Offline Debug Improvement

Contents

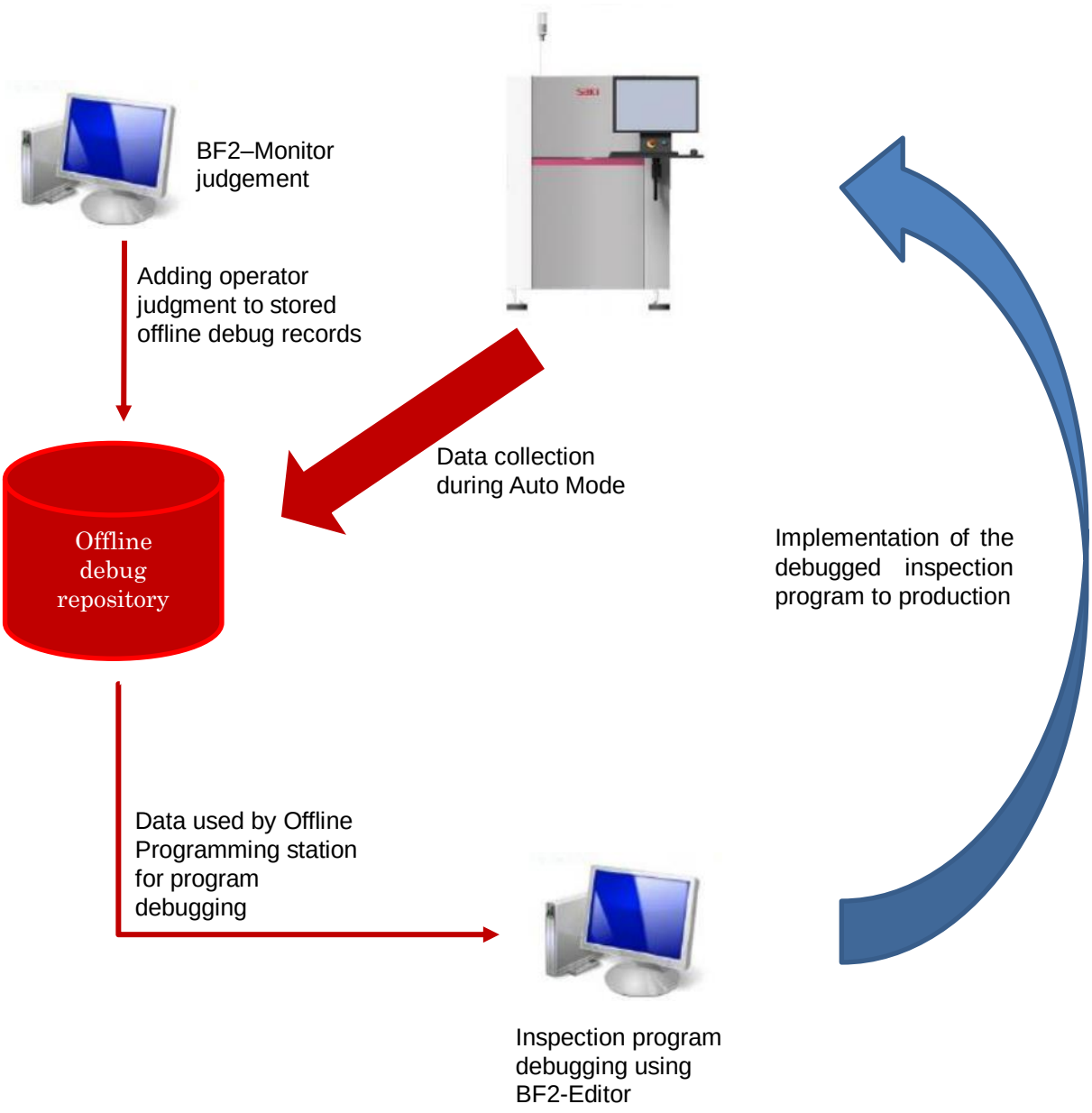
1. Outline

Offline Debug operation improvement. The Offline Debug function manual can be found in the 3D AOI programming manual, page II-225, and on the 3D SPI programming manual, page II-202.

2. Operating Environment

BF2 software version 3.5.x.x and higher, for 3Di-xx2.

3. Process workflow



4. Recipe Editor – Judgement setting

Added possibility to judge/change judgement of the *Offline Debug Data*.

