Center of Failure Analysis System

Asia-Pacific Driveline

SD-2101

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REVISED

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1. SCOPE

The intent of this specification is to introduce the NEXTEER Asia-Pacific Driveline Standard Process Label Print System. Vendors are required to understand and follow this specification.

2. GENERAL

2.1 System Architecture

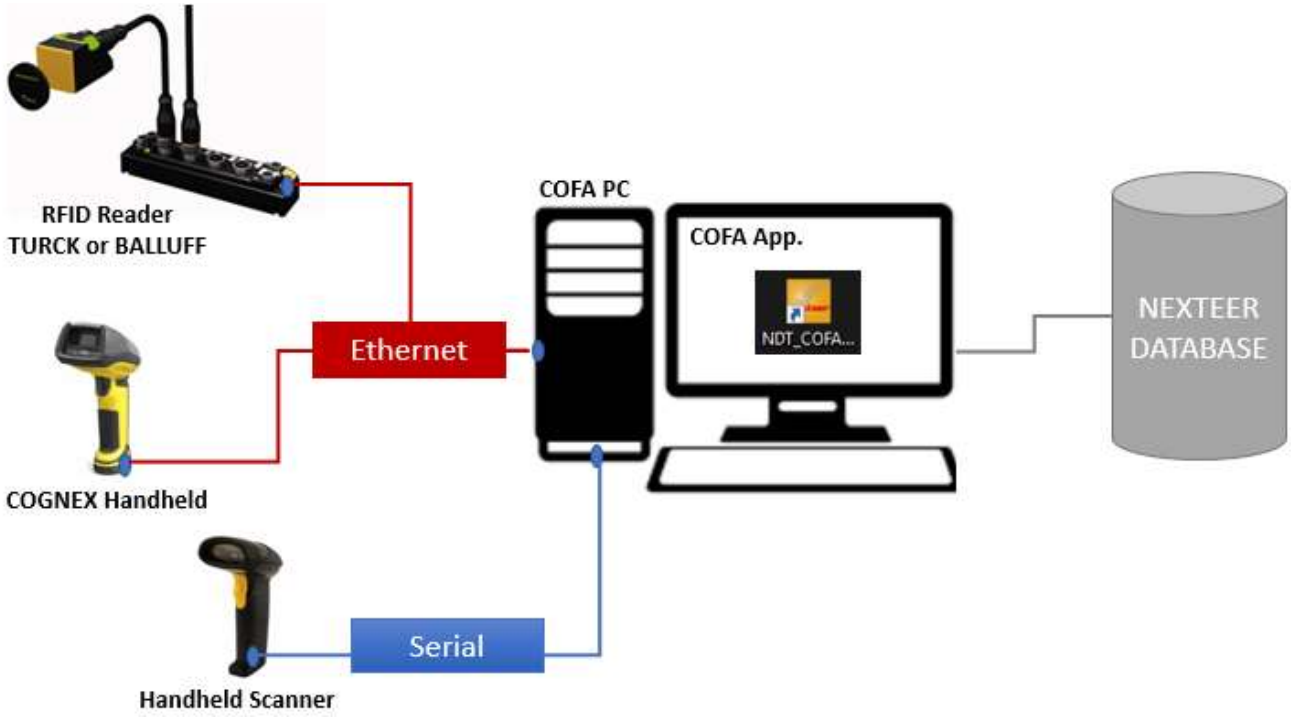

Figure 1: NEXTEER AP Driveline CoFA System Architecture

2.1.1 2 TCP Ports are available

1. The COFA Application supports TURCK, BALLUFF and COGNEX Protocol

2.1.2 2 Serial Ports are available

3. System Requirement

3.1 Hardware & Software

3.1.1 PC

1. Minimum 2 LAN Ports
   a. One LAN Port shall be dedicated for Nexteer Server.
   b. The other LAN Port shall be connected to the ethernet based RFID reader or label scanner.
   c. If additional ethernet based readers are required, additional LAN ports may be added.
2. 2 Serial Ports
   a. Connected to the serial-based label (or tag) scanner.

