

## AMENDMENT NO.2 TO BIDDING DOCUMENTS – May 18, 2015

**Project Title:** Design, Supply, Install, Integrate, Commission, Test and Maintain the Intelligent Transportation System for HDBRTSCO in Hubli-Dharwad, Karnataka, India

**IFB No.:** HDBRTS/ITS/PROC/2014-15/02 Dated 20<sup>th</sup> February 2015

Subsequent to the pre-bid meeting held on **25<sup>th</sup> March 2015**, the following amendments are made to the bidding documents for the titled project. These amendments shall form part of the bidding documents. The replies/ clarifications to the queries received from potential bidders and further amendments if any to the bidding documents will be uploaded to [www.hdbrts.co.in](http://www.hdbrts.co.in).

S.NO.	Bidding Documents Reference	Corresponding Content of Bidding Documents	Amended/ New Content of Bidding Documents
1.	Pg. 167, Point 2.4 – Buses		NWKRTC is responsible for Feeder and City Buses. HDBRTSCO will be responsible for BRT Buses. All the buses run on 24V bus batteries. However, the successful bidder is expected to conduct a detailed voltage output analysis while the buses are running to ensure that the required protection is provided to the AVL equipment. Volvo are providing regular BRT buses, Tata are providing the articulated BRT buses, Ashok Leyland are providing midi buses for feeder; while the city buses are various makes and models that are present in the system. The successful bidder is expected to conduct a detailed ground survey and provide bus drawings of the installations on each type of bus in the design phase before installing the AVL equipment on the city services. NWKRTC shall be responsible for maintaining all the buses.
2.	Pg. 199, Section VI – Technical Requirements, Point 5.3	<p><b>5.1 Pilot Deployment</b></p> <p>The bidder shall conduct pilot testing for meeting Purchaser business requirements before rolling out the complete system.</p> <ul style="list-style-type: none"> <li>• The pilot will be run for four weeks to study any issues arising out of the implementation. Based on Purchaser feedback for incorporating changes as required and appropriate. Routes, schedules, necessary data will be shared by the purchaser.</li> <li>• Bidder shall train staff involved in the Pilot implementation.</li> <li>• The pilot will be evaluated on the following evaluation factors:</li> <li>• A minimum of 10 BRT buses and another 20 non-BRT buses</li> </ul>	<i>Deleted Section 5.1.</i>

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		<p>both feeder and city buses with minimum 4 different routes.</p> <ul style="list-style-type: none"> <li>• One terminals and 10 BRT Bus stations with fare gates.</li> <li>• ETMs on the non-BRT buses.</li> <li>• PIS display board at five bus stations.</li> <li>• Complete functionality as mentioned this document for AFCS, AVL, PIS, IMS, TMS, Communication system be demonstrated successfully.</li> <li>• Supplier to deploy minimum infrastructure at data centre for pilot.</li> </ul> <p>If for any reason the pilot is found to be incomplete, these will be communicated to the supplier in writing on the lapses that need to be made good. A one-time extension will be provided to the supplier for making good on the lapses pointed out before offering the system to Purchaser for review. If further failures occur, the Purchaser may, at his choosing, invoke the Liquidated Damages.</p>	
3.	Pg. 208, UPS Availability	“Availability” is defined as: When UPS is available in full working condition as defined in bidding documents. UPS running in “Bypass” mode shall also be considered as unavailability.	“Availability” is defined as: When UPS is available in full working condition as defined in bidding documents. UPS running in “Bypass” mode shall also be considered as unavailability. Availability shall be calculated only for power outages that are less than the UPS backup time.
4.	Pg. 219, Req 35	Security keys associated with the smart cards and SAM shall be provided to the Purchaser in a sealed envelope. Any changes in these keys at any point shall be provided in writing to the Purchaser along with the latest keys and shall only be done after written approval from the Purchaser.	Security keys associated with the smart cards and SAM shall be provided to the Purchaser in a sealed envelope. Any changes in these keys at any point shall be provided in writing to the Purchaser along with the latest keys and shall only be done after written approval from the Purchaser.  The minimum number of SAM slots shall be 2.
5.	Pg. 227, Req 127	Smart card should be accurately read at least 99.9% of the time.	Smart card that is in readable condition should be accurately read at least 99.9% of the time.
6.	Pg. 232, Req 220	The Smart Card Revaluing (SCR) Device shall be able to fully support ISO14443-A (MIFARE) and ISO14443-B (CALYPSO) contactless proximity smart cards.	The Smart Card Revaluing (SCR) Device and Smart Card Reader shall be universal readers and shall fully support ISO 14443 Type A and B cards, Mifare, FeliCa, and all 4 types of NFC (ISO/IEC 18092) tags.
7.	Pg. 234, Req 258	The Bidder shall provide factory test info on cards (i.e. proof of durability).	The Bidder shall provide factory test info on cards (i.e. proof of durability) and chip OEM Certificate for authenticity of cards.
8.	Pg. 234, Req 261	Point of Sale operators at stations/terminals shall be able to issue bar-	Point of Sale operators at stations/terminals shall be able to issue bar-