The component's judgement is set either by the *BF2-Monitor* software, or by entering the recipe editor window, right clicking on the desired component and setting the judgement to *Ok*, *Not Judged*, Judged *False Call* or Judged *Ng*.

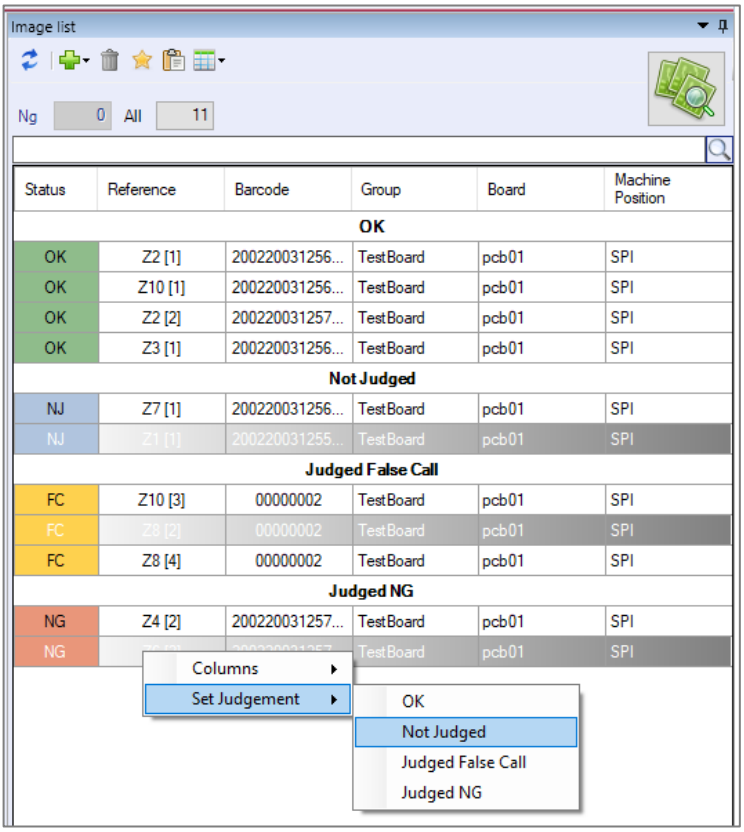


Figure 1 Judgment settings

OK	Set the components as OK.
NJ	Set the components as not judged by the operator.
FC	Set the components as judged as False Call by the operator.
NG	Set the components as judged as Ng by the operator

5. Recipe Editor – Grouping data by judgement

Added option to group the components by their judgement result.

Components are set to be grouped/ ungrouped by clicking on the icon  on the top of the image list section, and selecting the desired option.

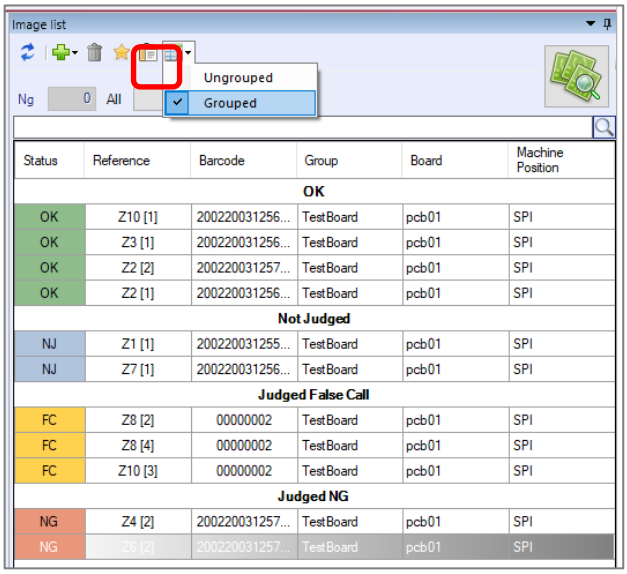


Figure 2 Components grouped by judgement result

6. Recipe Editor – Algorithm Expansion and Inspection Preset display

The *Algorithm Expansion* and the *Inspection Preset* applied to the data can be viewed in the recipe editor window.

To display these columns, it is necessary, while in the *Recipe Editor* Window, to right click on top of the components in the *Offline Debug* image list, and put a check mark on the desired columns.