3.1.2 RFID Reader

1. BALLUFF U 6027 supporting BIS TCP/IP
2. TURCK TBEN supporting ProfiNet

3.1.3 Label Scanner

1. The scanners with Serial Communication Port
2. COGNEX Scanner supporting TCP/IP

4. NEXTEER CoFA Application (NDT_COFA)

4.1 INSTALLATION

4.1.1 Run the setup file

NDT_COFA_v01.07_setup.exe

4.1.2 Once the setup file is complete, a shortcut icon (below) will appear on the PC desktop:

4.2 OVERVIEW

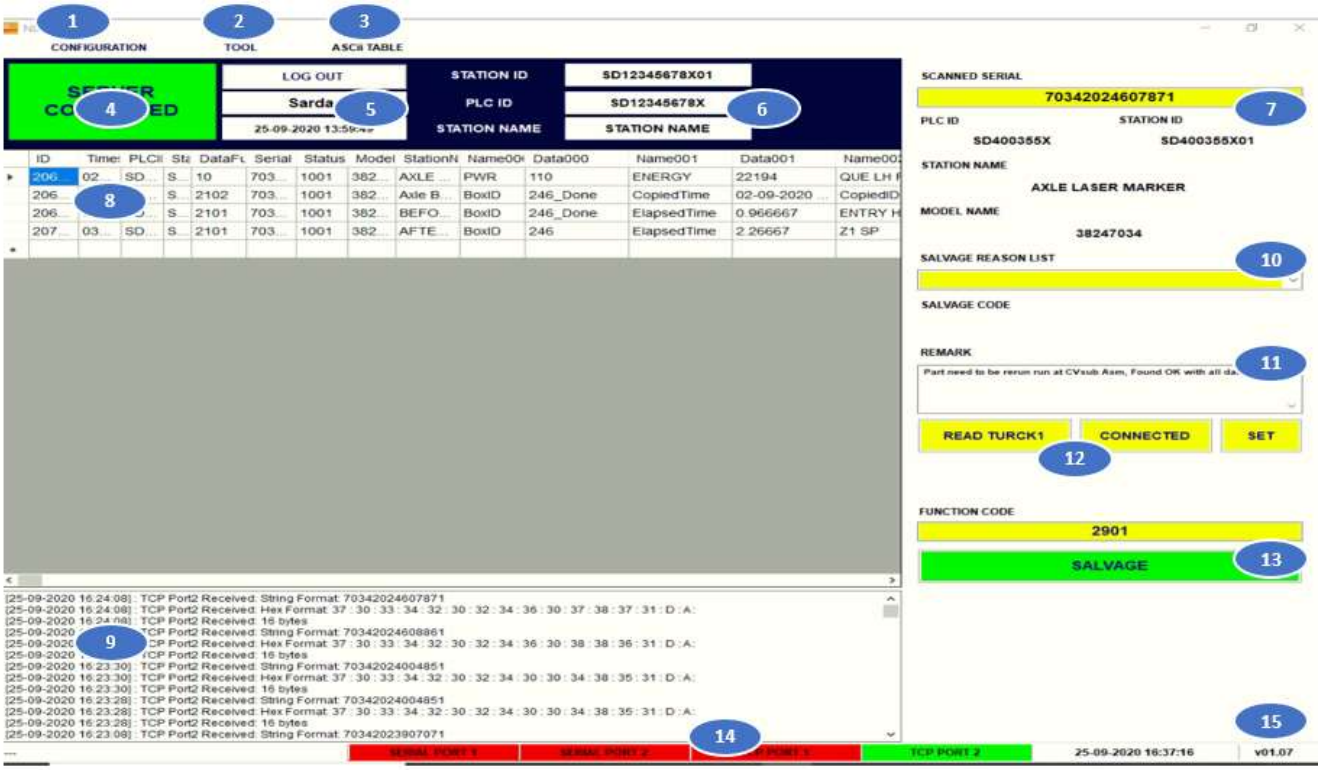

Figure 2: NDT_COFA App Overview

1. Configuration edit button / Default Password is “1”.
2. Tool button. There are several sub menus.
3. Ascii Table for reference
4. Connection status to the Server
5. Login
6. Station Information

