SOLUTIONS ENGINEERING SN-2 CHECKLIST
(Functional Specification Review)

ENDUSER	:	INPEX Operations Australia Pty Ltd
CUSTOMER	:	Yokogawa Engineering Asia Pte Ltd
CONSULTANT	:	
PROJECT NAME	:	ICHTHYS GAS DEVT FIELD (CPF) APS
PROJECT NUMBER	:	V1412A008
DOCUMENT TITLE	:	**SN-2 CHECKLIST**

SN-2 Meeting Details		Rev A	Rev B	Rev C	Rev D
Date	:	13-May-13			
Duration (hrs)	:	20min			

Name of Participant	:	**Name & Signature of Participant**			
Sales Manager (optional)	:				
Sales Engineer (optional)	:				
Project Manager KHLEE	:		Lee Kock Hin		
Lead Solution Engineer PAUL / Utama RAP	:				
Specialist Engineer	:				
Solutions Engineer	:				
QA Manager/Representative	:	Yuliya B.			
Other (if applicable)	:				

Number of Outstanding Items	:	0			
Planned date for next SN-2 check (in case of any followup check items)					
Planned date for SN-4 check	:	10-Sep-13			

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History				
Rev.	**Date**	**Description of Changes**	**Originator**	**Approver**
0	1-Nov-11	Initial	Jeffrey Foo	Wong YC
1	1-Nov-11	Convert from .doc to .xls format	Jeffrey Foo	Wong YC
2	11-Jun-12	Minor formatting changes	Yuliya Bobrovska	Lee Kock Hin
3	20-Sep-12	Minor formatting changes	Yuliya Bobrovska	Lee Kock Hin
4	30-Jan-13	Added QA Manager/Rep in Description, paragraph B.	Yuliya Bobrovska	Lee Kock Hin

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A Objective and usage

This checklist reviews the completed system functional specification for the project.

The check items in this checklist provide general guidance for system design and project execution. The questions associated with each check item are intended to guide the user toward details that may be applicable for this project. Specialist Engineer shall report the evaluation of each check item, comments pertaining to this (if any), and follow-up action (if any). The completed check sheet is a certificate by the Specialist Engineer indicating that the recommended checks on the project at this milestone have been carried out. It also serves as useful historical information in the event of change or addition of project staff.

This check sheet is completed and filed electronically in the project control folder of the project directory. Users are encouraged to add pertinent check items that were considered and discussed at this check. These additional items may become the basis for improvement of the basic checklist.

B Meeting initiation and attendance

Project Manager shall schedule and initiate the SN2 check. Other participants may be invited as necessary.
Required attendees for SN2 check are:
- Specialist Engineer
- Lead Solutions Engineer(s)

QA Manager/Representative

C Evaluation criteria

Each check item should result in one of the following evaluation results. Comments that shed light on the background of the check item are encouraged.

Evaluation results are:
- Satisfactory (OK) – The check item is satisfactory. Add comment if any.
- Not satisfactory (NG) – The check item is not satisfactory. Follow up action is required. Follow up actions shall include what needs to be done, who is to do it, and when it must be completed. The Project Manager is ultimately responsible for the closure of follow up actions. Add comment if any.
- Not applicable (NA) – The check item is not applicable. Add comment if any.

D SN-2 pre-requisite documents

- Plant P & I D
- Process narratives
- Project Functional Specification

E Recommendation

This checklist should involve the Engineering Team, hence this checklist should be evaluated during the Project Engineering stage with PROJECT team.

Clearing of outstanding items: Within project engineering duration.

F Name of Participants

The name of the participants shall be used in place of the function name in the cover page.
After the review is completed, all participants shall sign in the box next to their name under the respective revision.

