

**SCOPE OF SUPPLY AND COMMISSIONING FOR  
UP-GRADATION OF DNC SYSTEM IN BLOCK-1**

<b>1.0</b>	<b>Purpose and Basic Requirement:</b>	
1.1	The DNC system is used for part programs and other machine parameters to be loaded from a centralized PC to CNC machines and saved from CNC machines to centralized PC, automatically as and when required by machine operators and maintenance personnels.	
1.2	The existing DNC system is having two separate DNC PC's connected to five nos. and three nos. of CNC machines respectively. Each machine is connected to the PC with the help of two line drivers through hard wired cables in RS232/RS485 configuration.	
1.3	New DNC system shall be installed to replace the existing DNC system. New DNC system shall consist of only one centralized PC and ten CNC machines shall be connected with the PC through Wi-Fi Connectivity. This Wi-Fi network shall operate on license free frequency band (2.4GHZ). This network must be a Private Secured Network. This network should not interfere with BHEL Wi-Fi local area network.	
1.4	The aerial distance between the location of the PC and farthest CNC machine is maximum 150 meters. The PC will provide connectivity to the CNC machines with the help of a Access point module connected to the PC through Ethernet port. Each machine will have an independent node point module connected to it through RS232 port. All the node points shall have continuous Wi-Fi connectivity with the PC through access point module.	
<b>2.0</b>	<b>Scope of Supply:</b>	
2.1	Wi-Fi Access Point Module for PC, having range of 150 meters, along with preassembled Ethernet connecting cable of minimum 20 meters length.	2 Nos.
2.2	Wi-Fi to RS232 Node Point Module along with suitable power adaptor.	10 Nos.
2.3	RS232 data cable of minimum 5 meters length preassembled with connectors and dust cover for connecting Node Point Module to CNC Control of the machine.	10 Nos.
2.4	Client based DNC Server Software with license for WIN7 based PC, with 10 ports.	1 No.
2.5	Diagnostic/testing features (including hardware and/or software) for checking the signal strength at transmitter/receiver end.	1 Set
2.6	Operation, Maintenance & Interfacing Manual of the complete DNC system.	2 Nos.
<b>3.0</b>	<b>Scope of Work &amp; Commissioning:</b>	
3.1	Installation & Commissioning of DNC Server Software on the PC. The maintenance personnel should be trained for installation of the software on BHEL PC.	
3.2	Installation of Access Point Module at suitable location and its Interfacing with the PC.	
3.3	Installation of Node Point Modules at suitable location and Interfacing with CNC machines.	
3.4	Prove out of the supplied DNC system and training of maintenance and operating personnel.	
3.5	Preparing recovery/back-up CD/DVD of the installed software and parameter settings. Steps for restoration of new hard disk in case of hard disk failure must be provided in maintenance manual.	
<b>4.0</b>	<b>General Conditions:</b>	
4.1	The PC having latest Winsows-7 operating System shall be provided by BHEL.	
4.2	The Perfect connectivity of DNC PC with the Machines (without any interruption and data loss) has to be ensured.	
4.3	The Price for Material (hardware & software) and Work (Installation & commissioning) must be quoted separately.	
4.4	The Material supplied and work done shall be under warranty for 12 months from the date of successful commissioning of the DNC system.	
4.5	The vendor should give point wise compliance to all above points of annexure-A.	

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