7. Scanned serial
8. All status information of scanned serial
9. Application log
10. Selectable salvage reason list
11. Remark per selected salvage reason
12. Operating button for TURCK reader
13. Salvage button
14. Connection status to Label Scanner or RFID Reader
15. Application Revision

4.3 CONFIGURATION

4.3.1 GENERAL

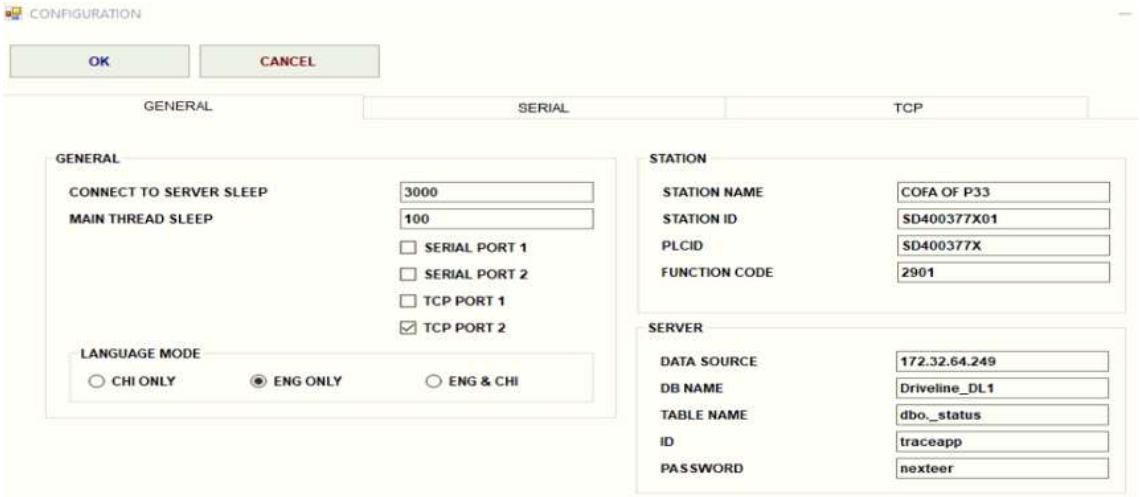

Figure 3: NDT_COFA Configuration-General

1. GENERAL
   a. CONNECT TO SERVER SLEEP: Time-limit to connect to the server (milliseconds).
   b. MAIN THREAD SLEEP: Main routine delay (milliseconds).
   c. SERIAL PORT 1 / SERIAL PORT 2 / TCP PORT 1 / TCP PORT 2: Enable each port.
   d. LANGUAGE MODE: English Only is available.
2. STATION
   a. STATION NAME: Cofa Station Name
   b. STATION ID: Cofa Station ID per standard format (ex. SD123456X01)
   c. PLC ID: Cofa PLC ID per standard format (ex. SD123456X). There is no PLC just to follow Traceability format.

d. FUNCTION CODE: Function Code. Default is 2901.