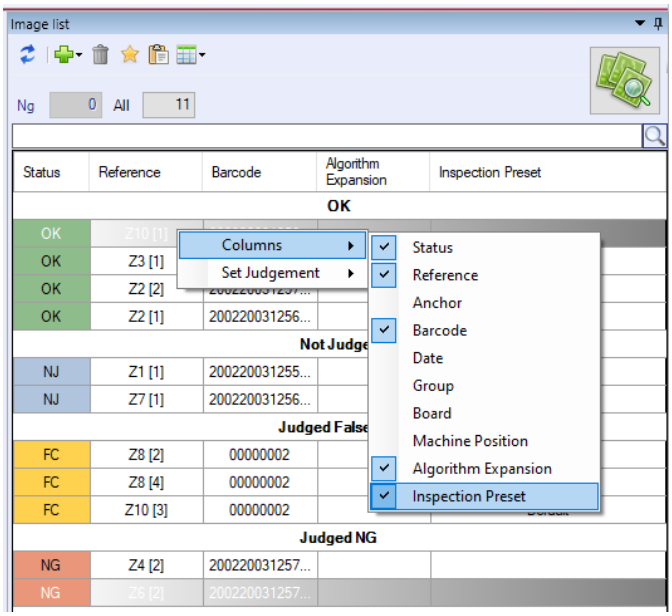


Figure 3 Algorithm Expansion and Inspection Preset Columns

7. Inspect data – data filtering improvement

Added the option to filter the boards by the date and time that they were last modified, from the *InspectData* tab.

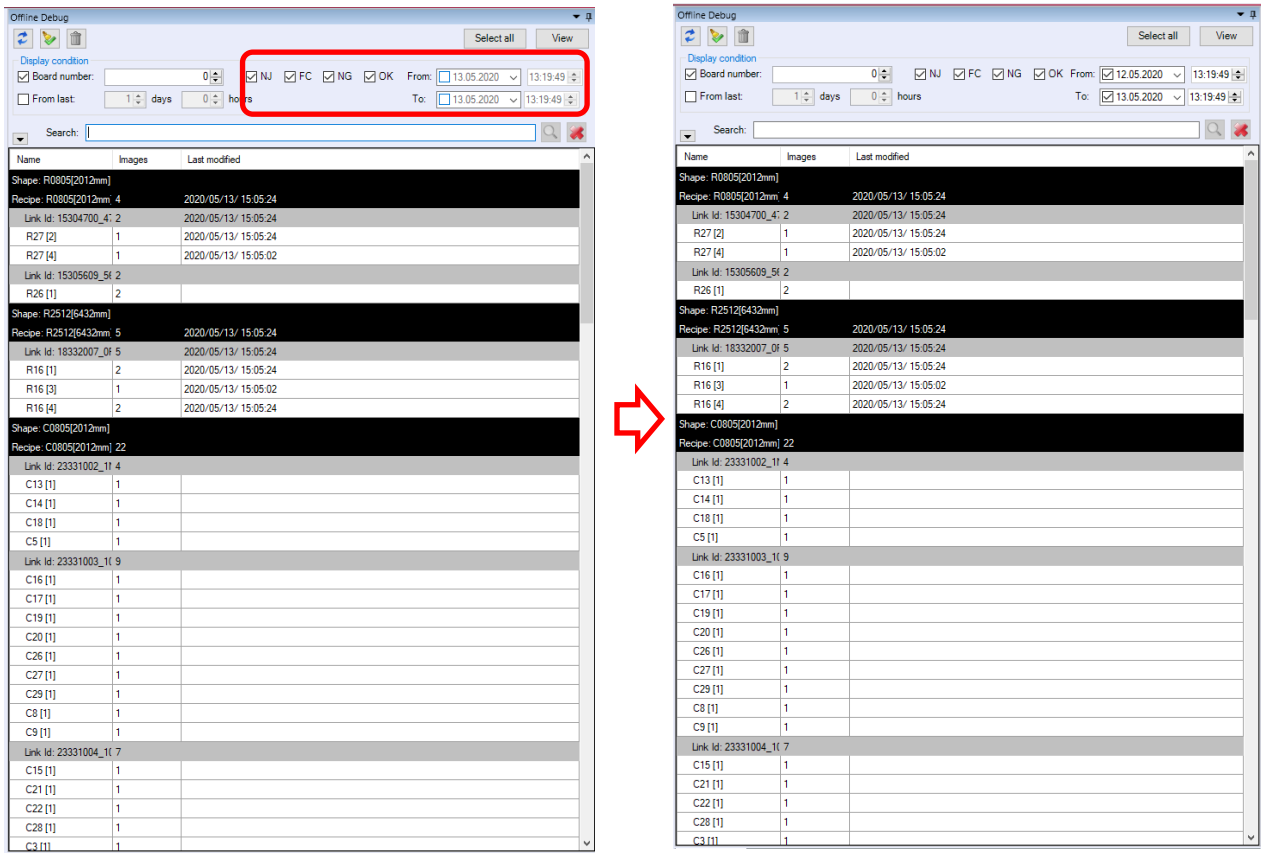


Figure 4 Offline Debug data filtering by date and time.

