

ATS inspect[®]

Visual Quality

Attribute Data Collection : Article 3

Tracking Defects in Toyota and Other Success Stories

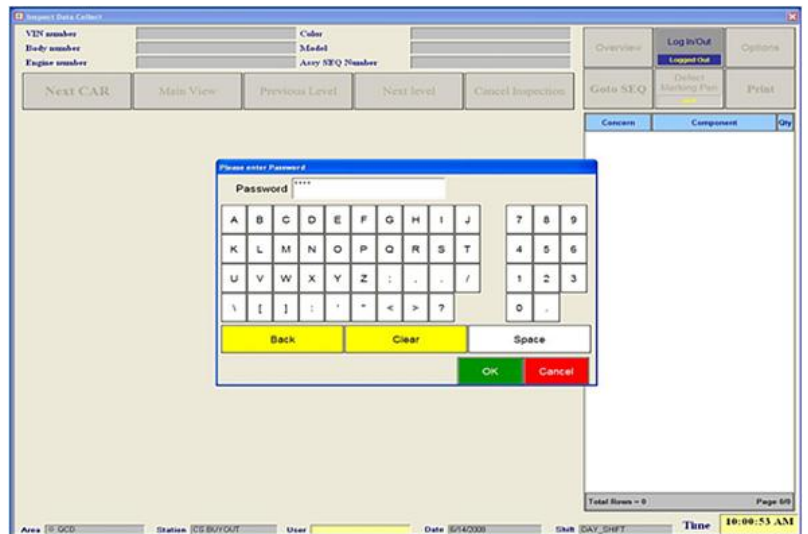


Recording Defects – An Example from Toyota

Anywhere that quality inspectors need to visually examine and track defects Inspect becomes the right choice ...

I. Login

The inspector logs in to the system with his/her personal credentials.



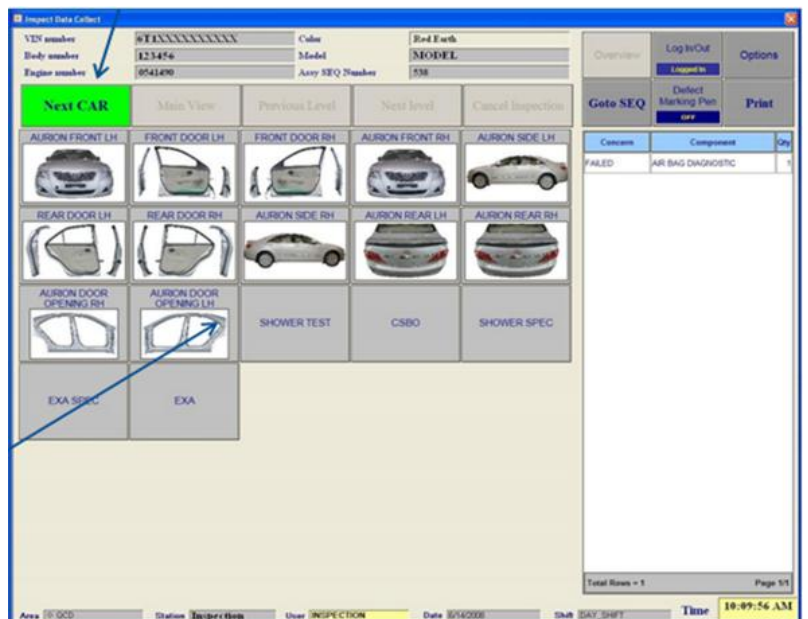
II. Main View

On Login the last unit inspected at this station will be automatically displayed.

Next inspection can be selected by clicking on "Next Car" or "Go to SEQ" buttons.

VIN or Sequence Number can be scanned or typed in manually with a touch pen.

Select a view by clicking on it. The image will be displayed in full-pan view.



