

Clarifications to the queries raised by the bidders

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## 1. Technical Features and Solutions

### 1.1. Clarifications for BOM

- Total # of Network Devices to be monitored (Routers, Switches)
- Total # Servers to be monitored
- Operating system of the Servers to be monitored
- Total # of Databases to be monitored
- The Database type and total # of CPU's on the database Servers

The bill of materials is the estimate from KSRTC. As part of the solution architecture and design, implementation bidder will be required to comply with the specification requirements and meet the functional requirements of KSRTC.

1.2. VMU should have at least 4 programmable buttons (SOS button – 1 no. plus 3 buttons – configurable for different messages). If VMU is to be installed on concealed location (not to be visible by others) then how the driver will access 4 buttons?

It should be installed in a well protected manner with accessibility to the Driver

1.3. Communication Sub System, b) Vehicle Mounted Unit (VMU) - VMU should have at least 4 programmable buttons (SOS button - 1 n. plus 3 button - configurable for different messages. It is suggested that KSRTC clearly specify the exact quantity of programmable buttons and serial ports required for the device under the specification specified for the device.

Refer Question no. 1.2. The configuration requirements will be indicated by KSRTC during the development phase. Additional buttons and any features that can be provided are optional

1.4. Is it mandatory the VMU should have at least 4 programmable buttons ?

Refer Question no. 1.2. The configuration requirements will be indicated by KSRTC during the development phase.

1.5. In various functional requirements, there is mention of knowing driver behavior, Driver Duty reports and Driver Id being passed to back-end. Please clarify on how KSRTC proposes to get the Driver Id. Is it through a mechanism of driver doing check-in\_/ log-in on Display Control Unit (real time and requires Interface between Display Control Unit and VMU) , or Driver mapped to vehicle in back-end needs to be picked up (not real time, depends on mapping in back-end)

The Bidder may decide and design the appropriate Driver ID. Currently, the allocation of drivers to the different buses and schedules is done manually. At a minimal level KSRTC would be updating the driver allotment details through the interface available at the bus terminals / Bus depots. However, if the Bidder has a better technology solution, KSRTC would examine automating this process.

1.6. Section C-1 Passenger Information System

Passenger Information System shall provide real time traffic density Information, which can be used by commuters to facilitate travelers to better plan their trips,

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bypass congested routes or choose to delay departure times in the event of congestion.

The PIS system has capability to predict on traffic situation to some extent based on speed of buses on trips.

But this information cannot be too accurate to be shared with public as there is no inputs from any 3rd party source for traffic information. We can use this information to have a hint of traffic Jam, confirm by driver of bus on trip and accordingly Bus Station Manager can take a call.

Please elaborate how you want to make available this information to public?

Bidder to provide all the requirements as specified in the Bidding document.

Currently the traffic police has mechanisms to provide such traffic congestion data to the public on a real time basis such as for instance through SMS alerts. The Bidder is expected to study the facility and examine ways of integrating this data in its own network which would help the bus drivers in planning alternate strategies in the event of any such major traffic congestion caused due to party rallies, other special events, etc.

### 1.7. Communication Sub-System - Driver Voice Communication

Communication Headset will be provided to the driver to interact with Central Control Center. The driver will use the two-way communication facility made available to communicate with the central control center. The central control center can also contact any of bus drivers instantly to communicate messages. The driver can also use the audio system for announcing information regarding arrival of bus stations and incident management.

Our viewpoint/ understanding is the following:

1. Announcement by driver not required as we already having in-bus announcement system. Also it will divert the attention of driver from driving.
2. Control Centre to contact driver on voice

Please confirm.

Any non-intrusive alert system would be fine. Left to the ingenuity of the Bidder.

Bidder is free to deploy suitable technology that helps meet the functional requirements which is primarily facilitating communication between the Driver and the Central Control Station and with the Commuters either through automated voice announcement systems or where required to manually use the voice announcement system when required.

### 1.8. Communication Sub-System - Display system standards requirements

The BUS TERMINAL DISPLAYS, unlike the BUS STOP Displays will be connected through wired cable with the CS.

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Please confirm if Bus terminal displays to be LCDs or LEDs and our understanding is that wired connection will not be possible from bus terminal to CS and LCD must get data over internet on real-time basis. Please confirm.

The Bidder is free to choose the communication channel through a mix of broadband connections that could interconnect the Bus terminals with the Central Control Station

1.9. There will be local databases at the bus stops/\_terminals, which will be synchronized.

Our point of view is that to meet the required PIS functionality there will not be a need to keep database locally and real time information can be transmitted over GPRS or Internet. Please confirm if this is okay.

The Bidder is free to deploy any suitable mechanism that meets the requirement

1.10. Is there any Disaster recovery site for ITS Mysore? Please clarify Yes/\_No?

There is no DR site at Mysore currently and will have to be factored in by the Bidder

1.11. If yes please clarify D.R. components and site location?

The selected bidder will be required to make arrangements for disaster recovery at a site other than that at KSRTC headquarters at Mysore at their costs. The following critical systems – Passenger Information system, Central Control Station, Automatic vehicle location information sub-system must be functional within 8 hours from the beginning of an event which prevents the system from being used. In addition, there should be some provision for restoring full functionality of all systems within one week. It is the responsibility of the bidder to establish DR centre at his cost. The choice of technology and location is left to the bidder to meet the performance requirements. **Also, please refer Sl. No. 9 of Amendment No-1 to bidding document.**

1.12. F\_req 9 of 129 page. PIS through IVRS (What is the expectation of the KSRTC)

Real time data to be made available to the commuters through various forms of communication – display boards, web, Interactive voice response, etc.. Bidder is expected to design and develop the suitable IVRS.

1.13. What is the communication media is advised for Voice communication between the bus and control room? Are the communication media / channel for voice and data separate?

The Bidder to choose the appropriate communication channel such as for instance the GSM network

1.14. AVL-IS needs to integrate with other sub-systems in the overall ITS solution framework - Please clarify on the sub-systems and the type of interfaces.

Intelligent Transport System consists of many sub-systems as detailed out in the Technical Specifications. In evolving module based solution, the Bidder may

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architect the solution ensuring that various of the sub-systems identified in the requirements at a broad level and sub-systems identified by the Bidder as part of its architecture are all integrated.

1.15. The automated voice announcement device shall enable communication with passengers without the automated voice announcement device shall enable communication with passengers without distracting the vehicle's operator - How is this possible with Software Please clarify.

Bidder is free to deploy suitable technology that helps meet the functional requirements which is primarily facilitating communication between the Driver and the Central Control Station and with the Commuters either through automated voice announcement systems or where required to manually use the voice announcement system when required.

1.16. There will be third-party streaming servers used to stream advertisements onto the buses/bus stops etc. The ad files will be stored in the content management system. – What is the interface to content Management system.. Clarify?

The Bidder will have to provide the necessary interfaces to integrate the systems and sub-systems

1.17. There will be local databases at the bus stops/terminals, which will be synchronized. Please Clarify. Requirement not clear.

The data will be streamed from the CCS. The Bidder may design the storage requirements for the display content to be stored and displayed.

1.18. Is it necessary for KSRTC to go for hosted servers /\_control center at Mysore? Can they opt for a web based solution like we have given to DTC?

Bidder may choose an appropriate architecture and design to meet the functional requirements

1.19. Can we offer CDMA as communication technology which is at par with GPRS and have better data transfer capability?

Bidder to adhere to the specifications given under Section-6, Communication Subsystem as detailed in BIDDING document

1.20. Is voice communication is necessary? Can this be eliminated?

It is necessary

1.21. We assume at the start of each trip the driver will press the within bus display controller. Please confirm

These are operational details which the Bidder will have to build the functionalities as required.

1.22. Can we offer bus terminal board also with CDMA data connectivity instead of wireline

Bidder to adhere to the specifications given under Section-6, Communication Subsystem as detailed in BIDDING document.

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1.23. In case there is a LED board system already exist in bus, there will be additional controller for inside bus display & voice announcement system , which driver need to press. Need clarity

This will be part of Bidder's requirements study and analysis as part of evolving the operational specifications for the features offered.

### 1.24. Scope of the System

5 4 Mbps dedicated bandwidth (License Cost)

6 4 Mbps Redundant Line

Is redundancy in the last mile connectivity acceptable for KSRTC?

Question is not clear. Anyway the Bidder is free to come up with a solution design that meets the communication requirements in terms of speed and bandwidth to meet to the performance requirements

1.25. Automatic Location And Tracking System, Environmental Specification- - Enclosure- UL fire retardant Is the department looking at UL certification also?

Bidder may chose the best options and certifications would definitely be welcome.

1.26. Automatic Location And Tracking System, Environmental Specification- Vibration – to meet SAE standards. What are the exact standards you are looking at please specify.

Bidder may chose the best options and conformance to standards would definitely be welcome.

1.27. Automatic Location And Tracking System, Electrical Characteristics- Battery Life: 8 hours normal operation- Since the VMU is connected to the vehicle battery, why is a battery life of 8 hrs desired, 4 hrs should be sufficient.

The Bidder to meet the requirement as per the BIDDING DOCUMENTS.

1.28. Communication Sub System, b) Vehicle Mounted Unit (VMU) - VMU application should generate tampering alerts. What type of tampering alerts need to be provided e.g. power disconnection, box opening and sim card alert

Any possible tampering attempts need to be alerted.

1.29. Communication Sub System, b) Vehicle Mounted Unit (VMU) – The VMU must be able to generate real -time alerts to drivers for exceptions such as Over – Speeding, Harsh Braking, Harsh Acceleration, etc. GPS device cannot by itself provide alerts for Harsh Braking and Acceleration; this can only be done by putting a multi accelometer in GPS device.

The Provisions of bidding documents shall prevail. The choice of the solution and the components that would meet the specifications is left to the Bidder

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1.30. We suggest that the specifications and communication protocol for the in bus display unit and voice integration be provided.

This is to be decided by the Bidder based on the design and choice of solution components. KSRTC will evaluate the appropriateness of the technical solution during technical evaluation

1.31. Travel Demand Management, Operational and Maintenance Management specified in Page No. 124 of the BIDDING document. Pls. elaborate.

These are the functional requirements of KSRTC. Bidder to study these and propose KSRTC about achieving these parameters.

1.32. Deploying Application Subsystem - AVL-IS, PIS. Are you looking for ready to deploy solution.

It is for the Bidder to decide

1.33.

- a. AVL-IS to receive data from where (multiple data source)
- b. How AVL-IS is supposed to receive and display the data for in vehicle display (e.g. special messages, advertisement, other content etc.)? Is it from central control station or to be stored locally in AVL-IS through local multimedia device?
- c. Will the advertisements / display in the bus be also video / audio format or only Text/audio format?
- b. Medium of communication for AVL-IS to receive data
- c. Manual data porting in AVL-IS through SD/CD DVD.
- d. AVL-IS to communicate data to multiple locations.
- e. The communication medium for AVL-IS to communicate to external points
- f. Medium of communication from AVL-IS inside the vehicle devices like LCD, speaker, other terminals if any.
- g. The frequency of communication by all the above mediums to the AVL-IS and from the AVL-IS.