From	Specify the starting date and time of the data to be selected (if unchecked, no starting time data will be applied; the components will be displayed from the start of the Offline Debug Data acquisition).
To	Specify the finishing date and time of the data to be selected (if unchecked, no finishing time data filter will be applied; all components will be displayed until the current date and time).
OK, NG, FC, NJ	Specify if Offline Debug window hows records with respective status flag.

8. BF2-Monitor Feedback loop to Offline Debug Records

BF2-Monitor can be set in order to update offline debug reports by operator judgment. Offlie debug daa can be sorted by BF2-Monitor feedback in order to reflect operator's decision and help sorting of offline bebug data and program debugging.

Feedback to offline debug data is activated in BF2-Monitor Options ¥ Esport data section.

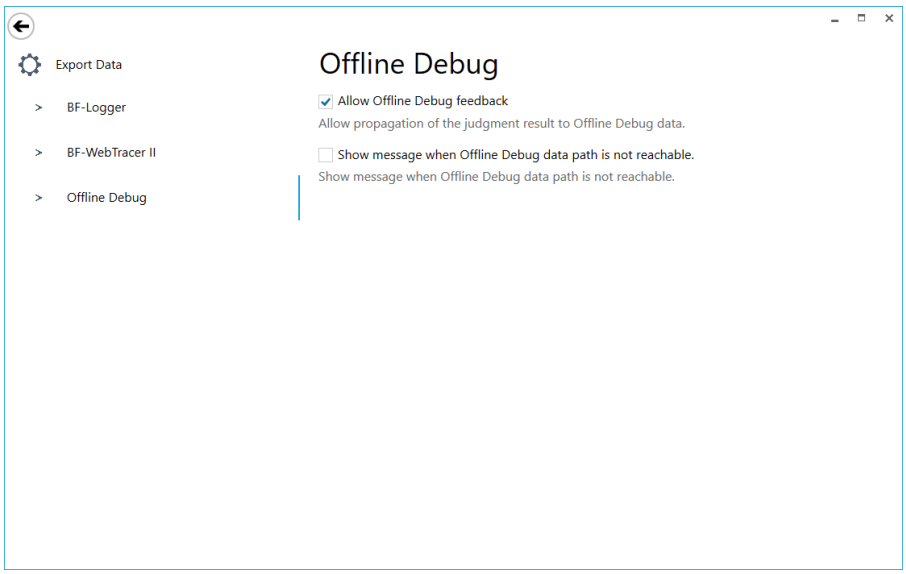


Figure 5 BF2 Monitor options

For admin section General¥BF2Monitor -> Offline Debug of admin settings

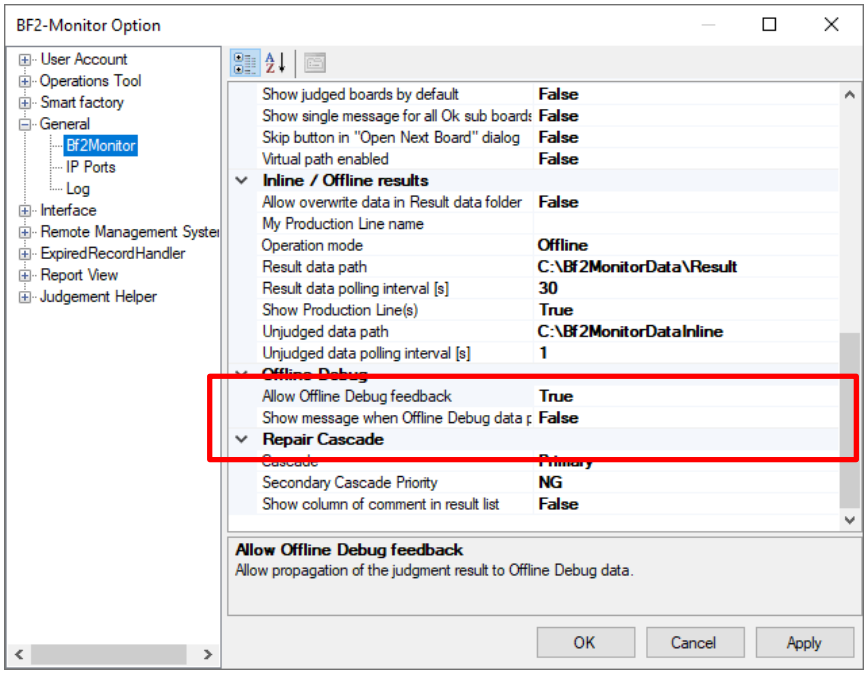


Figure 6 BF2-monitor options (admin mode)