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		coded paper tickets and recharge smart card accounts using a Point of Sale Workstation.	coded paper tickets, issue E-purse pre-printed smart cards and recharge smart card accounts using a Point of Sale Workstation.
9.	Pg. 239, Point No. 351	All mechanical parts of the gate shall have a MTBF of at least 10 Million cycles	All mechanical parts of the gate shall have a MCBF of at least 10 Million cycles
10.	Pg. 239, Req 358	Based on sensor data, the barrier logic in the gate consoles shall control the barriers by detecting patron passage, prohibiting the possibility of barrier closure on the patron that initially caused the barriers to open, and also deterring the possibility of more than one patron traversing the gate with a single ticket.	Based on sensor data, the barrier logic in the gate consoles shall control the barriers by detecting patron passage, prohibiting the possibility of barrier closure on the patron that initially caused the barriers to open, and also deterring the possibility of more than one patron traversing the gate with a single ticket. The gate shall be able to clearly detect and segregate tailgate between two persons for a minimum clear distance of 20 centimeters.
11.	Pg. 239, Req 359	Based on sensor data, the barrier logic in the gate consoles shall control the barriers such that they are prevented from closing prior to a patron passing through with a cane, a parcel, a package, briefcase, suitcase, umbrella, a bicycle, a stroller, a small child, and the like.	Based on sensor data, the barrier logic in the gate consoles shall control the barriers such that they are prevented from closing prior to a patron passing through with a cane, a parcel, a package, briefcase, suitcase, umbrella, a stroller, a small child, and the like.
12.	Pg. 242, Req 396	The conductor shall be able to manually adjust the current origin location.	The location will be received from the built in GPS system of the device, and in case the location being displayed is not correct the conductor shall be able to manually correct the origin location in the hand held machine.
13.	Pg 262, Req. 720	The OBITS equipment will be supplied by bus manufacture along with bus. Bidder shall provide the end to end support to integrate with central system software. This hardware shall have UBS II specification. Following hardware would be supplied along with bus: <ul style="list-style-type: none"> <li>• SCU</li> <li>• BDC</li> <li>• PIS</li> <li>• SCN and Camera</li> <li>• VHMD</li> </ul>	The OBITS equipment will be supplied by bus manufacture along with bus. Bidder shall provide the end to end support to integrate with central system software. This hardware shall have UBS II specification. <b>Bidder shall refer to UBS-II specification and its amendments at jnnurm.nic.in.</b> Following hardware would be supplied along with bus: <ul style="list-style-type: none"> <li>• SCU</li> <li>• BDC</li> <li>• PIS</li> <li>• SCN and Camera</li> <li>• VHMD</li> </ul>
14.	Pg. 264, Req 757	The Operating System shall be Microsoft Windows 2008 Server Edition or latest as available in the industry.	The Operating System shall be as per the solution and shall be the latest version.
15.	Pg. 265, Req 774	Server shall be designed to provide a fully redundant and fault tolerant system and shall be available for 99.99% or greater. The unscheduled down time shall be less than 0.01%.	<i>Deleted</i>