The Bidder will have to decide on the technical design of the solution

1.34. The Purchaser is responsible for performing and safely storing timely and regular backups of its data and Software in accordance with accepted data management principles, except where such responsibility is clearly assigned to the Supplier elsewhere in the Contract. What is the details of data backup required? Period of data to be archived and period of live data?

Bidder is expected to work out as part of the design and technical specifications based on the requirements gathering and analysis

1.35. Will be local databases at the bus stops / terminals, which will be synchronized. Please elaborate what type of data will be stored in stop / terminal machine

The requirement is clear. Bidder may elaborate on this as part of their design

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1.36. There will be third-party streaming servers used to stream advertisements onto the buses / bus stops etc. The ad files will be stored in the content management system. Is content management system in scope of this tender?

Yes

1.37. Identify specific areas of existing GPRS/GSM blackout zones and Police critical locations in Mysore and enhance number of BTS towers and their capacities, if required.

The GPRS/GSM data connectivity would be seamless while moving from one BTS site to other BTS site in Mysore. This requirement needs to be taken up with the GSM/GPRS Service provider and can be effectively dealt with if KSRTC instructs the GSM Service provider to do the same.

This will be the responsibility of Bidder

1.38. The ITS solution should scale up to meet additional buses deployed as necessary on temporary / permanent basis including interfaces to smart card based ticketing system. Do you expect interface in GPS device for Smart Card Reader? OR will the communication of smart card reader with backend an independent system? What is the scope of smart card ticketing system you have planned.

The Bidder as part of the technical response must factor the appropriate design to meet this requirement.

1.39. Overall, we feel that there are many items in the tender that may be very specific and need customization and development. In our suggestion we could provide our standard solution that will meet approximately 85% of your expectations and in this way the price will be much lower and you can expect an off-the-shelf product with a strong customer base and future improvements. Some of items in the tender that need development are streaming advertisements, real-time speed violation, real-time seat availability without using a proper passenger counting solution, Pollution control, Automatically headway adherence, flexible ticket pricing plans, fleet management solution without an FMS gateway etc. We also have specific operational concerns with regards to the prerequisites mentioned under sections C-5 and C-6 and many other items such as the following:

- a) Provide for 2-way voice communication between the driver of the vehicle and the Central Control room for receiving SOS and alerts from vehicle. We can provide that with our extra module (PTC).
- b) Facility for playing back the recorded details of the bus movement along the authorized route.
- c) It should also support import or export of services to facilitate commuters in looking up for services directly in Google maps.
- d) It should enable operational managers to very easily create locations, routes, schedules and flexible ticket pricing plans using an intuitive user interface.
- e) Driver scoring card

The data captured in the AVL system such as speed, adherence to scheduled routes without deviation, timeliness in terms of departure and arrivals and any other

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parameter to be evolved in discussion with the KSRTC concerned officials will form the basis of the score card for the drivers.

- f) Auto headway detection and notification
- g) DSS will provide a central management to manage signage categories, create content policies, scheduling, costing, etc.
- h) DSS will support content like simple text, images, video, flash, an RSS feeds or other web content
- i) DSS will keep records of all playback statistics and generate customer bills accordingly
- j) The display systems shall have in-built test facility, able to carry out self check at periodic intervals as well as exchange of diagnostic information from the central control stations including power availability, and its current status
- k) The output from the AVL-IS shall be connected to the display unit for disseminating other types of information such as Special public messages, advertisements, safety slogans etc sent by the Central Control Station from time to time
- l) The display units shall support multi-lingual fonts in English, Hindi and the local language in appropriate colors for easy reading
- m) Access via Internet, SMS and IVRS (IVRS??)
- n) Section C-5. Enterprise Management System (EMS)
  - i. Network Management system
  - ii. Application Performance Management
  - iii. Help Desk Management system
  - iv. Service Level Management
- o) Chapter C-6: There are few statistical reports that you have requested for. These are doable but will need development.

The Provisions of bidding documents shall prevail. The operational concerns need to be addressed by the Bidder.

1.40. C-3-a (AVL-IS) "Exception Recording/ Actions (Over-Speeding, Harsh Acceleration, Harsh Braking, Off-route Detection, Non-Stoppage at Bus stops, Trip Cancellation)" This feature requires an FMS gateway provision as a cheap and simplest option else, this has to be managed by actual sensors which could make the system very complex. Kindly elucidate on your expected methodology to accomplish this.

Over-Speeding, Harsh Acceleration, Harsh Braking, Off-route Detection, Non-Stoppage at Bus stops, Trip Cancellation etc are the functional requirements of KSRTC, which the Bidder is free to implement any strategy which in its opinion would meet the requirements of KSRTC.

1.41. (2)- Clause B-1-a (1) under objectives for "KSRTC Bus Drivers": This is mentioned as "Use real time voice communication to ensure that the drivers are constantly informed". From clause C-3-a, F-Req 35 (9); it is observed that you are looking at 2-way voice communication between the driver of the vehicle and the central control room. We are currently in development phase for this system, but subsequently, we would be ready for an additional feature of group communication that would utilize the mobile bandwidths only instead of separate radio bandwidth

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that may involve de-licensing and security issues which would subsequently build upon costs for the operator.

The provisions of bidding documents shall prevail. The Bidder may implement it in a manner that meets the requirements

1.42. Communication Sub-System- VMU should be compatible for interfacing with other devices such as Display Controller over RS232 interface. What is the protocol over RS232?

Interface and protocol can be any industry specific one. No proprietary interfaces / protocol shall be used

1.43.

1. Could the audio announcement be produced by another device or does it necessarily have to be integrated in the display?
2. Could the announcement device be integrated in the Vehicle Mount Unit (VMU)?
3. Could the audio port with amplifier be integrated in the VMU?

The choice of the design solution is left to the Bidder ensuring that it meets the basic requirements mentioned in the BIDDING DOCUMENTS

1.44. Remote desktop sharing in Service desk tool should be agent-less & all activity should be automatically logged into the service desk ticket. Is the understanding correct

Yes

1.45. Since the RFP details about storing ad files, whether content management is in the scope of the project?

Refer Question no. 1.36.

1.46. The streamlining of advertisements into the display screens inside the buses.

Refer Question no. 1.36.

1.47. F-Req42. 1. Ability to locate a bus at a given time in its track to estimate its arrival/departure time at the next destination, based on traffic density, distance, speed, bus occupancy, run-time information from the previous bus arrival time for the same location etc; the accuracy of the prediction time should not vary more than +- 2 minutes. 6. Facility to generate information such as travel time estimation, average time at bus stop v.number of passengers boarding at each point, density of passenger traffic at different bus stops enroute, passenger traffic at different location, alerts on exceptions, and logging of the journey details of the bus for each trip. Please explain the expectation of estimating arrival/departure time "based on traffic density". Does it mean calculation based on realtime bus speed or does it mean predicting and considering near future congestion levels ahead of the bus to calculate the arrival time at next station. Please provide details on bus occupancy tracking. Is it part of the scope and whether installing sensors / tools to count passengers is part of the scope. How will the number of passengers boarding,

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density of passenger traffic be captured. Is it by sale of tickets. Is the logging of journey details related to passenger counts? Is the expectation to upload ETM machine data in real time. This can be realtime only once the machine is connected to the GPRS device. Please explain the expectation.

This needs to be calculated based the average speed of the bus, the distance it takes from point to point, any alerts from the traffic police on traffic congestion on a route. The traffic congestion alerts is to be evolved by the Bidder in consultation with traffic police at Mysore. As regards the bus occupancy tracking or seat availability tracking, the plan is to integrate the information available from the e-Ticketing machine currently being used to transmit the tickets issued details to the Central Control station through the VMU. At present KSRTC is not proposing any automatic passenger counting system inside the buses. The data upload need to happen at certain scheduled stages that needs to be worked out in consultation with KSRTC.

1.48. There will be third-party streaming servers used to stream advertisements onto the buses / bus stops etc. The ad files will be stored in the content management system.

- a. Do you want AVL-IS to be capable of receiving advertisement contents from the Server?
- b. If yes what would be the media?
- c. Will the advt files be txt display (bitmap) compatible with LED or graphical display for LCD?

The Bidder to work out the details as part of the technical response

1.49. Page 147 Content Management Services

Please elaborate how KSRTC envisages the streaming of audio / video content to In Vehicle Display board. Does streaming of audio / video content mean that the data will be uploaded once in a day and play it on the LED / LCD Display boards?

The content could be text, Graphics and Video. The contents will be uploaded through the GPRS network and later upgraded to any other higher bandwidth facilities becoming available at Mysore. The timing of data uploading may be suggested by Bidder, as the Bidder will have to decide on the technical design of the solution.

1.50. F-Req56Content can include – Transportation Information (Bus schedules, alerts, etc), safety information, localized community information, GPS driven localized data, advertising (still images, animation, video), tourist information. Is planning, production, management, scheduling, delivery, storage and archival of content part of the scope. Will this be done by KSRTC or the vendor? What will be vendor's responsibility? Who will do the billing, recovery and reporting process. Please clarify.

This will be done by the IV during the 3 year operational period. However in respect of the content development such as advertisements, KSRTC will work with the clients / Ad agencies and make available the content to the Bidder. In respect of the other data the Bidder will have to work closely with KSRTC in compiling the information. It will be the Bidder's responsibility for content management during the 3 years initial contract period

1.51. Are the existing bus routes to be maintained or as part of the scope are we to develop and maintain new optimized routes.

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As of now, the existing bus routes to be maintained as part of the scope.

1.52. Communication Sub-System- VMU should be compatible for interfacing with other devices such as Display Controller over RS232 interface. What is the protocol over RS232?

Interface and protocol can be any industry specific one. No proprietary interfaces / protocol shall be used.

1.53. The data shall at any point in time be easy to update with auto update facility and provide for quick click access to list of values to prevent errors in data entry during manual operation - Requirement not clear? What does Auto-Update mean?

Auto update implies that data capture should occur only once and the related data should get reflected in the many modules the system may contain.

1.54. "It is expected to recover the total project cost within a span of three years. Additional revenue sources such as Advertising on the Bus body, inside the buses, Online Advertising, Subscriptions have also been identified."

Does it imply that the vendor has to arrange to recover the project cost through advertisement?

With the introduction of system, load factor is expected to go up with people shifting from personalized vehicles to public transport. Bidders may propose their plans with KSRTC in achieving this requirement.

1.55. Page 135, first line F\_req 69. This point is mentioned under Information display in Vehicle, this means, passenger is already in the bus. F\_req says info to passengers on pre trip info. To choose their mode and route of travel. Please clarify.

This relates to information available in-vehicle in terms of the time to reach the destination point, the distance to be covered etc., which would help the passenger to shift to other travel options for instance if time is a constraint.

1.56. Functional Requirement - Provides service to Commuters

Not Clear what service is being referred to in this point. What are the services to provide to Commuters?

