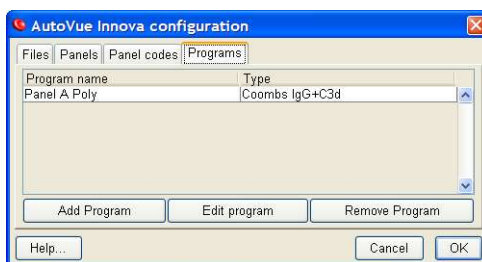


If you wish to remove one item from this list, just select it and click the **Delete panel type** button. You may edit an item by selecting it and clicking the **Edit panel type** button. Click the **Add panel type** button to add a new item.



The **Programs** tab list the associations between the names of the programs used by Innova and the phases in which Resolvigen records scores.

Test results							
Cell NO.	RT	37	C	RT _E	37 _E	C _E	IgG
1							
2							
3							



If you wish to remove one item from this list, just select it and click the **Remove program** button. You may edit an item by selecting it and clicking the **Edit program** button. Click the **Add program** button to add a new item.



Troubleshooting tips

Are you using **Resolvigen 3 1.20rc4** or later and **Innova 1.02**?

Are you trying to export screening tests alone? **Innova only exports data to Resolvigen 3 when Identification tests for a given patient are present**; at this point it will also export any other test (screening, ABO, Rh, Kell...) recently performed for the same patient.

Have you enabled exporting to LIS? The selected format is not important, but Innova will only export to Resolvigen 3 if the **Exporting to LIS option** is enabled.

Have you enabled **Transfer to RESOLVIGEN** in Innova configuration?

Can you see IDENTxxx.XML files in C:\OCD\AV2G\RESOLVIGEN after exporting from Innova? If not there is a configuration problem inside Innova software.

Are they deleted after importing to Resolvigen 3? if not there is a configuration problem inside Resolvigen 3 software.

Is AutoVue interface inside Resolvigen configured to import from C:\OCD\AV2G\RESOLVIGEN?

If you do not see BioVue images inside Resolvigen 3, are **Image path**, **Image path replacement** and **Image copy path** empty inside Resolvigen 3 configuration for AutoVue interface? This is the simplest configuration that works when both AutoVue Innova software and Resolvigen 3 are run on the same machine.

If results end up in the wrong phase, check configuration data in the **Programs** tab ('Maintaining Conversion tables' paragraph).

If results are exported with a wrong panel type or a wrong panel lot, check configuration data in the **Panels** and **Panel codes** tabs ('Maintaining Conversion tables' paragraph).