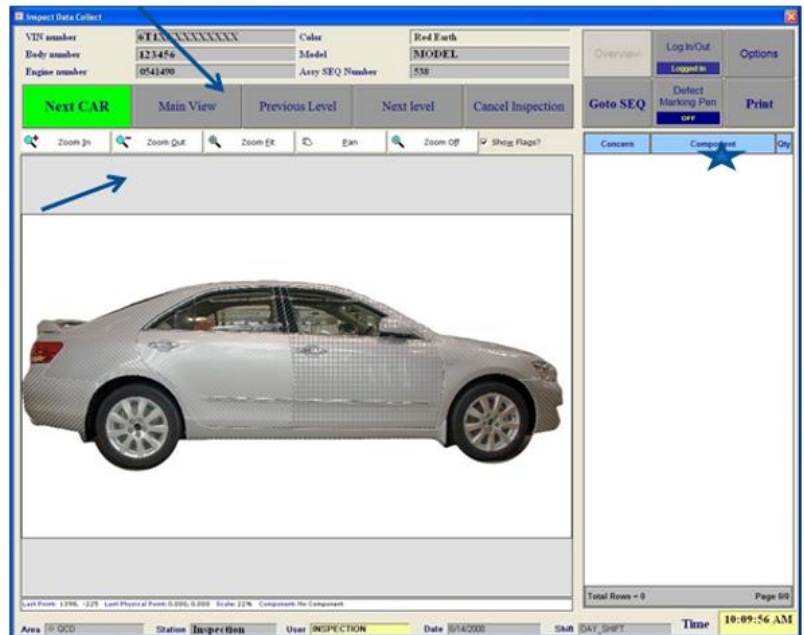
III. Selected View

Navigation controls on top will help to switch to other views or part categories.

Zoom functions are in place to dig down to exact location of defect.

Clicking on exact location will activate Defect Entry dialog box.

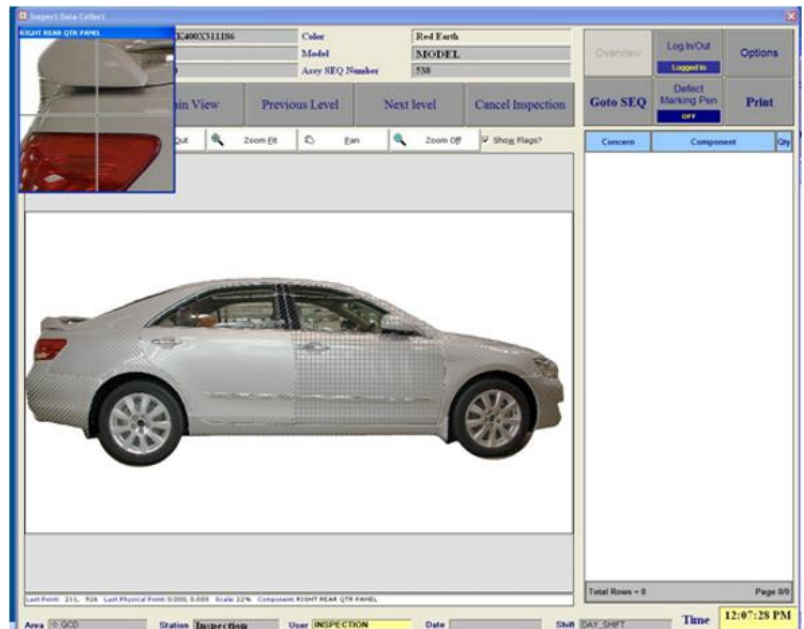
Defect location can also be marked using Defect Marking Pen



IV. Detailed View

Click & hold will activate magnifier on the screen.

It helps to select the exact location of defect (e.g. scratch).