This is a primarily an information service catering to all information requirements relating to travel. What this implies is the information service to customers through display systems at various locations. The information services relate to ETA/ETD, route information, etc

1.57. Passenger Information at bus stop - Can we change the Sealing norm from IP65 to IP54?

Requirement is IP65. An IP65 rated product will be fully protected against dust and airborne particles whilst also be protected against water jets which would allow the machine to be washed down, while an IP54 rating offers dust protection (but not total) and protects against splashing of water but not wash-down. The Bidder may

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chose the best option given the requirements of protection from dust, airborne particles, water jets.

1.58. Communication sub system-VMU- VMU should have at least IP54 or higher protection classification according to IEC 60529. IP54 is not splash proof as is the requirement mentioned in the same section head under sub point b. It is suggested that VMU should have at least IP 65 or higher protection class

Refer Question no. 1.57

1.59. What would be the volume of data transferred, along with its importance & extent?

It is for the Bidder to estimate and factor this into their design

1.60. Control Server- Do the bus drivers generate B-call and E-call? Any other source of information?

Yes.

1.61. The BUS STOP DISPLAYS will periodically query the CS through HTTP request. Bus Stop display will not have the logic for pulling the data, instead it will be push from CCS to LED board. That is the way the load is balanced from central server. Please comment

The data will be streamed from the CCS.

1.62. Bus Equipment - Which language should be used for driver interfaces (routes, alerts, messages...)?

The Language requirements are clearly indicated in the BIDDING DOCUMENTS – English and Kannada

1.63. Why the MAF is required for software used in the control center like Operating system, network system etc?

MAF is not indicated anywhere

1.64. Instant access to information related to bus schedules, ETA, ETD, annunciating bus stop names, fare details, etc at bus stops, bus terminals and within the buses and through SMS, Internet and IVRS. Bus-Stop Display will have the audio output & text-to-audio conversion mechanism?

Please revisit the requirements. Voice announcement will be in-vehicle.

1.65. Use real time voice communication to ensure that the drivers are constantly informed. This will affect the data communication (10 secs)

It is expected that voice communication will be used as required when the control station needs to communicate with the driver. Data communication will primarily be the focus

## Clarifications to the queries raised by the bidders

1.66. Bus Equipment - Lumiplan ITS can be connected to the bus EXTERNAL boards to avoid any error by the bus driver and control the information shown. In the tender document, the system controls only the bus INTERNAL boards. Do we have to interface our proposed System with some existing external boards? How many and which model? Do they have RS232 or RS485 interfaces?

It is for Bidder to offer the best solution as perceived by them.

1.67. Page 134, F\_req 66. How the data files (media, video, public messages, safety slogans) will be loaded in the controller in the bus. What is the expectation?

The data will be received by the VMU and displayed in the buses.

1.68. Is it OK, it is done by using USB Pen drive. Because video files are huge & cannot be transmitted through GPRS.

Initially only the kind of data that can be sent through the GPRS network requires to be sent. In course of time as new communication infrastructure becomes available, such infrastructure will be used to display heavy graphic content.

1.69. Vehicle Mounted Unit (VMU) - As dust causes performance degradation, why should not the casings be IP 65 instead IP 54?

Refer Question no. 1.57

1.70. Solution Architecture - Content Management Services - Manages all types of digitized content including HTML and XML Web content, document images, electronic office documents, printed output, audio and video. It supports replication to store and manage objects in multiple locations. It supports Linux and other Operating Systems. This will be used to store the audio/video content for streaming advertisements in buses/bus terminals/bus depots for KSRTC Mysore. Is there a requirement for streaming of advertisements in buses? Please clarify. This would change the display requirements within buses.

Yes including streaming advertisements as clearly indicated in the requirement

1.71. The Purchaser may duplicate and use the software on different equipment, such as for back-ups, additional computers, replacements, upgraded units. Additional license are required to install software on addition machine? Please clarify the no of license required for additional computers.

Bidder to study about the systems required for ITS project at Mysore and arrange for the Licenses accordingly.

1.72. The warranty period for hardware such as Servers and Workstations, vehicle mounted units -GPS and Display units inside the vehicle and at bus terminals and bus stops will be for thirty-six (36) months, As no OEM provide the warranty for 36 month. it should be only one year warranty then after that AMC.

**Bidders' understanding that no OEM provides the warranty for 36 months is not correct.** Provisions of bidding documents shall prevail.

1.73. Who will manage the media server for providing the content for video?

## Clarifications to the queries raised by the bidders

KSRTC will arrange for the content creation which needs to be uploaded to the content repository.

1.74. How buses are identified (we need to understand the amount of bites to be used in sending identification numbers via ITS)

Bidder to study and propose the solutions to meet the functional requirements.

1.75. Communication Sub System, a) Communication and Data Exchange - The connectivity between CCR server and Bus station display is depicted through WiMax. The connectivity between CCR server and Bus station display is depicted through WiMax, we suggest the department keep this option open wherein a wireless GPRS or 3G based connectivity can be provided.

This is the expectation of KSRTC

1.76. How are datasets diverged into the different locations?

Bidder to design appropriately for streaming data to different locations.

## 2. Display Boards:

2.1 The external boards in the buses are not included in the tender. Our solutions links those board to the Information System to facilitate the driver work: the driver has just one interface to enter the route when he starts and when he stops. The GPS checks if the information is valid (depending on the GPS position the system can alert if the route differs from the information entered by the driver and correct the external board). So this solution can (i) simplify the driver interface (ii) avoid any error on external boards.

In respect of buses which are already having external display boards (150), there will be a need to interface the VMU to be able to display appropriate information on the external display boards. In respect of those buses which do not have the facility for mounting the external display boards, the requirement is only to provide information display panels inside the vehicle.

The Bidder is free to implement any technical features that are beyond the minimum functional requirements specified in the technical section.

2.2. Do all buses already have the "Outer LED Signage"? and its controller? (which is used by the driver to select to display the route no. on the bus outside)

In respect of buses which are already having external display boards (150), there will be a need to Interface the VMU to be able to display appropriate information on the external display boards. In respect of those buses which do not have the facility for mounting the external display boards, the requirement is only to provide information display panels inside the vehicle.

2.3. As per Tender requirement, Supplier to provide In-Bus PIS with both Visual and Audio enabled next stop information. This requires 4 things

1. Display Control Unit
2. In-Bus Display Panel
3. In-Bus Voice Announcement System
4. Integration between GPRS enabled Vehicle Mounted Unit and Display Control Unit

As per our understanding, most of the KSRTC Mysore buses are already fitted with Display Control Units and few buses have in-bus displays too. The same Display Control Unit is also used for bus front and rear LED displays.

Please confirm if existing Display Control Unit are to be re-used and integrated with the Supplier's VMU. In this case information is required on how many buses are already equipped with Display Control Unit. Otherwise, please confirm if buses to be fitted with LCD screens (and of what size) and existing Display Control Unit and In-Bus LED display will not be re-used.

Please clarify which item to be quoted and in what quantity

In respect of buses which are already having external display boards (150), there will be a need to interface the VMU to be able to display appropriate information on

## Clarifications to the queries raised by the bidders

the external display boards. In respect of those buses which do not have the facility for mounting the external display boards, the requirement is only to provide information display panels inside the vehicle. The supplies are to be as mentioned in BIDDING document.

The requirement is to fit all the buses indicated in the BIDDING DOCUMENTS with the display boards as indicated.

2.4. The size for LED/ LCD displays is mentioned differently at different places in tender document

Each of the Bus Stops will be fitted with electronic display systems measuring approximately 20 x 100 cms (minimum size)

Brief details of LED/ LCD Display unit is furnished below (LED/ LCD Display Panel- 2450 mm (W) X" 1525 mm (H))

The size of the destination board can be 160 x 19 mm

Bus shelters: 160 mm X 1000 mm (59 Nos)

Bus Terminal Platforms (45 nos.) and for certain bus shelters (63 nos): 800 mm X 1200 mm

Bus Terminals (6 nos): 2500 mm X 1500 mm; 20 Nos.- 1500 mm X 1800 mm

We request you to confirm which type of display (LED/LCD) is required at which location

The total number of display boards of different sizes is indicated in the BIDDING DOCUMENTS. The location of installations of display boards is given in bid document. The Bidder is suggested to visit Mysore and understand the location and size requirements.

2.5. How many languages should be supported by the system? In F-Req 67 it is mentioned 3 languages, but in Technical Requirements – only two - English and Kannada

English, Kannda and Hindi.

2.6. Display Language, Is Hindi compulsory? What are the list of languages for PIS system?

The requirements are clearly mentioned, Hindi, English & the local language (Kannada) for information display

2.7. What do you mean by "The LED/LCD unit operates in windows environment"? Could you kindly explain? What do you mean by "LED/LCD based GPS enabled destination board can be fitted in the bus to inform the destination of the bus to the enroute waiting passengers" in the context of bus stop displays for such bus shelters and bus terminal platforms? Do you mean that when a bus approaches the bus stop (Shelter or terminal platform) that the VMU shall send this information to the bus stop display?

This was meant to indicate that they must have the capability for Data exchange with applications running on windows or other environments.

This requirement is to inform the passengers at a bus stop of the destination of the bus approaching the bus stop. This information will be dynamically configurable

## Clarifications to the queries raised by the bidders

based on the route allotted to a bus from start to end point. The data will be transmitted from the Central Control station and not directly from the bus.

2.8. The Purchaser shall be liable for any loss of or damage to any Supplier's Equipment which the Purchaser has authorized to locate within the Purchaser's premises for use in fulfillment of Supplier's obligations under the Contract, except where such loss or damage arises from acts or omissions of the Supplier, its employees, or subcontractors. We understand that the purchaser (KSRTC) is responsible for safety of display boards that can be harmed by any act of sabotage like breaking/stealing of sign/display boards in public places, bus stops and terminals. Please confirm.

Bidder to take necessary steps to ensure safety of all equipments supplied. As per SCC -37 with respect to GCC Clause-37, Bidder shall take necessary steps to cover the goods supplied under insurance.

2.9. Information Display Bus stops - Shall be mounted on a rugged enclosure to withstand harsh environmental conditions and secure from vandalism. Though the vendor will ensure that display units shall be mounted on a rugged enclosure to withstand harsh environmental conditions and secure. KSRTC would assure to make necessary precautions to prevent any vandalism / untoward incidents / malicious intention of public that is being anticipated.

Refer question 2.8.

2.10. "Rugged enclosure", "harsh environmental conditions", "secure from vandalism" are subjective and the definition differs from person to person. Pls provide parameters and specifications.

These are overall requirements; the Bidder needs to study the locations to decide on the right kind of enclosure to ensure that the display panels are protected from heat and rain and against vandalism. KSRTC will not be able to provide the specifications for the enclosures.

2.11. Security of bus stop display /power at bus stop.

Refer question 2.8

2.12. Display system Specification - Provides service to Commuters. This functional requirement is very generic. Is there some specific service expected out of the digital signage system?

This is a primarily an information service catering to all information requirements relating to travel

2.13. Minimum Specifications for LED/ LCD Display Units- The specifications detailed are those of LED display only. There are no specifications for the LCD displays.