Allow Offline Debug feedback	Set True/False in order to activate or deactivate the feedback operation
Show message when offline debug data path is not reachable	In case BF2-Monitor monitor cannot reach offline debug data after judgment in order to update the result flag, pop-um message informing the operator is shown.

Note:
The data location of offlie debug records are delivered to BF2-Monitor automatically with the result data. In order to realize the feedback, setting of offline debug data in BF2 options of the machine needs to be done via shared network path and destination must be shared and reachable for BF2-Monitor.

Example:
Offline debug data repository is placed on “C:¥BF2OfflineDebugData” folder of computer Name “N618441”

Folder “BF2OfflineDebugData” is shared over the network for BF2-Monitor PC with Read/Write access priviledge.

Setting of offline debug data repository on the respective machine should be “¥¥N618441¥BF2OfflineDebugData” in order for BF2-Monitor to receive automatically path of data destination and be able to modifi offlie debug record judgment status.

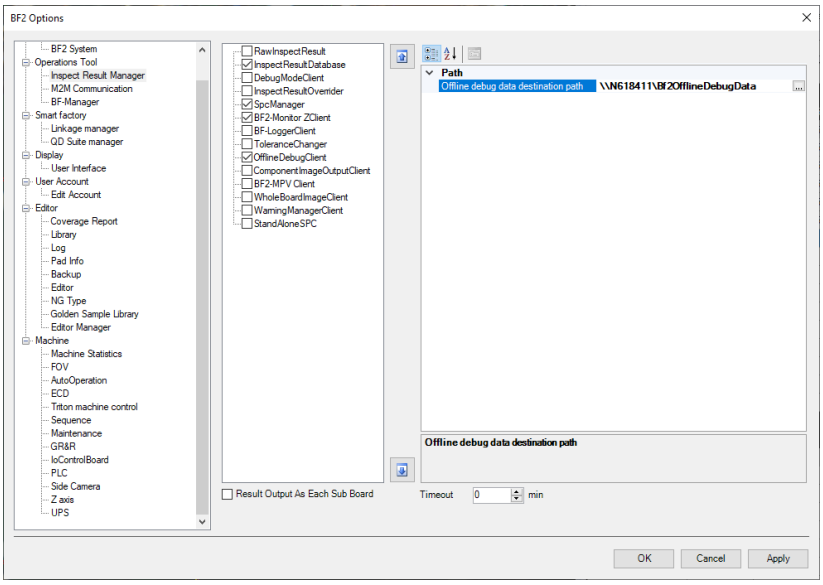


Figure 7 BF2-Option (admin mode) - Offline Debug Setting

9. Self tunning – Implementation of Offline Debug data

Offline debug data added to *Self Tuning* tab.