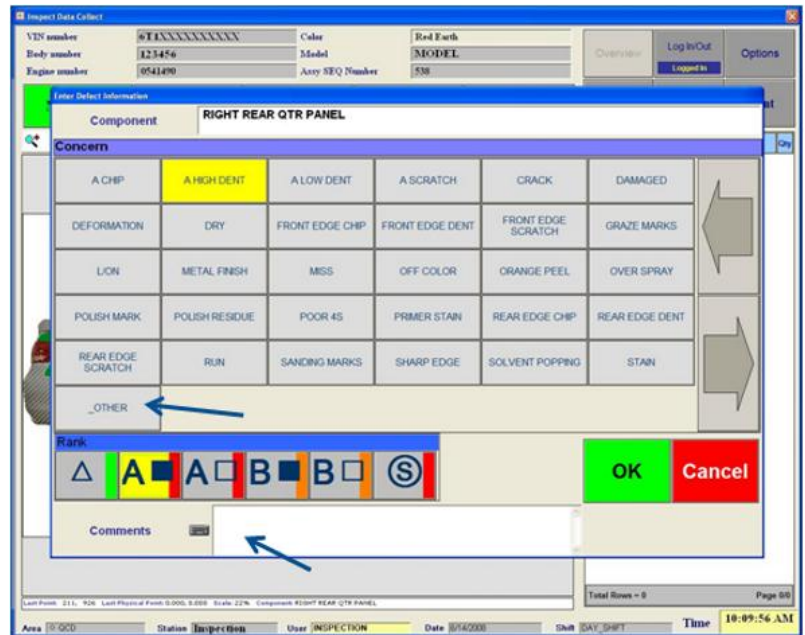
V. Defect Entry

It is always a good idea to have a quick look at component field to confirm listed part/location.

Select the type of defect with a click.

Select rank depending on severity of the defect.

If the defect is not standard or not listed it is always possible to select OTHER and type in the comment.

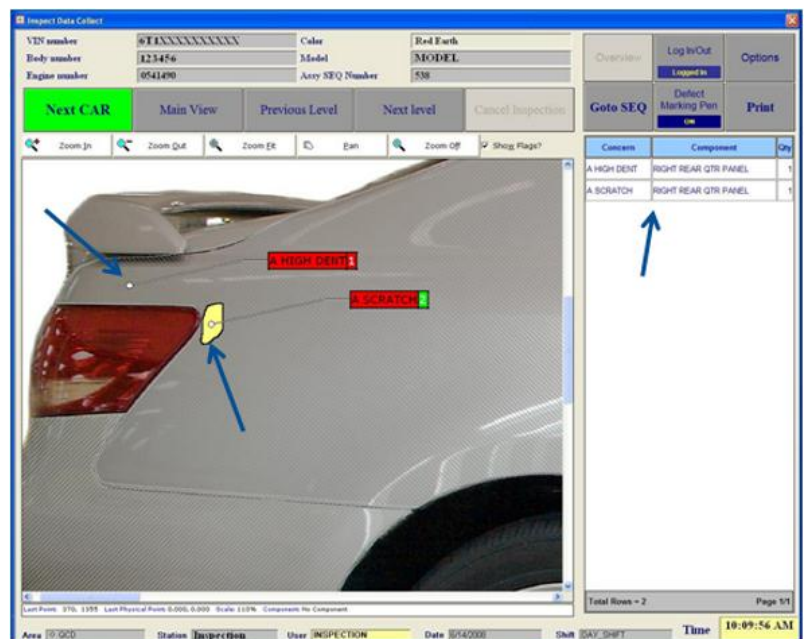


VI. Defect Flags

Defect flags are visible with all defects entered.

On the picture we see two different defects. The one on the left has been entered by clicking on the location, while the other one by marking the location with a marking pen.

Station Defect Sheet is updated on every defect entry. It can also be setup to display historical data.



VII. Defect Overview

All defects for that particular unit are listed in the Overview section.

Overview sheet displays all details of each defect.

#	Status	Component	Concern	Record User	Record Station	Date/Time	Shift
1	Not Repaired	RIGHT REAR QTR PANEL	A HIGH DENT	INSPECTION	CS BUYOUT	6/14/2008 12:19:19 PM	DAY_SHIFT
2	Not Repaired	RIGHT REAR QTR PANEL	A SCRATCH	INSPECTION	CS BUYOUT	6/14/2008 12:36:08 PM	AFTERNOON_SHIFT
3	Not Repaired	REAR RIGHT DOOR TRIM	DAMAGED	INSPECTION	CS BUYOUT	6/14/2008 1:47:58 PM	AFTERNOON_SHIFT
4	Not Repaired	REAR RIGHT INNER DOOR FRAME	CRACK	INSPECTION	CS BUYOUT	6/14/2008 1:48:16 PM	AFTERNOON_SHIFT

VIII. Defect Details

Individual defects along with comments are displayed in "Defect Details".