LED specification have been given as illustration and Bidder may choose appropriate LCD specifications to meet information display requirements

2.14. Minimum Specifications for LED/ LCD Display Units- Minimum and maximum viewing distance and angle of viewing (where the display screen looks DOT-FREE!). Viewing distance 3-30 meters. Minimum 150°V – 60°H. Most manufacturers don't

## Clarifications to the queries raised by the bidders

go beyond 40°V is 150°V correct? The Horizontal and Vertical viewing angles seem to be interchanged.

60°V – 150°H.

2.15. Minimum Specifications for LED/ LCD Display Units- The specifications detailed are those of LED display only. There are no specifications for the LCD displays.

LED specification have been given as illustration and Bidder may choose appropriate LCD specifications to meet information display requirements.

2.16. Minimum Specifications for LED/ LCD Display Units- Resolution in terms of number of pixels (X by Y) and the pitch between pixels for the display character Minimum of 32 X 32 pixels with a pitch of 30 mm per character. At 30 mm the displays will not be 'dot free'. A finer resolution would be 8-10 mm. The 2" display is about 50mm – we cannot accommodate 32 pixels in this small size – the best resolution will be 7 pixels. Please clarify the requirement for displays.

Pitch can be 7-10 mm. Bidder may design the solution with the best resolution for easy reading, selecting from the available choices in the market.

2.17. Minimum Specifications for LED/ LCD Display Units- Resolution in terms of number of pixels (X by Y) and the pitch between pixels for the display character Minimum of 32 X 32 pixels with a pitch of 30 mm per character. At 30 mm the displays will not be 'dot free'. A finer resolution would be 8-10 mm. The 2" display is about 50mm – we cannot accommodate 32 pixels in this small size – the best resolution will be 7 pixels. Please clarify the requirement for displays.

Refer question 2.16.

2.18. Passenger Information at bus stop - 30 mm pitch is a very high end specification

Refer question 2.16.

2.19. Minimum Specifications for LED/ LCD Display Units- Display colour - Multi Colour. Can we assume that the display units need to support the colors as in Table 1: Color Coded Information Display of the RFP?

Display Units to support the multi colour as specified in the specifications for LED/LCD Display units. The Color Coded Information Display of the BIDDING DOCUMENTS explains the colours to be displayed on screen in Central Control Station.

2.20. DSS will keep records of all playback statistics and generate customer bills accordingly. Is the DSS (Digital Signage system) expected to manage billing to the media customers? Please detail how the payment receipt, settlement and dispute will be managed? Is there a requirement to integrate the billing process with existing billing systems in KSRTC? If yes, please provide details on the interfaces available.

## Clarifications to the queries raised by the bidders

The billing and dispute issues will be outside the DSS. DSS will provide data relating time utilized, number of display units opted etc. This is a primarily an information service catering to all information requirements relating to travel.

2.21. Need confirmation on In bus display Size 220 x 820 x 150 , Is it correct?

While these sizes are approximate, the Bidder will have to study the actual requirements in consultation with the KSRTC officials. The size of In bus display size can at least be 800 mm x 100 mm.

2.22. DSS will keep records of all playback statistics and generate customer bills accordingly. Is the DSS (Digital Signage system) expected to manage billing to the media customers? Please detail how the payment receipt, settlement and dispute will be managed? Is there a requirement to integrate the billing process with existing billing systems in KSRTC? If yes, please provide details on the interfaces available.

Refer question 2.20

2.23. DSS will keep records of all playback statistics and generate customer bills accordingly – Please Clarify on this Requirement.

The central control station will have records of advertisements displayed, duration and the number of dates and generation of bills through the Content management system

2.24. DSS will keep records of all playback statistics and generate customer bills accordingly. For what period the records r to be maintained ? Any MIS ? Any billing ?

The records will have to be maintained for a minimum of three years

2.25. Digital Signage –

What type of content is to be shown in the buses and how will the content be uploaded?

The content could be text, Graphics and Video. The contents will be uploaded through the GPRS network and later upgraded to any other higher bandwidth facilities becoming available at Mysore

2.26. Digital Signage –

Who is responsible for the advertisement fulfillment?

There is a mention of online advertisement and revenue via subscriptions, Please detail out on scope of this tender in this context

Advertisements and the revenue management will be the decision points of KSRTC. The requirement is only to provide the needed infrastructure on which KSRTC could be managing the advertisements through the content management system and provide support to KSRTC staff during the initial operational period of three years.

2.27. Digital Signage –

## Clarifications to the queries raised by the bidders

How will digital signage content be submitted by advertisers etc, will it be via portal and Will advertisers submit the ad content in a digital format?

The digital content media will be managed by KSRTC and will be made available to the Content Management system in digital format. The advertisements will not be through the Portal as KSRTC will have the rights to examine and approve before uploading the ad content.

2.28. Digital Signage –

Will the advertisers be able to view the play back reports?

This feature will be welcome

2.29. Digital Signage –

Who will be responsible for activities like scheduling the content and designing the layout of the digital signage screens?

Bidder will be responsible during the initial operational period of three years with the prior approval from the KSRTC.

2.30. Who will supply DSS (digital signage system)?, Who will manage it? Is it part of scope?

Yes. It is part of the scope

2.31. Digital Signage –

What is the frequency of content refresh on the digital signage screens

This will be based on the policies of KSRTC and needs to be configurable based on the requirements of KSRTC

2.32. Digital Signage –

What would be the connectivity for the digital signage

The communication sub-system detailed in the BIDDING DOCUMENTS will be the required infrastructure for connectivity

2.33. Digital Signage-

Why do we require to stream the content, in digital signage the content is distributed to the local machine hosting the digital signage screen and played offline. Is there any special requirement for streaming content?

This is to provide a centralized content management repository and to stream the advertisement content from the CCS

2.34. Digital Signage-

As per diagram, the digital signage requirement with advertisement requirements mentioned is only required at bus station display, Is our assumption correct? What is the number of digital signage which are required and where?

## Clarifications to the queries raised by the bidders

The quantitative requirements are detailed in the BIDDING DOCUMENTS

### 2.35. Digital Signage-

There are no details in the attachment section of "T-Req 77 Based on the frequency of trips at each of the bus stops, the type of display boards required are detailed under the section - Attachments."

Please Confirm

These are detailed under System Inventory Table

### 2.36. Will it be necessary to make mechanical modifications (cut metal, make holes, etc) to bus stops to make the panels fit into them?

Mounting of the display panels will be the responsibility of the Bidder and will have to be done in consultation with KSRTC

### 2.37. Will it be necessary to supply poles on which panels will be installed?

Yes. Bidder to arrange for the same. Your site visit and survey will help you understand the requirements more clearly.

### 2.38. Would it not be appropriate that the Project review committee / KSRTC decides a place in side of bus for fixing the display board and intimate vendors?

It is suggested that the bidders may visit Mysore, see the buses and propose the place for fitment of display board to achieve the functional requirements.

### 2.39. In the places where Bus shelter is not there, can we have the guidelines for the installation of the sign board?

Signboards have to be installed only at bus shelters.

### 2.40. Color based information LED display (page 129 & 130). Can it be single colored board? Or Can it be LCD boards?

The color specifications have to be met.

### 2.41. What is the expectation on digital signage system? Please elaborate the relation between Digital signage and LED display boards at stops/stations/terminus etc

The digital signage system is to provide information to passengers. These are the display boards required to display text and graphics.

### 2.42. Page 133, Freq 53. What are Digital Signage real time alerts? What type of alerts and is it only display in the board or something else. It is inside the bus or at bus stops/stations?

## Clarifications to the queries raised by the bidders

Any alert must be configurable and dispatched to the display boards by the Central Control Station.

2.43. Page 137, Freq 70. 105 bus stop boards are LED boards; LED cannot support the advertisements/video. Is it only text ads or any Images/Video etc? If Video/Images then it is not possible in LED. Please clarify.

LED can support large graphic displays.

2.44. Page 138. C-4-f. Please clarify the relation between display and Cable TV.

This is a requirement linking up travel related information through the local Cable TV operators for wide dissemination and easy information availability of the route details to viewers.

2.45. "Each of the Bus Stops will be fitted with electronic display systems measuring approximately 20 x 100 cms (minimum size)" - Does the dimension (20X100) cms. implies one line? What would be the dimension of four line display? The dimension 20X100 cms contradicts information in the table page 160. Pls advise which dimension to be considered.

The requirements for the number of lines are indicated in the BIDDING DOCUMENTS. The size of the display will therefore need to be appropriate. Indicative sizes are provided in the BIDDING DOCUMENTS at Page No. 159.

2.46. Communication Sub System- LED / LCD Display Units We suggest that KSRTC specify whether they would require LED or LCD based display units due to high cost differential in both the options

LED is the minimum requirement. The choice is left to the Bidder

2.47. "Fitment provision will have to be provided in the Bus Stops along with necessary power supply made available." Will KSRTC arrange un-interrupted power at the bus stop?

KSRTC will arrange for power. Bidder to arrange for back up.

2.48. F-Req64. The display system should support remote settings such as display intensity, time synchronization. Is this requirement for display inside buses or for stations? Please explain.

This is for all display systems

2.49. Who will be installing VMU and display systems in buses and on stops – NIS, or KSRTC personnel?

Bidder to install the VMU and display systems in buses, Bus stations and Bus stops in consultation with KSRTC

2.50. Please clarify where the LCD, Plasma panels will be installed Inside the bus or bus stops or bus terminals.

## Clarifications to the queries raised by the bidders

The actual location of the display panels will be indicated by KSRTC during implementation

2.51. Display System Standard Requirements- Fitment provision will have to be provided in the Bus Stops along with necessary power supply made available. The display unit will source power from here for its operation. Fitment provision along with necessary power supply be made available by KSRTC. The display unit will source power from here for its operation.

KSRTC will arrange to provide power at bus stops and terminals. Bidder to arrange for getting required connection from the nearest point to the place of installations. Bidder to make arrangements for making mechanical modifications to bus stops to make the panels fit into them.

2.52. What is the connectivity between the In-vehicle Display boards and Content Management Server?

The Bidder will have to provide the necessary interfaces to integrate the systems and sub-systems.

2.53. Passenger Information at bus stop - In general, the specifications of the bus stops boards are very high. Can it be changed for more cost effectiveness?

The requirement specifications need to be met.

2.54. Passenger Information at bus stop - Is it mandatory to have multi color boards (monochrome is more cost effective)?

Yes.

2.55. Minimum Specifications for LED/ LCD Display Units- Display colour - Multi Colour. Can we assume that the display units need to support the colors as in Table 1: Color Coded Information Display of the RFP?

Display Units to support the multi colour as specified in the specifications for LED/LCD Display units. The Color Coded Information Display of the BIDDING DOCUMENTS explains the colours to be displayed on screen in Central Control Station.

2.56. Please clarify this point, The Digital Signage System (DSS) needs to deliver a centralized signage system selling time and space on signage screens to deliver information and visual marketing material by third parties to market their brands and services.

The requirement is to build the needed infrastructure for KSRTC to be able to stream advertisement from the central control station to the display terminals in bus terminals and over a period of time to all display boards.