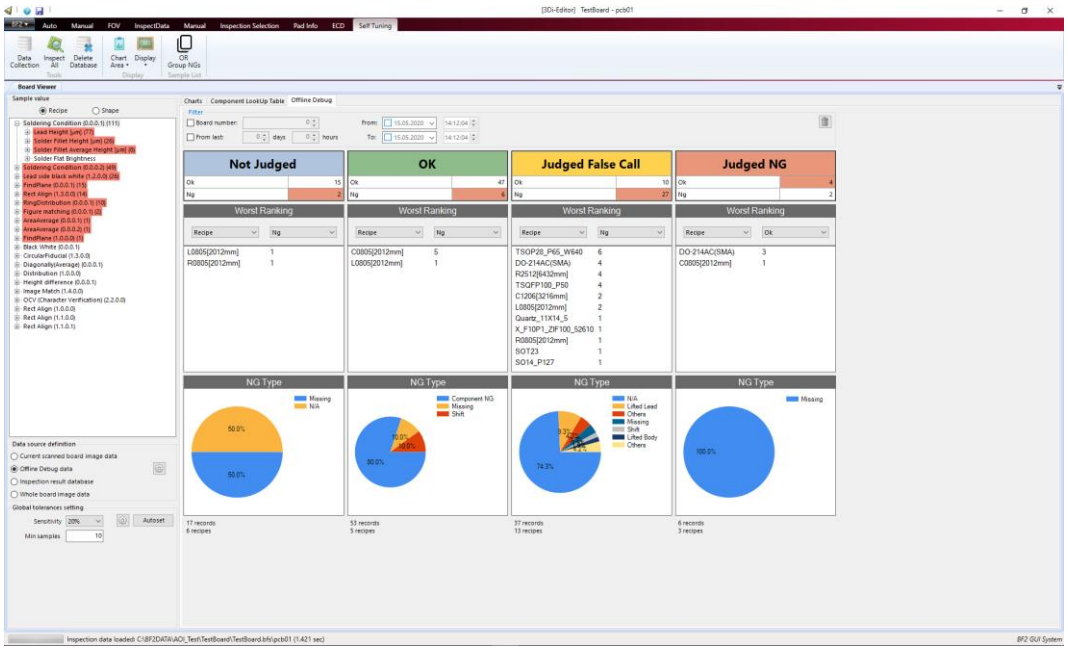


Figure 8 Offline Debug Data display in the Self Tuning tab

To display the *Offline Debug Data* on the *Self Tuning* tab, it is necessary to select *Offline Debug Data* option. The user needs to set which components should be used, if NJ, OK, FC and/ or NG data. Afterwards, click on *Inspect All* to view the data provenient from the *Offline Debug Data*.

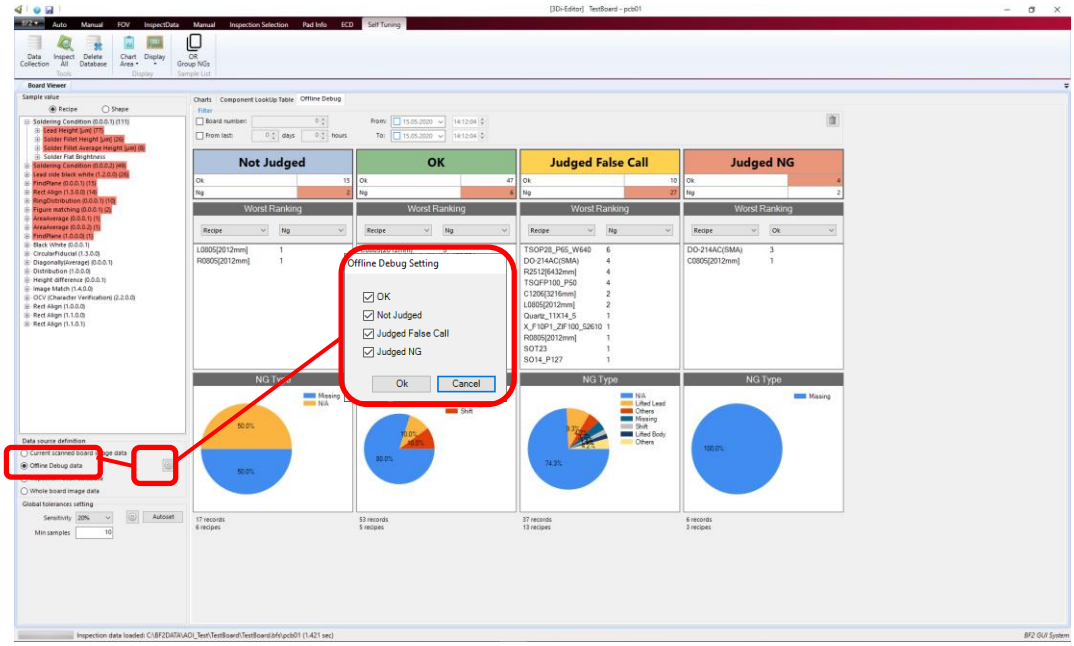


Figure 9 Offline Debug Data setup

Not Judged	Records with no judgement set by the operator
OK	Records seen by the machine as OK, or judgment set as OK by the operator through the recipe editor interface
Judged False Call	Records with judgement set as false call by the operator, either through real time judgement or through the recipe editor interface
Judged NG	Records with judgement set as NG by the operator, either through real time judgement or through the recipe editor interface

The worst ranking displays the recipes with most OK or NG results, according to the operator's selection.