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S/NO	CHECK ITEMS	REMARKS	EVALUATION
1.0	**System Configuration and Hardware**		
1.0.1	Has the system configuration been determined?		**Satisfactory**
1.0.2	Has the network configuration been determined? • IP addresses • Workstation / Server /Data Storage capacity • Network switches • Firewall		**Satisfactory**
2.0	**Customer Requirement Specifications**		
2.0.1	Have all the requirement specifications been given?	RTDB graphics & report provided in several phases.	**Satisfactory**
2.0.2	Are there any items pending?	Tag list to be provided after DCS database generation	**Satisfactory**
2.0.3	Is there any item, which seems to be an over-specification (too difficult to implement)?	NA	**Satisfactory**
2.0.4	Are there any discrepancies from the specifications that were quoted?	TCN raised and clarified	**Satisfactory**
3.0	**System Basic Design Specifications**		
3.1	**System Specifications**		
3.1.1	Is the system configuration described clearly?		**Satisfactory**
3.2	**Function Segregation**		
3.2.1	Is the relationship with other systems and windows and the scope of the functions described clearly? • Communication specifications • IP address for Ethernet • Separate OPC for communication (each package solution)		**Satisfactory**
3.3	**Solutions System Concept**		
3.3.1	Is the solutions system concept for redundancy described clearly? • V-Net • Back-up system • Communication (OPC or Modbus TCP/IP) for other systems	Redundancy system not required	**Satisfactory**
3.3.2	Is the specification for behavior upon power failure clearly defined for each component/device?	Redundant PSU part of server is available	**Satisfactory**
3.3.3	Is there any consideration for the future expansion of this solutions	OTS virtualization	**Satisfactory**
3.4	**Scope**		
3.4.1	Is the definition in database clearly defined?		**Satisfactory**
3.4.2	Is the alarm philosophy, alarm priority & plant hierarchy clearly defined?		**Satisfactory**
3.4.3	Is the engineering and generation of report function, and number of formats		**Not Applicable**
3.4.4	Is the engineering and generation of graphics panel and hierarchy clearly defined?		**Not Applicable**
4.0	**Design Function Specifications**		
4.1	**General Considerations**		
4.1.1	Is the design functions described?		**Satisfactory**
4.1.2	Are the concepts of design functions described clearly, including the scope and degree of control?		**Satisfactory**
4.1.3	Are provisions and restrictions for future expansions and modifications described clearly?	Sizing of I/O for RTDB, FCS for OTS, No. of total workstation/servers for NMS	**Satisfactory**
4.1.4	Are the interfaces with other subsystems described clearly?	RTDB and ALMS communication with vendor via UCP OPC Type B or Type	**Satisfactory**

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S/NO	CHECK ITEMS	REMARKS	EVALUATION
4.1.5	Are the interfaces with foreign language (eg Russian) described clearly?	Project in English	Satisfactory
4.1.6	Are the controls, which are scanned at intervals other than every second, described clearly?		Satisfactory
4.2	**System Error Handling**		
4.2.1	Is the process on applications upon recovery (initialization start, continuous start, and switching of control mastership) described clearly?		Satisfactory
4.2.2	Is the Process on applications upon recovery of the communication described?		Satisfactory
4.3	**Other Items**		
4.3.1	Is safety included in the following items? • Error handling in regulatory and sequence controls (for APC)		Not Applicable
4.4	**Report package specification**		
4.4.1	Are the general specifications for printout reports described clearly? • Types, number of pages, and output destination of reports to be supplied		Satisfactory
4.4.2	Are the specifications for each report described clearly? • Activation of data acquisition and printing • Scheduler setting		Not Applicable
4.4.3	Are the print formats defined clearly?		Not Applicable
4.4.4	Are the print data items defined clearly?		Not Applicable
5.0	**Precautions for Modification / Revamp job**		
5.0.1	Is consistency with existing functions considered?		Satisfactory
5.0.2	When the functions were designed, was careful consideration given in determining the scope of the existing functions that would be affected by the planned modifications, including the portions that are not subject to be modified directly?		Satisfactory
5.0.3	Is the limitation in the number of tags for a project considered?		Satisfactory
5.0.4	If the modifications result in off-line loading at the site at the end, has that fact been notified to and approved by the customer?		Satisfactory
5.0.5	Has a request to save the current system been made? Is the schedule for this clear (including borrowing the system backup if not upgrading the builders.)		Satisfactory
6.0	**Other Items**		
6.0.1	Have all decisions that are recorded in the minutes of meetings and inquiries sent by emails/memo been processed?		Satisfactory
6.0.2	Have the problems and comments found or noted through past reviews and walk-through been corrected or solved yet? Have signatures for approval been given for all such items?	All FDS was reviewed together with user to ensure documentation satisfy customer requirement	Satisfactory
6.0.3	Regarding the format of the Function Specifications, can it be used as part of the Factory Acceptance Procedure?		Satisfactory