2.57. What type of display board is used Inside the Bus? LED / LCD / Plasma Please clarify?

While the display requirements and minimum resolutions are indicated, Bidder may choose an appropriate technology to meet the functional requirements

## Clarifications to the queries raised by the bidders

2.58. DSS will provide a central management to manage signage categories, create content policies, scheduling, costing, etc. - How DSS will be used to create content policies, Kindly Clarify.

The content management system detailed in the Technical specifications will be the source for the content display in the DSS.

2.59. Display system Specification - Provides service to Commuters. This functional requirement is very generic. Is there some specific service expected out of the digital signage system?

This is a primarily an information service catering to all information requirements relating to travel

2.60. Minimum Specifications for LED/ LCD Display Units- Minimum and maximum viewing distance and angle of viewing (where the display screen looks DOT-FREE!). Viewing distance 3-30 meters. Minimum 150°V – 60°H. Most manufacturers don't go beyond 40°V is 150°V correct? The Horizontal and Vertical viewing angles seem to be interchanged.

60°V – 150°H.

2.61. Long Distance Viewing (at least 30 meters) with what font size? What should be minimum Viewing Angle?

Refer question 2.60. The Bidder may decide on the best solution to meet the requirements specified in BIDDING DOCUMENTS for easy reading.

### 3. Help Desk Management:

3.1. Help Desk Management System - The proposed helpdesk solution must support Information Technology Infrastructure Library (ITIL) processes like request management, problem management, configuration management and change order management with out-of-the-box templates for various ITIL service support processes. How is the helpdesk expected to work? Should it act like a help-line for passengers to provide travel information? Or is this a technical support desk for KSRTC staff and drivers?

This will be a complete help desk system catering to help requirements of different stakeholders that could include the commuters, KSRTC staff and drivers.

3.2. Help Desk Management System - The proposed helpdesk solution must support Information Technology Infrastructure Library (ITIL) processes like request management, problem management, configuration management and change order management with out-of-the-box templates for various ITIL service support processes. How is the helpdesk expected to work? Should it act like a help-line for passengers to provide travel information? Or is this a technical support desk for KSRTC staff and drivers?

Refer question 3.1

3.3. What does Configuration management database in Helpdesk mean?

This is with reference to Information Technology Infrastructure Library (ITIL) context which represents the authorized configuration of the significant components of the IT environment.

3.4. Help Desk Management System :-

- No of expected concurrent analyst at any given point of time?

Given the functional requirements, suggested architecture and an estimated list of hardware in the BIDDING DOCUMENTS, it is for the Bidder to design the system components that would meet the specifications and the performance expectations of KSRTC.

3.5. Help Desk Management

- No of Concurrent Analyst required ?
- Is DR required for Helpdesk system?

Refer the specifications under this section. Bidder is free to implement the best solution.

## Clarifications to the queries raised by the bidders

3.6. Do you plan to have a call center at the central room for customer inquiries? The website should allow customers to enter feedbacks in order to understand their needs and adapt your offer. Initial survey would be a plus.

Help Desk Management system is featured in C-5-c of the Technical Section. The Bidder is free to implement any technical features that are beyond the minimum functional requirements specified in the technical section

3.7. Control Server - Do we have to implement a complete call center? During our onsite visit, we observed that the central room is too small to install a call center too. How many operators will work for the call center?

Refer requirements on Help Desk Management Centre. Bidder is expected to plan the operational component of the CCS and factor that as part of the solution. Bidder can offer suggestions to KSRTC in assisting required civil work.

#### **4. Site Inspection & Survey:**

4.1. When can we visit the chosen location at Mysore? Can we also have a talk with the Information System Manager at Mysore (to know more about Traffic information System for example)?

Refer to Clause ITB 8. You may visit Mysore with prior appointment furnishing your company details. The contact person is – Divisional Controller, Mysore City Transport Division, KSRTC.

Address: Office of the Divisional Controller,  
Mysore City Transport Division,  
Nelson Mandela Road, Banni Mantap,  
Mysore – 570 015, Karnataka, India  
Contact No: 7760990750  
Email: [dcmysu@ksrtc.org](mailto:dcmysu@ksrtc.org) and [gefmys@gmail.com](mailto:gefmys@gmail.com)

4.2. Bus Equipment - During our onsite visit, we saw existing bus INTERNAL boards. For more cost effectiveness we can interface our solution with existing boards. How many buses are already equipped with internal boards? Which model and brand of internal boards?

You may collect these details as part of requirements gathering. All the buses need to be equipped with internal boards. The solution design is left to the Bidder.

4.3. What GSM service providers are available in Mysore? What are their coverage in the required region?

bidder to visit Mysore and study the requirements

4.4. The following criteria should be used in choosing the GSM service provider:

Does they round up the billing traffic?

Do they have artificial (forced) disconnecting of the line

Do they have special tariffs for GPRS tracking data transmission

SIM cards should be activated for voice traffic in addition to just GPRS

We need to know the tuning parameters of chosen GSM provider (API, VPN, etc...)

bidder to visit Mysore and study the requirements

4.5. F-Req 9. PIS real-time data shall be made available through LCD / LED Dynamic Message signs (DMS) / SMS/ IVRS / Internet. Does the scope include implementing all the channels namely LCD, LED DMS, SMS, IVRS and Internet. Please specify distinction of scope between LCD and LED DMS.

SMS, IVRS and Internet are necessary. LEDs would be in buses and bus stops. The bus stations may have LED / LCD. KSRTC has indicated the required quantity in the BIDDING DOCUMENTS. The IV needs to study the site details and suggest solutions that would best meet the requirements.

## Clarifications to the queries raised by the bidders

### 4.6. Travelers at the bus stops/stations

"Electronic ticket sale machine and fare collection system."

Is KSRTC planning to set up self service ticket vending machines and expect support from proposed solution?

No. There is no plan for self-service ticket vending machines at this point in time.

4.7. Traffic Information should be integrated to the real time system. In Mysore only few signals have basic traffic sensors. Shouldn't you integrate the study of a more global solution for Traffic information? Same request for Passenger volume information (before to implement e-ticketing).

In the current plan of things, KSRTC expects to meet its vision through the scope and specifications featured in the BIDDING document. Integration with the real-time traffic information is beyond the current scope.

## 5. Software, Hardware, Networking, Security Specification:

5.1. What flexibility we have to alter given hardware and software specifications? (Considering the capacity requirements). The choice of OS (Linux) limits choices for the technologies to be used.

The technical specifications are suggestive of the functional requirements that need to be met. Bidder may consider any appropriate technology that meets the requirements.

### 5.2. E-3. Software Specifications

E-3-a. System Software and System-Management Utilities:

a) Web, Application & Database Servers:

T-Req 38. The OS to be used on all servers must utilize Linux Kernel release 2.6.29-rc6

(<http://www.linux.org/news/2009/02/23/0001.html>), or as equivalent/appropriate

Clarification on C-5-D Service level Management.

Is the above O.S Specification only for System Software and System-Management Utilities where-in EMS (Network/Systems/Database Monitoring) tool can be on Windows or Sun Solaris Spark?

Given the functional requirements, suggested architecture and an illustrative list of OS/Software in the BIDDING, it is for the IV to design the system components that would meet the specifications and the performance expectations of KSRTC.

### 5.3. Clarifications from RFP

E-3. Software Specifications - Clarification:-

E-3-a. System Software and System-Management Utilities:

a) Web, Application & Database Servers:

The OS to be used on all servers must utilize Linux Kernel release 2.6.29-rc6 (<http://www.linux.org/news/2009/02/23/0001.html>), or as

equivalent/appropriate

Clarification on C-5-D Service level Management.

Networking and Communications Software: Protocol, media & equipment, network services, management & administration features, security & failure management features as supported by RedHat Enterprise Linux 5.3 or equivalent

Is the above O.S Specification only for System Software and System-Management Utilities and EMS (Network/Systems/Database Monitoring) tool can be on Windows or Sun Solaris Spark

The design of the solution relating to ITS will be left to the the successful bidder and the technical specifications indicated in the BIDDING are illustrative of the minimal levels.

**5.4. Solution Architecture** - This is in reference to the Figure 5: ITS Schematic Model which makes reference to specific technology stack (E.g. Linux, Tomcat etc ).

## Clarifications to the queries raised by the bidders

This will be based on the solution design of the bidder. The minimal requirements are as per the specifications in the BIDDING document.

### **Modification Required:**

We understand that the reference made in the Figure 5: ITS Schematic Model is only indicative in nature. However, as there are only few enterprise technology players in the industry, we would kindly request you to include - Windows Server 2008 as one of the indicative Operating System and IIS as indicative Web Server. This will help in ensuring the prospective bidders that it is a level playing field and will enable the bidder to opt for the best industry standard technology stack for the proposed solution.

The design of the solution relating to ITS will be left to the the successful bidder and the technical specifications indicated in the bidding documents are illustrative of the minimal levels.

### **Software Specifications**

This is in reference to the following clause- The OS to be used on all servers must utilize Linux Kernel release 2.6.29-rc6 (<http://www.linux.org/news/2009/02/23/0001.html>), or as equivalent/appropriate

Application Architecture: Preferably J2EE based 3-tier architecture

### **Modification Required:**

We seek a modification to the OS specification which endorses Linux based operating system. Kindly include Windows Server 2008 as an option along with Linux. Windows Server is an enterprise class Operating system, which has provided the development and deployment of mission critical and citizen facing applications across the enterprise space in the industry. And also prestigious projects of the state like Bhoomi, Bangalore ONE etc. run of Windows OS.

Keeping the technology stack open will enable the prospective bidders to choose the best of the technology stack and ensuring them to be competitive and economic in the bids. This will definitely help the organization for getting the best bids and successful roll out of the project.

The design of the solution relating to ITS will be left to the successful bidder and the technical specifications indicated in the BIDDING DOCUMENTS are illustrative of the minimal levels.

5.5. System Software & System Management- The OS to be used on all servers must utilize Linux Kernel release 2.6.29-rc6 Application Architecture: Preferably J2EE based 3 - tier architecture The specification are limiting the solution to a Linux Based OS environment with a Java based application. We suggest the scoping should be environment independent.

The design of the solution relating to ITS will be left to the successful bidder and the technical specifications indicated in the BIDDING DOCUMENTS are illustrative of the minimal levels.

5.6. Page 151. E-3-a. System Software and System-Management Utilities: a) Web, Application & Database Servers:

We kindly request that Windows Server (for servers) and Windows 7 (for workstations) are also acceptable as operating systems.

## Clarifications to the queries raised by the bidders

As per the BIDDING DOCUMENTS, the OS to be used on all servers must utilize Linux Kernel release 2.6.29-rc6 or as equivalent/appropriate. This does not preclude Windows Servers or Windows 7 as part of the operating system.

### 5.7. Are all the software application based on window platform?

The design of the solution relating to ITS will be left to the successful bidder. The choice of the technology and platform is left to the Bidder.

### 5.8. Can we provide window operating system or Linux is must? Do you have some existing setup which run on Red-hat Enterprise linux, please clarify

The choice of technology and platform including various software components is left to the Bidder, but ensuring that the minimal requirements as indicated in the BIDDING DOCUMENTS by some of the solutions are available.