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16.	Pg. 273, Req 916	Bidder expected to develop SMS for commuter for those does not have GPRS connection with their mobile. This is to provide ETA, Stop code, fare, pass, route no, etc., through SMS	<p>Bidder is expected to develop SMS for commuter for those does not have GPRS connection with their mobile. This is to provide ETA, Stop code, fare, pass, route no, etc., through SMS.</p> <p>The SMS gateway shall be provided by the bidder. The SMS provider shall be proposed by the successful bidder to the Purchaser for approval. The recurring cost of the SMS shall be borne by the Purchaser.</p>
17.	Pg. 298, Req 1391	The door should open only in an event that the bus arrives at the station bay only.	The door should open only in an event that the bus arrives at the station bay only. The sliding doors shall adhere to DIN 1865, CE or any other equivalent international Safety Standards. The applicable standard should be used widely in the industry
18.	Pg. 299, Req	All the Aluminum sections of the System should be of Jindal, Hindalco or equivalent with the thickness of minimum 3.18 mm.	<i>Deleted</i>
19.	Pg. 301, Section VI – Technical Requirements, Point 10- Testing Requirements	Site Integration Tests (SIT);	Pilot Test
20.	Pg. 302, Section VI – Technical Requirements, Point 10- Testing Requirements	SIT shall be conducted after the installation of the central system and an initial set of agreed installations is done in an integrated manner, and deficiencies shall be rectified before the completion of the remaining installations. SIT shall be demonstrated for an integrated operation of all system components and software using a minimum of 5 buses, 2 bus-stations, 5 handheld ticketing machines, and 1 pass (smart card) issuing station across the city. SIT shall be witnessed by Purchaser's representatives (Purchaser staff and/or designated support consultants). Failure to successfully demonstrate the SIT may lead to termination of the contract with no liability to Purchaser.	<p>The bidder shall conduct pilot testing for meeting Purchaser business requirements before rolling out the complete system.</p> <ul style="list-style-type: none"> <li>• The pilot will be run for four weeks to study any issues arising out of the implementation. Based on Purchaser feedback for incorporating changes as required and appropriate. Routes, schedules, necessary data will be shared by the purchaser.</li> <li>• Bidder shall train staff involved in the Pilot implementation.</li> <li>• The pilot will be evaluated on the following evaluation factors: <ul style="list-style-type: none"> <li>○ A minimum of 3 BRT buses and another 6 non-BRT buses both feeder and city buses with minimum 4 different routes.</li> <li>○ One terminal and 3 BRT Bus stations with fare gates.</li> <li>○ Backup ETMs at BRT stations and ETMs on the non-BRT buses.</li> <li>○ PIS display board at the 3 bus stations.</li> <li>○ Smart cards and bar coded tickets</li> <li>○ One Point of Sale location</li> <li>○ Complete functionality as mentioned in this document for AFCS, AVL, PIS, IMS, TMS, Communication system to be demonstrated</li> </ul> </li> </ul>