Part	DOOR TRIM	Location	REAR RIGHT
Concern	DAMAGED	Comments	CHANGE TRIM
Detail		Rank	B ■ FUNCTION
Image View	REAR DOOR RH	Recording Station	CS BUYOUT
Recording Area	QCD	Recording Date/Time	6/14/2008 2:08:05 PM
Recording Shift	AFTERNOON_SHIFT	Recording User	INSPECTION
Responsible Area	QCD	Responsible Zone	CHASSIS 1
Assembly Area		Assembly Cell	

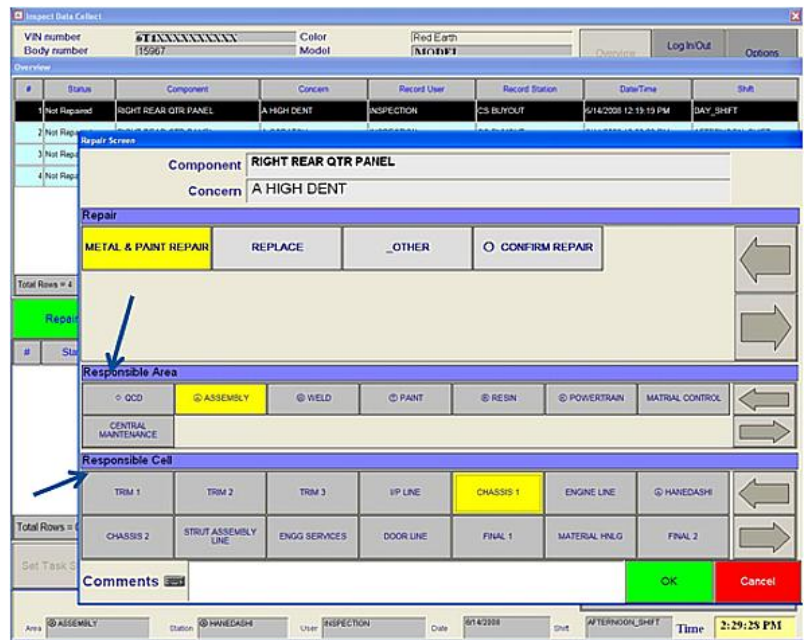
IX. Repair Entry

Selecting individual defect and clicking on “Repair” opens the repair dialog box.

Repair type can be assigned in one- or multi- step process.

In the repair stage it is possible to assign the responsible area & cell.

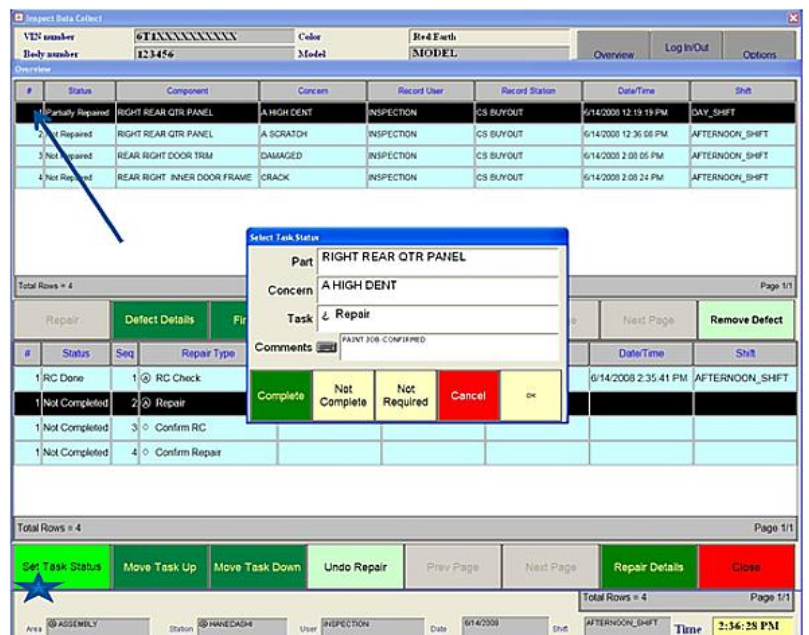
Great tool to provide feedback to assembly shop!



X. Multistep Repair Entry

Individual repair step can be completed through “Set Task Status”.