### 5.9. Network, Systems Database Monitoring:-

- · Total # of Network Devices to be monitored (Routers, Switches)
- · Total # Servers to be monitored
- · Operating system of the Servers to be monitored
- · Total # of Databases to be monitored
- · The Database type and total # of CPU's on the database Servers

Given the functional requirements, suggested architecture and an estimated list of hardware in the BIDDING DOCUMENTS, it is for the Bidder to design the system components that would meet the specifications and the performance expectations of KSRTC.

### 5.10. Application Performance Monitoring :-

- How many application servers would be deployed?
- What is the CPU count on each of the above application servers?
- How many cores/CPU?
- Are these applications JAVA/.Net? (Doesn't influence the count of licenses)?
- Does the customer want to measure the end-user experience?

Given the functional requirements, suggested architecture and an estimated list of hardware in the BIDDING DOCUMENTS, it is for the IV to design the system components that would meet the specifications and the performance expectations of KSRTC.

### 5.11. Identify specific areas of existing GPRS/GSM blackout zones and Police critical locations in Mysore and enhance number of BTS towers and their capacities, if required.

The GPRS/GSM data connectivity would be seamless while moving from one BTS site to other BTS site in Mysore. This requirement needs to be taken up with the GSM/GPRS Service provider and can be effectively dealt with if KSRTC instructs the GSM Service provider to do the same.

This will be the responsibility of Bidder.

### 5.12. Can be installed on multiple operating systems and Support latest J2EE Standards. Is that Unix preferred and that's why J2EE asked for ? If so , please site reason

The requirement is illustrative. Bidder may decide on what they know best

## Clarifications to the queries raised by the bidders

5.13. Table 12 : Servers & Accessories Requirements. Is this quantity & specifications defined? What is the justification for this - is there any load/data size growth/processing power etc taken into consideration? If so, please share the same for solution purpose only.

This is based on approximate estimates by KSRTC internally. Bidder may do their own analysis and incorporate the requirements into their technical proposal.

5.14. with maximum of 2 enabled chips, 8 enabled cores, with maximum of 4 cores per chip & 1 thread per core. All servers are mentioned as Dual Core processors (table 12), then why 4 core is asked for?

This is as per SPEC performance standards. Bidder may choose the appropriate architecture

5.15. Application Architecture: Preferably J2EE based 3-tier architecture? Can we use .Net architecture?

Yes. The Bidder is free to implement any appropriate technology that meets the requirements.

5.16. The Architecture is very specific; can more cost effective and reliable alternatives be provided?

The design of the solution relating to ITS will be left to the successful bidder and the technical specifications indicated in the BIDDING DOCUMENTS are illustrative of the minimal levels.

5.17. Backup

The BIDDING DOCUMENTS talks about backup and restore at many places, but there are specific specs for the same. If required separately. Need to know

- How many Servers
- How many DB Servers & What DB
- How many App Server & what App
- SAN backup or LAN backup
- Base operating system of all Servers

This will be based on the solution design of the bidder. The minimal requirements are as per the specifications in the BIDDING DOCUMENTS document.

5.18. Security Management

Access control

- User and usage administration: The system must have the provision & infrastructure (soft/hard as required) to support & utilize role-based access mechanism

To be confirmed- (Number of Server to be protected? 17)

Siteminder

- Number of users identities for single sign on access
- Vehicle Tracking System, Passenger Information System or any other system
- Any other system - needed clarification whether web based or host based system?

The security solution must meet the complete security requirements at all levels.

## Clarifications to the queries raised by the bidders

5.19. Security Services – Centralized System Admin & Security with Single Sign-On feature to have unified access to all applications in the complete System (Vehicle Tracking System, Passenger Information System or any other system. This may not be required as all sub-systems/modules may be created as part of unified solution modules and not as different applications (like Google Application: Gmail, G-talk, G-application etc). Kindly provide comments.

The requirement is clear in the bidding document. Bidder may please revisit.

5.20. Centralized Security System (CSS) is required to be provided at the infrastructure layer, application layer and at the user authentication layer and provide controlled access to portal based on privileges stored in CSS. Please elaborate KSRTC expectations.

A high security system IA needs to integrate the appropriate security features in all the layers

5.21. (1). GCC Clause 15.4: Source code is highly proprietary in nature to the supplier and it would be highly impossible for any supplier to share this code for usage or storage purposes as this would lead to OE software manipulations which may subsequently affect the functionality. It is our request to consider this parameter as an optional requirement or suggest alternate methodologies of provisioning of further developments at your end without compromising source codes.

Bidders to comply with the provisions of bidding documents

5.22. Is Additional Software required to enter information such as Bus numbers, routes, driver details, Bus terminals, Display boards etc. after initial load is done? Will the existing information need to be changed thorough software or backend process is ok?

KSRTC expects that the solution proposed is comprehensive and all inclusive that facilitates dynamic updates to any content

5.23. Requirements on system performance when GPS is unavailable (Stop announcements, Vehicle tracking etc)

Bidder is expected to build in alternate solutions to ensure that the system performance is maintained as required.

5.24. Is Real time report customizations required

Apart from the suggestive lists of reports mentioned in the requirements, KSRTC may require customization which must be generated in real-time.

### **5.25. Application Performance Management**

- How many App Servers (Apache, tomcat, JBoss, mysql, IIS) are they using?
- Are there any other app servers other than the ones listed above to be monitored, if so how many?
- How many Cores of CPU's are there on each App Server that needs monitoring?

This will be based on the solution design of the bidder. The minimal requirements are as per the specifications in the bidding document.

## Clarifications to the queries raised by the bidders

5.26. Solution Architecture - Content Management Services - Manages all types of digitized content including HTML and XML Web content, document images, electronic office documents, printed output, audio and video. It supports replication to store and manage objects in multiple locations. It supports Linux and other Operating Systems. This will be used to store the audio/video content for streaming advertisements in buses/bus terminals/bus depots for KSRTC Mysore. Is there a requirement for streaming of advertisements in buses? Please clarify. This would change the display requirements within buses.

Yes including streaming advertisements as clearly indicated in the requirement

5.27. Application Architecture: Preferably J2EE based 3-tier architecture. What about .NET framework? What is this preference for on J2EE?

The requirement is illustrative. Bidder may decide on what they know best

5.28. Can we use Free Software for Software Development?

The Bidder is free to choose the best as they feel fit given the requirements that KSRTC has indicated.

5.29. Who will provide the wimax and where it will be used? Why the wimax is required?

Bidder will have to link up with appropriate service providers and provide the services. WiMAX is required for high-bandwidth transmissions

5.30. The specifications are very specific about the type and quantity of hardware, operating systems and development environment. Can functional alternatives be provided?

The design of the solution relating to ITS will be left to the bidder (the successful bidder) and the technical specifications indicated in the BIDDING DOCUMENTS are illustrative of the minimal levels.

5.31. In page 150, no. of cores/CPU is 2, while in page 151, minimum requested is 4 cores/CPU. Which one to follow?

The minimum number of processors for various servers listed under Server specifications under E-2-a will be as listed in table 12.

5.32. If CPUs have 4 cores each, can we position a single quad-core CPU instead of 2 dual-core CPUs?

Yes

5.33. In page 151, it is requested all servers are quad CPU capable, but in page 150, only few of the servers are requested to be quad CPU capable. Which one to follow?

## Clarifications to the queries raised by the bidders

The minimum number of processors for various servers listed under Server specifications under E-2-a will be as listed in table 12.

5.34. If CPUs have 4 cores each, can we position dual CPU capable server instead of quad CPU capable servers?

Yes. Bidder to plan for the Architecture to meet the functional requirements and scalability

5.35. In page 151, it is requested all servers with minimum 8GB RAM, but in page 150, the memory required is mentioned 16-458GB depending on the server. Which one to follow?

The minimum number of processors for various servers listed under Server specifications under E-2-a will be as listed in table 12.

5.36. In page 151, it is requested all servers with minimum 512GB HDD, but in page 150, the HDD required is mentioned 2x146GB on the server. Which one to follow?

The minimum number of processors for various servers listed under Server specifications under E-2-a will be as listed in table 12.

5.37. What is the CPU clock speed required?

Bidder to plan for the Architecture to meet the functional requirements and scalability

5.38. Bidder whether as a single Bidder or as a partner in a Joint Venture, cannot be a Subcontractor in other bids, except for the supply of commercially available hardware or software by the firm. Please elaborate "commercially available hardware or software". What all software / hardware pertaining to this tender scope are likely to fall in the category.

As part of your system design and architecture it is left to bidder to choose those components which are readily available in the market and those that need to be custom built.

5.39. Manufacturer's Authorizations for Information Technologies - except for those technologies which the Bidder itself manufactures - are required for the following types/categories:

1. Automatic vehicle tracking (AVL) system
2. Hardware planned for the Central Control Station such as the Servers, network switches, routers, storage devices
3. Software systems planned for the Central Control Station such as Operating / network systems / databases, etc
4. GPS software application that are proposed to be used off-the-shelf
5. Hardware planned for display inside/outside the vehicles and bus stops / bus terminals

In case of servers and system softwares, do we need authorization directly from the company or dealers would suffice? For Example: In case of IBM server and Red Hat Linux, do we require these authorizations directly from IBM and Red Hat?

Authorization from manufacturer is required.

## 6. GIS Software:

6.1. Any specific preference for GIS software? Dependency on Google Maps is ok?

GIS software indicated (in Table 23 under Section H) is only illustrative. Bidder is free to choose any that meets the functional requirements.

6.2. It should also support import or export of services to facilitate commuters in looking up for services directly in Google maps. Means the application needs to be integrated with both Google and Own GIS? Is it free or Commercial licence?

Yes, the application needs to be integrated. The choice of GIS would be that of the Bidder.

6.3. ESRI ArcIMS / Map Extreme/ Google Maps. These three are not comparable map applications. Arc IMS is high cost high feature rich full GIS Map application server. Mapextreme is a commercially available application with limited features and Google Map is not freely downloadable but Third party integrable map view software(web). What do you require in terms of your functionality since there is no full fledged description of GIS application in the tender document?

The Bidder is free to choose the best as they feel fit given the requirements that KSRTC has indicated.

6.4. Who will provide Wi-MAX system and coverage guarantees?

Bidder to choose the appropriate service provider and the necessary guarantees.

6.5. How many routes are approximately to be geo-coded? (Not bus stops)

The Bidder will need to survey the routes as part of its implementation.

6.6. Why do you want to import the AVL-IS data on Google Maps? The Google Maps are not free for commercial purpose and the license cost is very high.

The choice is left to the Bidder.

6.7. Page 168, Table 23, GIS Software and Components (Entire Mysore City) "Google Maps or a Local Map Server such as MapXtreme"

Q: Can we consider ArcIMS or UMN Map Server as the Local Map Server instead of MapXtreme?

The Bidder is free to choose the best as they feel fit given the requirements that KSRTC has indicated.

6.8. The GIS requirement (Map Xtreme Java version) – is it obligatory or we can suggest our own GIS?

## Clarifications to the queries raised by the bidders

The Bidder is free to choose the best as they feel fit given the requirements that KSRTC has indicated.