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			<p>successfully.</p> <p>The Pilot shall be demonstrated to the Purchaser's representatives (Purchaser staff and/or designated support consultants). If for any reason the pilot is found to be incomplete, these will be communicated to the supplier in writing on the lapses that need to be made good. A one-time extension will be provided to the supplier for making good on the lapses pointed out before offering the system to Purchaser for review. Failure to successfully demonstrate the Pilot may lead to termination of the contract with no liability to Purchaser.</p>
21.	Pg. 309, IMS H3.2		<p>The 12m CCTV Poles shall be:</p> <ul style="list-style-type: none"> <li>• Hot dipped galvanised, round shape steel pole. using weathering steel material that retards corrosion.</li> <li>• Shall be designed in accordance with NCHRP 494</li> <li>• Shall conform to IS:1239 class B medium weight (ISI marked) made out of 4.85mm thick steel</li> <li>• Easy to install.</li> <li>• Maintenance free.</li> </ul>
22.	Pg. 416, Annexure 3 Epurse	The e-purse cards will have a value stored in the card account. Based on each usage, the applicable fare will get deducted from the smart card account. Generally e-purse cards have long validity/expiry date and the amount unused is refundable if the commuter wish to surrender or close his/her smart card account.	The e-purse cards will have a value stored in the card account. Based on each usage, the applicable fare will get deducted from the smart card account. Generally e-purse cards have long validity/expiry dates and the amount unused is refundable if the commuters wish to surrender or close his/her smart card account. The E-purse cards shall be pre-printed type with artwork as provided by the Purchaser to be printed on both sides of the card.
23.	Pg 417-418, Smart card issuance	To get smart card issued, the commuters will be required to visit any of the POS centers located across the city, fill in the forms available at POS centers and submit required documents as mentioned in the application form. The users can also download application form for smart cards from HDBRTS website and submit them at designated POS centers. Smart card recharge:	For getting the bus pass on smart card (smart pass) issued, the commuters will be required to visit any of the POS centers located across the city, fill in the forms available at POS centers and submit required documents as mentioned in the application form. The users can also download application form for smart pass from HDBRTS website and submit them at designated POS centers. For E-Purse issuance, the commuters can get the same issued at any of the POS terminals/stations/centers. In case of E-Purse no documents are required and the commuters can get them issued/recharged instantly.
24.	Pg. 421, AFCS Concept of	The AFCS system shall be able to reconcile and account for the revenue being collected at all stages of fare collection system being implemented.	The AFCS system shall be able to reconcile and account for the revenue being collected at all stages of fare collection system being implemented.