Until all repair steps are completed defect status will remain “Partially Repaired”.



XI. Overview after Repair Confirmed

Overview displays all repair details awaiting action.

User rights can be set up in Administration to display “Remove Defect” and “Undo Repair” buttons.

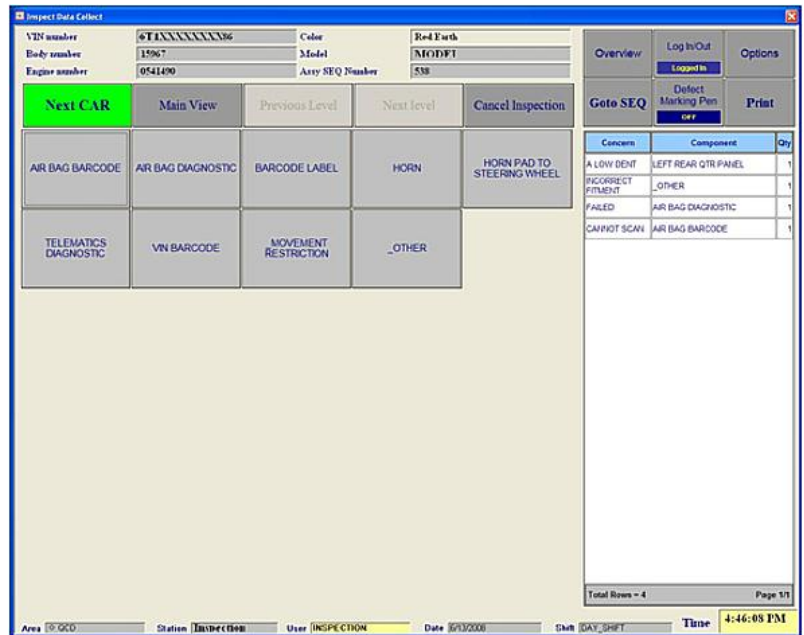
XII. Repair Details

You can view repair details along with repair comments after clicking on “Repair Details” button on the overview sheet.

XII. Button Based Inspection

Where it is not practical or not possible to create a photo or CAD view Inspect allows button based inspection.

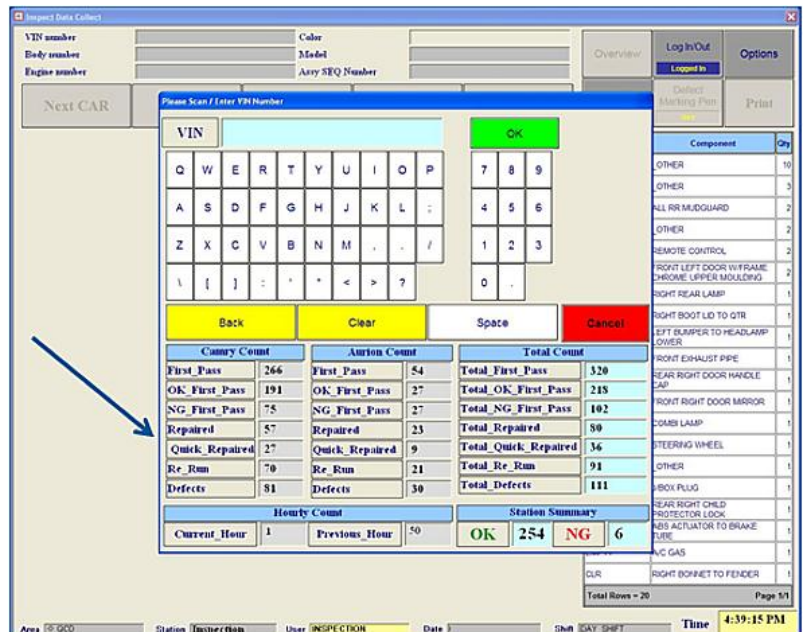
The parts and locations are defined separately.



XIII. New Inspection

To move on to the next inspected item click on “Next Car” on main view page (don’t forget this is an example from Toyota).

The “Next Car” dialog also displays all kinds of the station’s counts. It is a custom built function which is updated on every scan event.