The pie chart displays the percentage of NG types responsible for the NG components.

The *Offline Debug Data* used for the *Self Tuning* can be filtered based on the number of boards starting from the last board; the number of days and hours relative to the current date and time; or by setting a time interval.

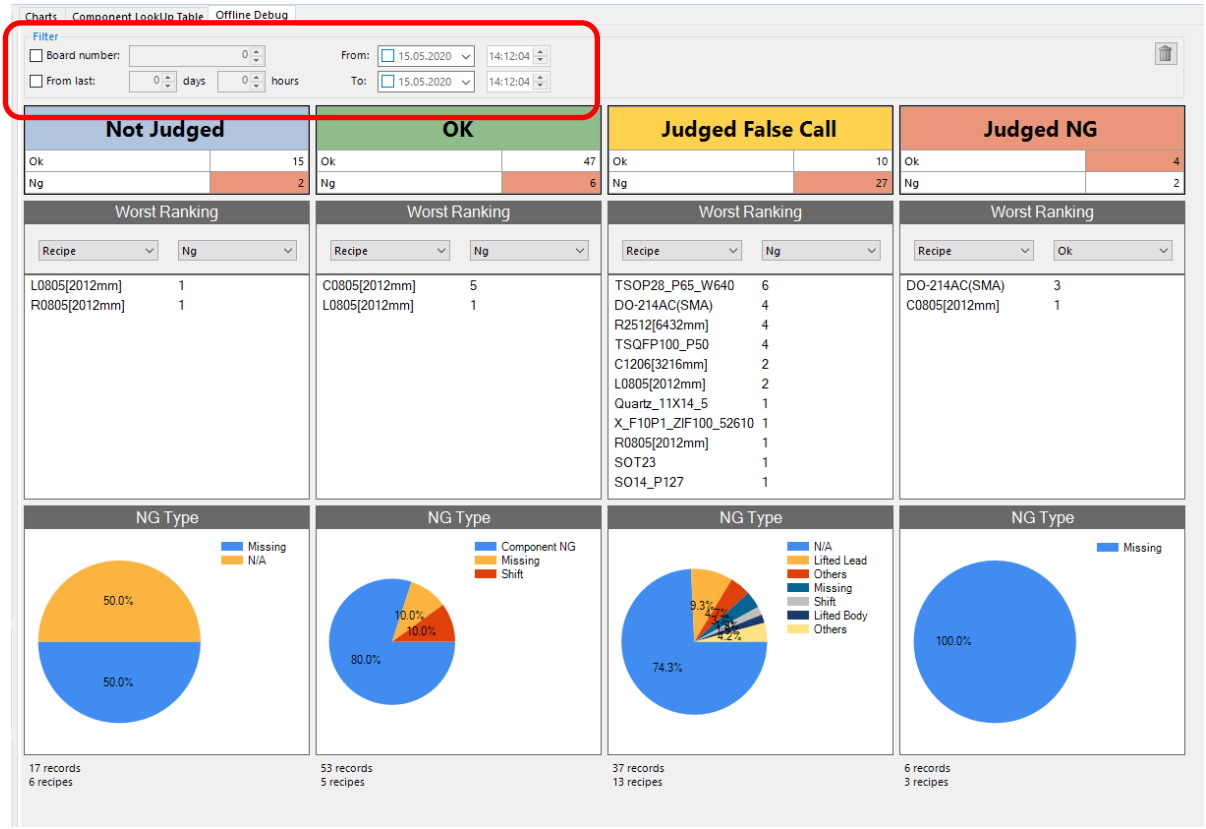
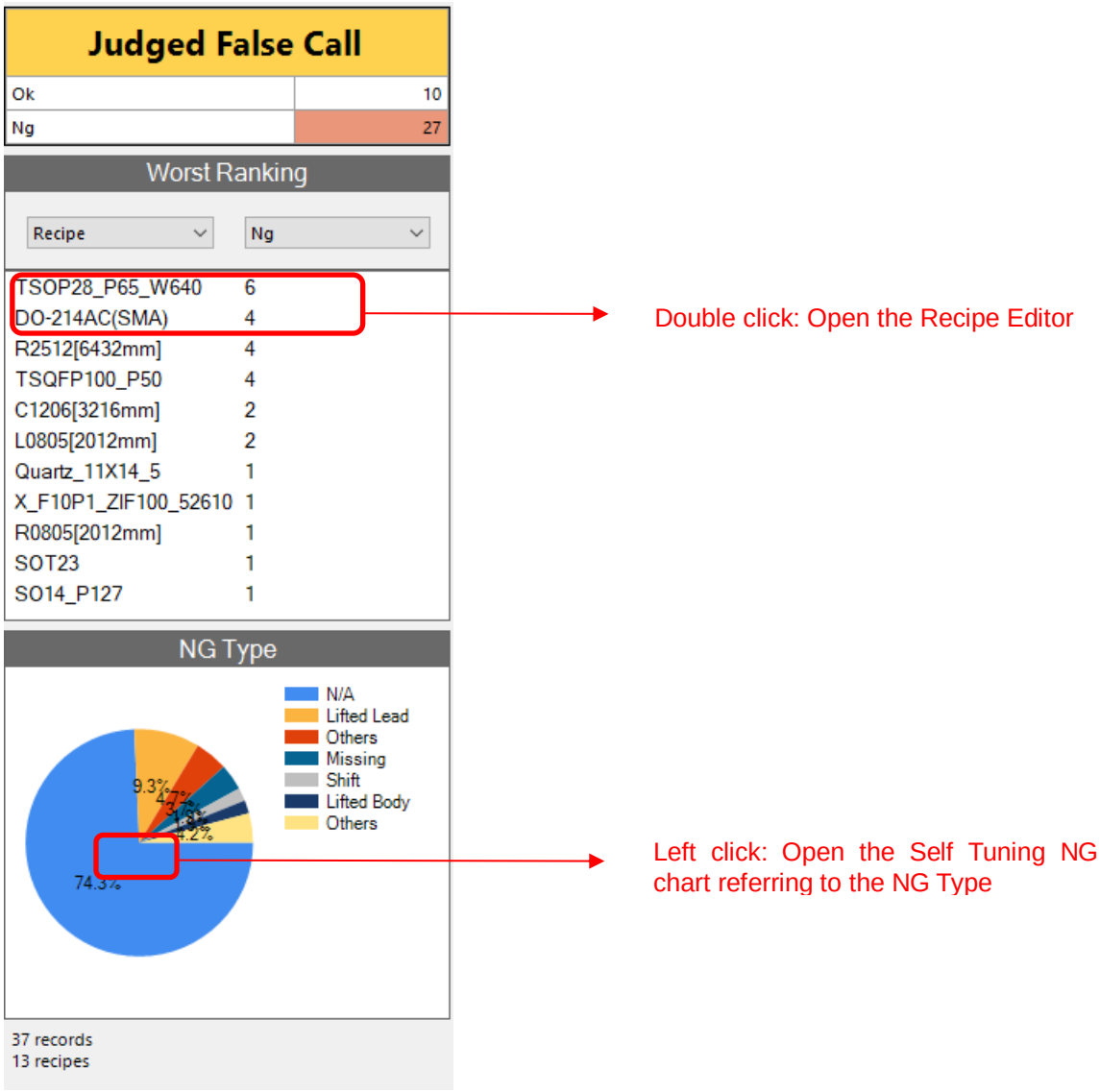