### 6.9. GIS Software & Components - What would be the scale of Maps? What are the layers for these map data?

The Bidder needs to come up with the appropriate technical specifications to decide on the scale / layers of the map depending on the functional requirements indicated in the BIDDING DOCUMENTS.

6.10. Page 129 (Paragraph F Req 12) -- "The geographical information system (GIS) applications shall enable display of the position of vehicles on a detailed digitized road map of Mysore and linked with the communication control and reporting applications."

Q: Will KSRTC provide the GIS data or the vendor to provide. In case the vendor has to provide the GIS data, please provide the specification of GIS data, e.g., the Scale of GIS, Area of GIS, minimum road width that must be there in the GIS data, the attributes required in the GIS data.

Bidder to arrange for the GIS map. The Bidder needs to come up with the appropriate technical specifications to decide on the scale / layers of the map depending on the functional requirements indicated in the BIDDING DOCUMENTS. Bidder to undertake survey for designing the attributes of GIS map.

### 6.11. Could you clarify more specifically «Integration of application software with GIS road network dataset of Mysore»?

F-Req 12 requires "The geographical information system (GIS) applications shall enable display of the position of vehicles on a detailed digitized road map of Mysore and linked with the communication control and reporting applications; facility for citizens to access and view position / location information on GIS maps near real time through Web interface with historic data displayed on maps. Therefore the Passenger Information / AVL Systems should incorporate the road / route network details on a map to be viewed at the CCS and by commuters on the Internet

### 6.12. Could you clarify specifically the meaning of «Geo fencing of routes by physical survey and integration with the Geo Fencing module»?

Geo-fencing is required to identify the routes the buses are scheduled to take and in case of any deviation, the system will raise alert to the CCS of such deviations.

6.13. Page 132 (Paragraph F Req 42, Pt. 7) -- "Facility for citizens to access and view position / location information on GIS maps near real time through Web interface with historic data displayed on maps"

Q: How many concurrent users required for the viewing of position location?

Given the functional requirements, suggested architecture and an estimated list of hardware in the BIDDING DOCUMENTS, it is for the bidder to design the system components that would meet the specifications and the performance expectations of KSRTC.

## Clarifications to the queries raised by the bidders

6.14. It should also support import or export of services to facilitate commuters in looking up for services directly in Google maps. An illustrative example of AVL-IS is indicated alongside: - No Illustrations available

This refers to the figure 2 in the Technical specifications, which gives a broad indication of the components involved in AVL-IS. The requirement is to provide information services on the web in terms of tracking the location of buses laid out on an appropriate underlying map of Mysore city covering the road network.

6.15. F-Req42. 7. Facility for citizens to access and view position / location information on GIS maps near real time through Web interface with historic data displayed on maps. Please clarify what historic data is this referring to?

The historical data relates to the tourist spots in Mysore of historical importance.

6.16. F-Req42. 13. It should also support import or export of services to facilitate commuters in looking up for services directly in Google maps. An illustrative example of AVL-IS is indicated alongside: Please explain if the expectation is to let commuters to see the services on KSRTC portal (using Google maps or any other GIS service) or at Google Maps web site.

Refer question 6.14. The information must be available on the KSRTC portal.

6.17. Facility for citizens to access and view position / location information on GIS maps near real time through Web interface with historic data displayed on maps. Data for what period should be stored? What are the different kind of data to be accessed by Citizens?

All matters that would be interest to the citizens relating to public transportation in Mysore. While real-time data would relate the daily bus routes and schedules, historic data may have to be stored for a minimum of one year. The routes and schedules will have to be available on line

6.18. F-Req33. Precise geographical position (Longitude / latitude coordinates) of each bus stop and the bus station needs to be identified through a survey along with details of tourist centres / places of attraction / monuments etc along the route, precise distances between the bus stops in each route. Will KSRTC provide the audio/video content to be played?

It will be the Bidder's responsibility to collect the required data while doing the route survey and KSRTC will provide required support

6.19. Messages from the control centre to the vehicles shall be both, predefined or freeform - Need more clarity on F-Req 33. Precise geographical position (Longitude / latitude coordinates) of each bus stop and the bus station needs to be identified through a survey along with details of tourist centers / places of attraction / monuments etc along the route, precise distances between the bus stops in each route - GIS Survey, List of what needs to be surveyed will a list be provided, Kindly Clarify. This has to treated as a separate line item?

## Clarifications to the queries raised by the bidders

The information elements indicated in the requirement are illustrative. The Bidder is expected as part of the requirements analysis to factor in the specific data elements that KSRTC would require.

6.20. support tracking of buses that deviate from the scheduled route based on definition of permitted geographic regions of operation – Please Clarify on the definition of permitted geographic regions of operation and how it is envisaged?

This will part of the route survey and allocation of routes and definition of geographic boundaries which the Bidder will have to undertake.

6.21. Web based GIS map with current vehicle location freely available for all citizen or is there any restriction?

Viewing of data relating to vehicle positioning will be available to all stakeholders

6.22. Will we provide you to GIS map? Or Mysore ITS Dept having there own? If yes then please provide the details?

Bidder to arrange for the GIS map. KSRTC is not having the same. GIS maps will be the responsibility of the Bidder

6.23. Will they Provide Digital Map of the Study Area? If no, How to create and what all GIS layers need to incorporate?

The digital map will have to be provided by the Bidder and should provide at the minimum layer a complete road and street layout of Mysore City on which the bus routes will be plotted and tracked. The GIS shall enable display of the position of vehicles on a detailed digitized road map of Mysore (F-Req.12 of Section VI)

6.24. Are you having application software of GIS road network dataset? If yes so please provide the details?

No. Refer question 6.22. Bidder has to arrange for the same.

## 7. GPS:

7.1. The AVS-IS unit shall not only operate outdoors but also be able transmit signals in an environment which may not have a clear view of the sky. What kind of environment (not having a clear view of sky) is in your consideration?

Please visit the site and the routes and determine places where there may be difficulties such as under passes. For instance, the device could store and transmit after a short delay.

7.2. Page 139, Freq 40. AVL should operate and get signal, where there is no clear view of the Sky. Signal acquisition is a problem under concrete roof, tunnels, under bridges etc for any GPS unit. Need to include this deviation also in the document as an exceptional circumstance.

Please visit the site and the routes and determine places where there may be difficulties such as under passes.

7.3. The AVS-IS unit shall not only operate outdoors but also be able transmit signals in an environment which may not have a clear view of the sky - GSM Data?

Refer question 7.1 and 7.2.

7.4. F-Req40. The AVS-IS unit shall not only operate outdoors but also be able transmit signals in an environment which may not have a clear view of the sky. Signal transmission depends upon availability of GPRS service. Will KSRTC ensure availability of GPRS service along all the route? Has KSRTC done a survey on availability of GPRS service along the routes?

It is for the Bidder to take up the survey along the routes. Bidder will have to tie up with the Service provider and based on the survey to be undertaken by the IV, if additional BTS receivers are to be commissioned, the Bidder will take up with the Telecom Service Provider. KSRTC will provide necessary support and assistance in this regard. Signal acquisition could be a problem under concrete roofs, tunnels, under bridges etc for the GPS unit. Please visit the site and the routes and determine places where there may be difficulties such as under passes. However, the device should be able to store and transmit the stored data after a short delay in such circumstances.

7.5. Does the GPS receiver have to be integrated in the VMU or could it be integrated in the antenna?

The choice of the design solution is left to the bidder ensuring that it meets the basic requirements mentioned in the BIDDING DOCUMENTS

7.6. Vehicle Mounted Unit (VMU) - GPS receiver with inbuilt GPS Antenna does not provide steady position accuracy. Should the vendor be allowed to use Active GPS antenna fitted outside the bus?

The Bidder may select the best option

7.7. Is external GPS antenna is also acceptable? As it provide more accuracy.

## Clarifications to the queries raised by the bidders

Bidder may design the solution as appropriate to meet the functional requirements.

7.8. AVL-IS needs to integrate with other sub-systems in the overall ITS solution framework. What would be the scope?

Please study the existing IT infrastructure and in discussion with KSRTC. Bidder may design the interfaces for integration with other sub-system

7.9. If GSM and GPS are built-in there is a chance of data missing, who will take care?

The Bidder has to take care of this.

7.10. Bus Equipment - Will the bus drivers communicate with the passengers by voice messages (specific equipment has to be provided in addition to automatic voice messages driven by GPS information)?

Yes.

7.11. Facility for citizens to access and view position / location information on GIS maps near real time through Web interface with historic data displayed on maps. Providing a map display screen to public for seeing real time location of buses is understood, but please confirm on what historic data is to be made available on map to public?

The historical data relates to the tourist spots in Mysore of historical importance

7.12. Bus Equipment - Is planned to use odometers to supply GPS information when the signal is lost? Are the buses equipped with CAN interfaces? Is there any CAN interface to get harsh breaking information?

Bidder may design appropriate solutions to meet the requirements

## **8. Communication with drivers:**

8.1. How should the real-time alerts for the drivers be provided. Is it audio alert or display alert

Any non-intrusive alert system would be fine. Left to the ingenuity of the Bidder.

8.2. Freq 26 of age 130. Messages (pre defined, free form) from Control Centre to Vehicle. Is any display is required in the vehicle for the driver?

Any non-intrusive alert system would be fine. Left to the ingenuity of the Bidder.

8.3. Why 2 way voice communication is required in the GPS unit, as per Indian law talking on phone while driving is an offence in India.

There are many non-intrusive ways of communicating. KSRTC will support the Bidder in terms of getting needed permissions.

8.4. the message from the driver. What is the expectation?

The expectation is to ensure that the Control centre operators have received the alert by creating a log of data sent, received and acknowledged.

8.5.

"Two-way communication system between the driver and central control station for emergency /incident management"

Could KSRTC please clarify if the communication of emergency situation to be triggered manually by the driver or is there an expectation of any intelligence for auto-detection and communication of emergency situation?

What is envisaged is a manual system. The Bidder is free to provide additional automatic features.

## **9. Power Supply:**

9.1. Bus stops / terminals: please confirm that Purchaser will be responsible of bringing electricity connection right up to the proposed bus stop location, so Supplier will not need to perform civil works (i.e. digging up, laying underground cables, etc) to connect to the power grid.

KSRTC will arrange to provide power at bus stops and terminals. Bidder to arrange for getting required connection from the nearest point to the place of installations.

9.2. Who will provide Bus terminal & stop electrical power

Refer Question No. 9.1

9.3. Details of provision of power supply at the bus stops

Refer Question No. 9.1

9.4. Regarding power connections please clarify Whether KSRTC will provide the electricity & also define the role involved in coordinating with the local agencies like Municipality etc

KSRTC will provide electricity. KSRTC will assist bidder in co-coordinating with local bodies.

## 10. Bus Related:

10.1. In general, we understand that the system implementation without FMS gateway facility and intelligent bus for data recording and transmission will be too complex in terms of hardware installations and involve a lot of cost too. Alternately, our standard solution can be looked into that will meet your expectations up to a certain level.