3. SERVER: Traceability Server information

4.3.2 SERIAL: Serial port settings

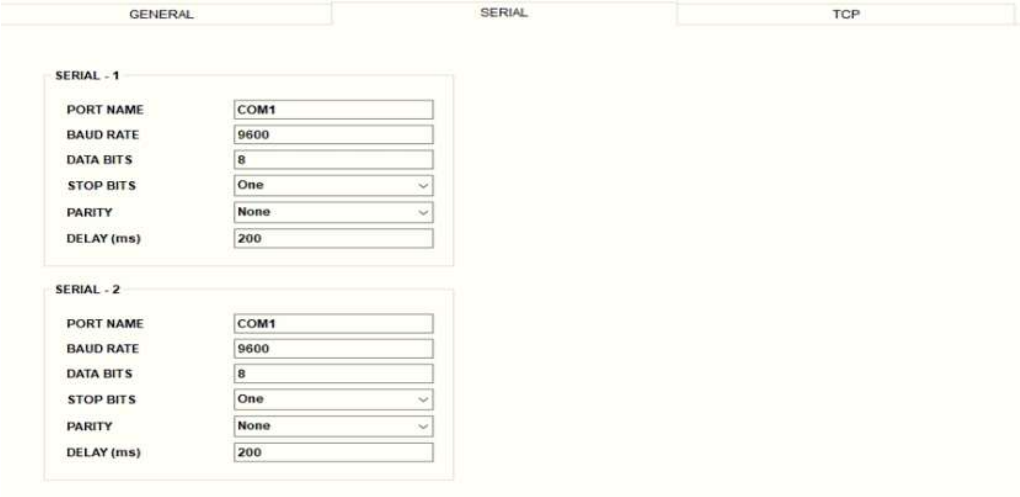

Figure 4: NDT_COFA Configuration-Serial

4.3.3 TCP

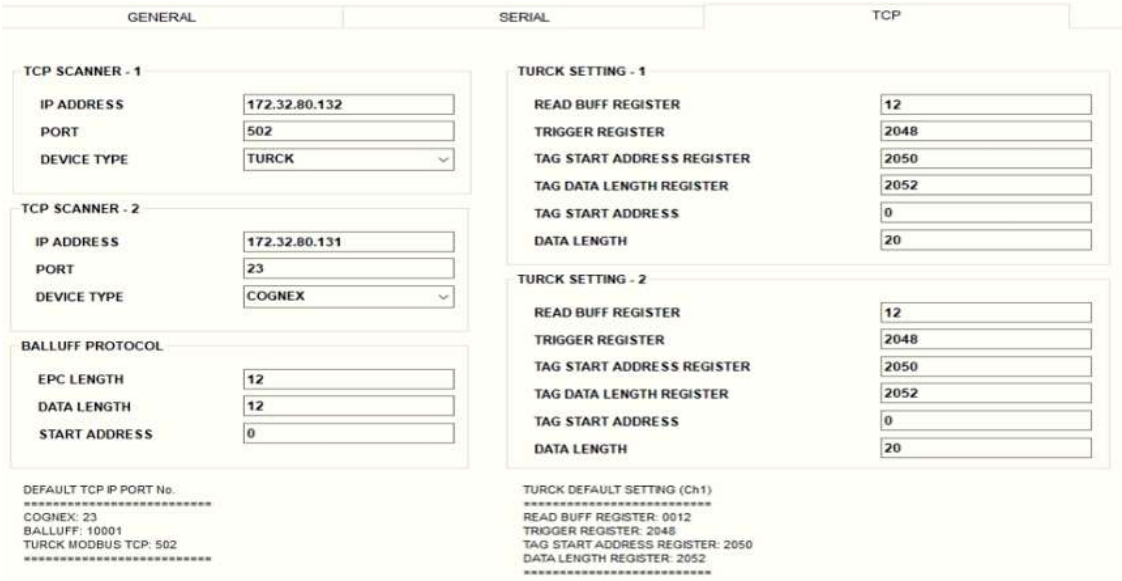

Figure 5: NDT_COFA Configuration-TCP

1. TCP SCANNER
   a. IP ADDRESS: IP address of the connected device
   b. PORT: Ethernet Port for communication. Default settings are, 23 for COGNEX, 10001 for BALLUFF and 502 for TURCK
   c. DEVICE TYPE: You can select one of COGNEX, TURCK or BALLUFF

d. BALLUFF PROTOCOL: It shall be matched with actual device setting.

e. TURCK SETTING: TURCK registers settings. Default is shown on the screen.