Figure 10 Offline Debug Data filtering

By double clicking on one recipe from the recipe list, the recipe editor for selected recipe will be opened.
By single clicking the target slice of the pie chart, the self tunning chart for the selected NG type will be opened.



The background colors of the *Ok* and *Ng* cells will change accordingly to their position:

- In the *Ok* column, the cells will turn green when the number of OK components is equal to the number of registered components, and red otherwise;
- In the *Judged False Call* column, the cells will turn green when the number of OK components is equal to the number of registered components, and red otherwise;
- In the *Judged Ng* column, the cells will turn green when the number of NG components is equal to the number of registered components, and red otherwise.
- In the *Not Judged* column, the cells will remain red while the number of registered components is bigger than zero.

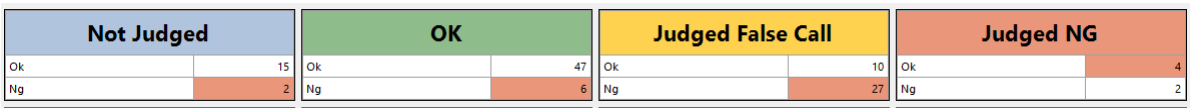


Figure 11 Result header with colors

10. Revision History

Revision	Date	Description	Written by
01	2020/Apr/20	First edition	A. Corte
02	2020/Apr/20	Formal Review	B. Benda
03	2020/May/15	Updated after modifications	M. Kostadinov