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	Operations - Revenue Distribution	The AFCS system shall be able to do revenue distribution among trunk, feeder and city bus services as per the commuter journeys for each respective service and POS recharges.	<p>The AFCS system shall be able to do revenue distribution among trunk, feeder and city bus services as per the commuter journeys for each respective service and POS recharges.</p> <p>The revenue collected, shall be deposited into an escrow account and both the agencies HDBRTSCO and NWKRTC) will share the revenue based on the agreed business rules which shall also be provided to the successful bidder during design stage. However, separate MIS reports for revenue, usage, etc. shall be developed for the two agencies based on the business rules.</p>																														
25.	Pg. 251, Req 557	Two way voice communication from Vehicle to City Mobility Center: All the calls shall land in EPABX system so that multiple calls at City Mobility Center can be handled by the dispatchers.	Two way voice communication from Vehicle to City Mobility Center: All the calls shall land in EPABX/VoIP or similar client approved system so that multiple calls at City Mobility Center can be handled by the dispatchers.																														
26.	Pg. 160,	<table border="1"> <thead> <tr> <th data-bbox="428 748 501 852">S.No</th> <th data-bbox="501 748 1005 852">Sub System</th> <th data-bbox="1005 748 1171 852">Field Equipment Locations</th> </tr> </thead> <tbody> <tr> <td data-bbox="428 852 501 963">1</td> <td data-bbox="501 852 1005 963">Automatic Fare Collection System (AFCS)                             <ul style="list-style-type: none"> <li>Flap Gates</li> <li>ETMs</li> </ul> </td> <td data-bbox="1005 852 1171 963">BRT Stations, City &amp; Feeder Buses</td> </tr> <tr> <td data-bbox="428 963 501 1105">2</td> <td data-bbox="501 963 1005 1105">Automatic Vehicle Location System                             <ul style="list-style-type: none"> <li>Buses with existing OBITS equipment</li> <li>Buses on which AVL equipment to be added</li> </ul> </td> <td data-bbox="1005 963 1171 1105">All Buses</td> </tr> <tr> <td data-bbox="428 1105 501 1179">3</td> <td data-bbox="501 1105 1005 1179">Passenger Information System</td> <td data-bbox="1005 1105 1171 1179">BRT Stations, Terminals</td> </tr> <tr> <td data-bbox="428 1179 501 1388">4</td> <td data-bbox="501 1179 1005 1388">Incident Management System</td> <td data-bbox="1005 1179 1171 1388">Project Corridor, Terminals, City Mobility Center (CMC)</td> </tr> </tbody> </table>	S.No	Sub System	Field Equipment Locations	1	Automatic Fare Collection System (AFCS) <ul style="list-style-type: none"> <li>Flap Gates</li> <li>ETMs</li> </ul>	BRT Stations, City & Feeder Buses	2	Automatic Vehicle Location System <ul style="list-style-type: none"> <li>Buses with existing OBITS equipment</li> <li>Buses on which AVL equipment to be added</li> </ul>	All Buses	3	Passenger Information System	BRT Stations, Terminals	4	Incident Management System	Project Corridor, Terminals, City Mobility Center (CMC)	<table border="1"> <thead> <tr> <th data-bbox="1197 748 1270 852">S.No</th> <th data-bbox="1270 748 1774 852">Sub System</th> <th data-bbox="1774 748 1940 852">Field Equipment Locations</th> </tr> </thead> <tbody> <tr> <td data-bbox="1197 852 1270 1031">1</td> <td data-bbox="1270 852 1774 1031">Automatic Fare Collection System (AFCS)                             <ul style="list-style-type: none"> <li>Flap Gates</li> <li>ETMs</li> </ul> </td> <td data-bbox="1774 852 1940 1031">BRT Stations, City &amp; Feeder Buses, Terminals</td> </tr> <tr> <td data-bbox="1197 1031 1270 1174">2</td> <td data-bbox="1270 1031 1774 1174">Automatic Vehicle Location System                             <ul style="list-style-type: none"> <li>Buses with existing OBITS equipment</li> <li>Buses on which AVL equipment to be added</li> </ul> </td> <td data-bbox="1774 1031 1940 1174">All Buses</td> </tr> <tr> <td data-bbox="1197 1174 1270 1247">3</td> <td data-bbox="1270 1174 1774 1247">Passenger Information System</td> <td data-bbox="1774 1174 1940 1247">BRT Stations, Terminals</td> </tr> <tr> <td data-bbox="1197 1247 1270 1388">4</td> <td data-bbox="1270 1247 1774 1388">Incident Management System</td> <td data-bbox="1774 1247 1940 1388">Project Corridor, Terminals, City Mobility</td> </tr> </tbody> </table>	S.No	Sub System	Field Equipment Locations	1	Automatic Fare Collection System (AFCS) <ul style="list-style-type: none"> <li>Flap Gates</li> <li>ETMs</li> </ul>	BRT Stations, City & Feeder Buses, Terminals	2	Automatic Vehicle Location System <ul style="list-style-type: none"> <li>Buses with existing OBITS equipment</li> <li>Buses on which AVL equipment to be added</li> </ul>	All Buses	3	Passenger Information System	BRT Stations, Terminals	4	Incident Management System	Project Corridor, Terminals, City Mobility
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		5	City Mobility Center (CMC) System	City Mobility Center (also called Control Center or Traffic Management Cener)	Center (CMC)
		6	Transit Management System which includes: <ul style="list-style-type: none"> <li>o Bus Schedule &amp; Crew Management</li> <li>o Depot &amp; Terminal Management System</li> <li>o Workshop Management System</li> <li>o Inventory/Asset Management System</li> <li>o Human Resource Management System</li> <li>o Accounting (non-ticketing) System</li> </ul>	Depot, Workshop, Terminals, Divisional Offices	City Mobility Center (CMC) System  Transit Management System which includes: <ul style="list-style-type: none"> <li>o Bus Schedule &amp; Crew Management</li> <li>o Depot &amp; Terminal Management System</li> <li>o Workshop Management System</li> <li>o Inventory/Asset Management System</li> <li>o Human Resource Management System</li> <li>o Accounting (non-ticketing) System</li> </ul>
		7	Backup Power (UPS)	BRT Stations, Terminals, Depots, Divisional Office	Depot, Workshop, Terminals, Divisional Offices  Backup Power (UPS)
		8	Automatic Sliding Doors (ASD)	BRT Stations	BRT Stations, Terminals, Depots, Divisional Office, Workshops
		9	Communications network for the deployed systems	Project Corridor + BRT Stations	Automatic Sliding Doors (ASD)

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			+ Depot + Terminal + Buses	9	Communications network for the deployed systems  Project Corridor + BRT Stations + Depot + Terminal + Workshop + CMC + Buses
				10	Additional Information Displays  Depots + Workshops