4.4 TOOL

4.4.1 SET PASSWORD: Set the password for each level. There are 5 levels. Level 5 is admin. An admin level password is required to change configurations.

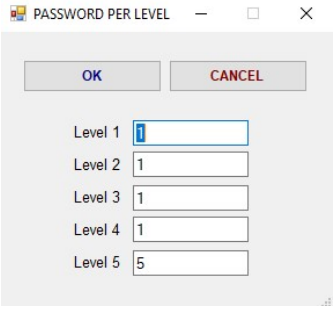

Figure 6: NDT_COFA Configuration-Set Password

4.4.2 LOG IN LIST: You can add operator ID with password.

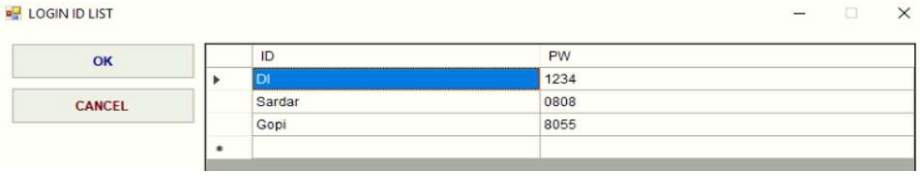

Figure 7: NDT_COFA Configuration-Login List

4.4.3 MESSAGE LIST: Reserved for future update.

4.4.4 SALVAGE CODE LIST: The salvage code list can be edited; insert and delete salvage codes with a right mouse click. Creating a proper list here is required so aa proper selected station ID can be salvaged on the main screen. The code shall be approved by the Plant Manager. Without proper approval, salvaging is not allowed.

SALVAGE LIST

OK
CANCEL

OPID	REASON	SALVAGE CODE	REMARK
SD400350X02	TEST1	9001	T1
SD400350X02	bOOT DAMAGE	9002	T2
SD400352X01	TRACE TRIALS	9003	
SD400354X01	Salvaged	9004	
SD400354X01	BIG CLAMP ISSUE	9006	BIG CLAMP ISSUE
SD400329X02	Laser Marking grade fail(but ok to scan the part)	9007	OK PART TO ASM
SD400350X02	PART TO BE REJECTED ,NOT TO BE USED	9008	SCRAP
SD400350X02	Trial part for load position setting	9009	max load position low
SD400352X01	Trial Part for Parameter Setting.	9010	Max Load High (Load high by 0.3) Ok for acceptance
SD400354X01	Trace error part	9001	no issue in part communication issue move to SD400354X01
SD123456X01	power failure	9011	cv pressing is complet and power failure part found ok and sent to crimping station
SD400351x02	CV reused part	9012	Tear down part, OK to run again online
SD400329X02	CV Sub Asm Salavge	9013	Part need to be rerun run at CVsub Asm, Found OK with all data
SD400329X02	LVDT reject, so need to re run at TP Press after removing grease and deflector ring	9014	LVDT reject, so need to re run at TP Press after removing grease and deflector ring
SD400354X02	Final Asm part ok	9015	verify found all data ok
SD400329X02	Tempering Elapsed Time	9016	Verified and found ok
SD400354X01	Tracce issue data not feed to system	9017	Verified and found ok
SD400328X01	Marking grade fail(but ok to scan the part)	9018	Verified and found ok
SD400353X01	Retainer Ring LVDT	9019	OK to run at Crimping Station
SD400356X01	TP Camera Grade Fail	9020	OK TP to run at Induction Hardening
SD400355X01	Laser Marking grade fail(but ok to scan the part	9021	ok part for tempering
SD400329X02	Metallugical parameters meeting specs- 11.07.2020	9022	As per Metallurgist, all metallurgical parameters are within specs- 11.07.2020
SD400329X02	Part rejected due to LVDT- OK to run at TP Press	9023	Part rejected due to LVDT- OK to run at TP Press- As per ME
SD400329X02	Tempering out elapsed time NOK but parts are meetinh hardness specification(58 HRC min)	9024	Tempering out elapsed time NOK but parts are within hardness specification(58 HRC min)
SD400329X02	TP Trace repeat issue	9025	ok to run tp sub asm
SD400329X02	Metallugical parameters meeting specs	9026	VERIFY BY ASHOK ANG GURU SIR WHILE RUNNING THT TEMPERING THE POWER OF PART.
SD400329X02	Tempering Out elapse time rejected part.Surface Hardness meeting specification.	9027	Surface Hardness verified and Meeting the specification -Actual Hardness -59.80 HRc as per met lab report.
SD400329X02	Before Tempering time elapse, but as per requirement with in 4 hrs	9028	Before Tempering elapse time and observed with in 4 hrs as per std. requirement, parts cleared as per CFT confir...
SD400329X02	CV Sub assly Salvage	9029	CV sub assly Trace issue at CV pressing, need to remove the inner race, cage, ball and clean the grease, after c...
SD400329X02	Missed to scan after tempering	9030	Parts missed to scan after tempering, it's ensured as per tempering RTM data, as per Met lab confirmation parts a...