As you can see from the example from Toyota’s car manufacturing plant it is really easy to use this system and is enjoyed by the inspectors. The fact that data becomes available in real-time and responsible personnel can take immediate actions is just one of the factors that give you a great tool to save significant costs of scrap, rework and warranty claims.

Success Stories & User Opinions

Software Brings Certainty to Inspection Process

“Instead of intuitively knowing where problems are, we now have data. Now we know.”

One of North America's largest stamping plants uses ATS Inspect Software to track defects on automotive components, including full underbodies, car roofs, doors and side panels. More than 400 parts are produced at this plant alone. ATS Inspect has replaced paper concern sheets that were used to record defects and then filed away for future reference.

Now inspectors use a stylus to touch a line drawing of a part on a touch screen to indicate the area of the defect and the severity of the ranking. Defects are ranked on a scale of 0.1 to 1.0. If any defect is listed as a 0.5 or higher, the software immediately sends an e-mail to the appropriate managers.

Manufacturing representatives meet weekly to review color-coded concern reports ranking defects by severity. Data is compiled to determine where the problem areas are and what can be done to remedy them. These areas are then tracked to be sure that the improvements implemented are working.

“Instead of intuitively knowing where problems are, we now have data. Now we know,” says the plant's continuous improvement supervisor. “We used to say, ‘I think that this is probably what the problem is. Now we can say for certain.’”



Online Part Status Eliminates Incorrect Builds

An international heavy truck manufacturer needed to track customer-requested options to be installed on otherwise identical models of trucks. Because these options were tracked with paper route sheets, which could be easily lost or destroyed, assembly processes couldn't be determined and trucks awaiting optional parts had to be moved off-line to a staging area.

When parts arrived, assemblers had to walk from truck to truck in the staging area to match optional parts to truck chassis. In addition, inspection reports and warranty data were being documented by paper and pencil and keyed into separate databases for analysis and reporting.

ATS Inspect Software provided the solution. Because ATS Inspect uses a single database to generate reports from an internet browser, assemblers now can set the status for each part number online.

External systems can query the ATS Inspect database to determine the exact status of a particular vehicle, including missing parts, operations and rework times. Assemblers and quality managers can send e-mails and text messages to the material handling team for immediate action.



ATS Inspect's electronic checklists help to determine if a particular VIN was assembled correctly by providing a series of questions for the inspector. ATS Inspect compares these answers to the options for a particular vehicle and determines if the correct options were installed. The manufacturer has now experienced 18 consecutive months without a single incorrect build.

Visual Inspection Confirms Repair Status

"Inspect provides a major improvement in communication. There is no question about what needs to be done."

A large defense contractor is an active partner in the program to refurbish and return Bradley Fighting Vehicles to active service in the Middle East. The contractor is responsible for inspecting, repairing and certifying over 100 different wiring harnesses for each vehicle. Challenges in the program include:

- ▶ Eliminating communications breakdown on the factory floor
- ▶ Accounting for and reconciling reassigned parts
- ▶ Accurately identifying parts that need repair
- ▶ Tracking repair information

To meet these data-intensive challenges, the contractor selected ATS Inspect Software. "ATS Inspect provides a major improvement in communication," said the company's Quality Engineer. "There is no question about what needs to be done."



Incoming harnesses are scanned and a visual record is created in the ATS Inspect system. The inspector uses this visual record to identify locations of needed repairs. The red markup flags on the visual record indicate the repair needed at a specific location.

Totes of inspected harnesses are routed to the desired station, and each cable is pulled from its tote and scanned to display the visual record. The team member makes the needed repair and notes the completion of the repair with a green flag. ATS Inspect has proved to be a superior communication tool, not only to aid with recording the incoming and final inspection, but also to allow repair personnel to confirm a specific repair is complete while using a simple visual graphic to communicate this information.

Industries and Companies Using Inspect

Car & Light Truck OEMs

Ford, GM, Toyota, AM General, Mitsubishi

Heavy Truck OEMs

International Truck & Engine, Kenworth, Mack (Volvo)

Tier 1 Automotive Suppliers

Thyssenkrupp Budd, Johnson Controls, Lear, Flex-N-Gate

Electronics, Military & Aerospace

Redcom Laboratories, Rolls Royce, DRS Laurel Technologies



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