Figure 8: NDT_COFA Configuration-Salvage Code List

5. HOW TO OPERATE

5.1.1 Login

Figure 9: How to operate-Login

5.1.2 Load Part and Scan the tag or label

Figure 10: How to operate-Scan Tag or Label

5.1.3 Select the row to be salvaged and it updates the "SALVAGE REASON LIST", and you can select a proper salvage reason in the list.

Figure 11: How to operate-Select Savage Reason

5.1.4 Right-click below the "SALVAGE" button and review the updated status code.

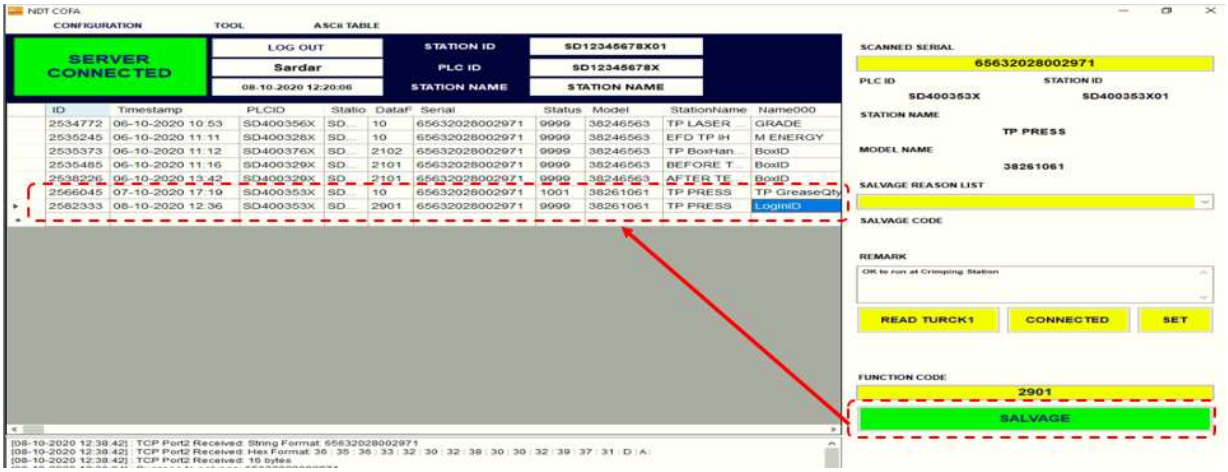

Figure 12: How to operate-Salvage

6. Deliverables

6.1 Center of Failure Analysis App: NDT_COFA_vxx.xx.exe

RECORD OF REVISIONS

Revision No	Date	Section	Description
001	10DE20	ALL	Initial release.
002			
003			
004			
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