The Standard Solutions of any one particular company can not be made as the standard functional requirement for KSRTC as it will lead to bias or single source. The Bidder is free to implement any technical features that are beyond the minimum functional requirements specified in the technical section.

10.2 Of those 500 buses, how many different bus models are there?

Ashok Leyland, Tata, Volvo and Swaraj Mazda are the different bus models deployed at Mysore. Front Engine Semi Low Floor, Ordinary, Parisara Vahini, Vestibule, Air duct, Mini Buses are different types of buses. Bidder to visit Mysore and understand the same.

10.3. Please provide the detailed of procured buses for ITS like: Model, manufacturer and specification etc.

Refer Question No. 10.2

10.4. What classification of buses exist? By amount of passangers, by A/C availability, etc...? how many buses of each type?

Refer Question No. 10.2

10.5. What buses to be used for installation of VMU (type, guarantee (new or used))? Do we need to coordinate installation of VMU with bus manufacturers?

It is the sole responsibility of Bidder to take care of installations and maintenance of VMU in KSRTC buses. The buses are already in usage. Ashok Leyland, Tata, Volvo and Swaraj Mazda are the different bus models deployed at Mysore. Front Engine Semi Low Floor, Ordinary, Parisara Vahini, Vestibule, Air duct, Mini Buses are different types of buses. Bidder to visit Mysore and understand the same. KSRTC is procuring and deploying buses and Bidder has to co-ordinate with KSRTC for VMU installations.

10.6. What all ITS infrastructure is coming fitted with the Buses?

In respect of buses which are already having external display boards (150), there will be a need to interface the VMU to be able to display appropriate information on the external display boards. In respect of those buses which do not have the facility for mounting the external display boards, the requirement is only to provide information display panels inside the vehicle.

10.7. Do buses have speakers already installed that could be used with this system?

## Clarifications to the queries raised by the bidders

Bidder to arrange for supplies of speakers in all the buses. Bidder to visit Mysore and understand the same.

### 10.8. How many buses are equipped with in -built speakers?

Refer Question No. 10.7 All buses are required to be equipped with speakers

10.9. The display unit shall be mounted inside the bus to provide a clear view for the travelling commuters supported by voice. Please confirm that all of the buses (both Volvo and other makes) are equipped with voice announcement system. Please provide details on types of port/interface available.

Bidder to provide all the requirements as specified in the bidding document.

10.10. The display unit shall be mounted inside the bus to provide a clear view for the travelling commuters supported by voice. Please confirm that all of the buses (both Volvo and other makes) are equipped with voice announcement system. Please provide details on types of port/interface available.

Refer Question No. 10.9

### 10.11. Details of interface with the bus for reading brake status, speed etc

The Bidder is free to implement any technical features that are beyond the minimum functional requirements specified in the technical section.

### 10.12. How Harsh Acceleration, & Harsh Braking are to be determined? Are the necessary sensors available in the bus?

Over-Speeding, Harsh Acceleration, Harsh Braking, Off-route Detection, Non-Stoppage at Bus stops, Trip Cancellation etc are the functional requirements of KSRTC, which the Bidder is free to implement any strategy which in its opinion would meet the requirements of KSRTC. The buses are not equipped with sensors for detecting these parameters.

### 10.13. Auto headway detection and notification - Please Clarify?

This is for collision detection as a safety measure. This is only for collision detection. This specification is to provide forward collision warning systems that would monitor the roadway in front of the host vehicle and warn the driver when a potential collision risk exists.

### 10.14. What is the Auto headway detection and notification? Please clarify

Refer Question No. 10.13

### 10.15. Does the scope of Maintenance management mentioned include Preventive, Breakdown and Predictive Maintenance it was replied in the affirmative?

Yes

### 10.16. Facilitate timely management of vehicle break downs /Accidents and other incidents. Please Elaborate.

## Clarifications to the queries raised by the bidders

This is a requirement that the BIDDER must meet with an appropriate technical design to provide dynamic information available on the various display systems detailed in the bidding documents.

10.17. Bus Equipment - What is the use of an additional battery for the GPS? The bus battery is sufficient.

The requirement is that the VMU System memory should save data and not reset when unit is switched off or during power failure.

10.18. Required AVL battery backup of 8 hours (page 151). Can it be 4 hours as it is going to be connected most of the time to vehicle battery

The Bidder to meet the requirement as per the BIDDING DOCUMENTS.

10.19. Event Window – feature to enable Control Centre Operators to respond to events such as ECall, B-Call, Over-speeding, etc. The control centre operator shall be able to see the position of event drawn over the map along with driver, vehicle and event details. Is there a standard speed limit for buses the city of Mysore?

Speed limit for buses in the city of Mysore is restricted to 65 kms.

10.20. Event Window – feature to enable Control Centre Operators to respond to events such as ECall, B-Call, Over-speeding, etc. The control centre operator shall be able to see the position of event drawn over the map along with driver, vehicle and event details. Is there a standard speed limit for buses the city of Mysore?

Refer Question No. 10.19

10.21. What languages should be used for audio announcement of bus stops (inside the bus)

English and Kannada

10.22. Keeping track of the extent of pollution caused by KSRTC buses and initiate action on progressively bringing in less polluting fuel into the system; Please Elaborate steps to achieve this requirement.

The system should provide interface for entering the pollution related data of the vehicles by KSRTC staff.

## 11. KSRTC Practices and concepts

11.1. KSRTC currently operates in Mysore through 434 schedules from 4 depots with a fleet strength of 472. This means 434 different services or routes from 4 depots? As the text mentions schedules for being the schedule of a single route, does KSRTC not retain a integrated schedule incorporating all routes?

KSRTC currently operates in Mysore through 384 schedules from 3 depots with a fleet strength of 416. There are 187 Routes operated by KSRTC in Mysore City. All the schedules are depot specific and there is no integrated schedule. Schedule forms combinations of trips operated in one or more routes.

11.2. IS KSRTC at this moment able to supply the schedules data in electronic form to the AVL system?

bidder may obtain non-electronic data from KSRTC and use it appropriately.

11.3. A more detailed questionnaire regarding the scheduling, rostering and duty planning is attached (to be translated into English)

Bidder is free to adopt any strategy for the study of the requirements and the design of the solution.

11.4. Is KSRTC doing the scheduling on a centralized or local depot wise basis?

Local depotwise basis.

11.5. How currently is arranged dispatching management of buses in Mysore? Is there any dispatcher manual or list of orders or document, on the basis of which dispatcher currently control and manage the buses movement (In Russia we do have such document, approved by the ministry of Transport)

Currently there is manual dispatch of buses from depots / bus stations. Bidder is suggested to visit Mysore and study and propose to meet the functional requirements.

11.6. How does KSRTC plan to handle the system in case of additional bus deployment on temporary basis? Since the system requires installation of VMU and Bus Mounted Display panels on the buses, it is suggested the system be implemented only on the permanent fleet of KSRTC.

The buses indicated are all the permanent fleet of KSRTC only.

11.7. AVL-IS shall support dynamic trip configuration, enabling the control room to activate individual trips, provide route numbers for the UP or DOWN trips. Based on the trip number downloaded, the route information in terms of bus stop locations, bus stop index numbers (current and the next bus stop index), etc shall also be downloadable for in-bus display. Will backend allocate route to buses OR will the VMU transmit the route selected by driver to the backend?

## Clarifications to the queries raised by the bidders

The route allocation will be done by KSRTC by the respective depot authorities.

11.8. How does KSRTC ensure continuous visibility to traffic jams, route congestions etc for effective communications to drivers and route diversion strategy

Driver will communicate to the Control Station. The operational staff monitoring at CCS will take decisions.

11.9. Information elements that needs to be captured at the minimum include longitude, latitude, physical location enroute with date and time stamps, bus number, route number, and Driver ID. How do you propose to capture Driver ID?

The Bidder may decide and design the appropriate Driver ID

11.10. Information System - How is currently managed the bus and driver planning? Is there any specific software? Excel sheets? Is there any database?

This will be part of the requirements gathering that needs to be factored in by the bidder.

11.11. What is the difference between a bus terminal and a bus platform?

Bus terminal is bus station. Platform is a bus bay in the bus station. Bus terminal is the terminus or the bus station, and platforms are independent bus bays in the bus terminal. Please visit the site to understand the basic terminologies and the civil structure in the bus stations, stops, terminal, platforms...

11.12. Pls. Clarify on

- o **Help Desk – is it for KSRTC or Public?**

Help Desk management is inclusive of call centre functionality and would cover support for KSRTC staff including the public.

- o **LCD/LED – Specifications for LED**

The bidder may select the appropriate display system that meets the functional and visual requirements for the information display system.

- o **Power supply details**

KSRTC will arrange to provide power at bus stops and terminals. Bidder to arrange for getting required connection from the nearest point to the place of installations.

- o **Providing Internet facility to all six bus terminals**

The connectivity is part of the scope under the communication system to ensure that all the bus terminals, depots and KSRTC officer are connected through a WAN

- o **Providing audio system in buses**

Bidder to arrange for providing audio system in buses

11.13. What are the reasons (practically) of buses deviation from the scheduled route (F-req 42 p 10)

## Clarifications to the queries raised by the bidders

Bidder to visit Mysore and understand the traffic operation practices prevailing in KSRTC. The deviations could be due to traffic jam, passenger demand, road block, agitations etc.

11.14. The application shall support dynamic monitoring of vehicles moving out of their defined routes and be able to raise alerts to be sent across to the driver of such vehicles. What is the procedure for allocation of routes and schedules to the bus? Is it fixed for a day or certain period or is it dynamic throughout the day?

The IA is expected to cover this under the requirements gathering and validating with KSRTC

11.15. More bullet points to discuss:

11.16. Single database for all modules, if the trip is changed, automatically the duties are changed, the roster is changed etc.

Question is not clear. However, it is a design feature, which Bidder is free to implement.

11.17. Is there any available installed routes schedule in the buses currently? If yes – who are the manufacturers and what communication protocols it is using?

No.

11.18. What is ECall, B-Call?

Emergency Call and Breakdown call

11.19. Integrate ITS solutions with existing applications. Please provide more technical detail on the existing KSRTC applications that the ITS solution has to interface with?

KSRTC is making use of Depot Computerization Software for downloading ETMs. The existing ETMs of KSRTC being used may be studied by Bidder and suitable solutions may be proposed to achieve the functional requirements.

11.20. Facility to generate information such as travel time estimation, average time at bus stop v. number of passengers boarding at each point, density of passenger traffic at different bus stops enroute, passenger traffic at different location, alerts on exceptions, and logging of the journey details of the bus for each trip. Do the buses have an Automatic Passenger Count system implemented already on-board? If yes, please provide technical information and details on interface options.

No. There is no automatic passenger count system.

11.21. Integration with ERP systems, like SAP, are these in use at KSRTC? Is the following actually the case?

The Bidder is free to study and implement any technical features that are beyond the minimum functional requirements specified in the technical section.

## Clarifications to the queries raised by the bidders

11.22. Is there any specific service provider required for vehicle data communication?

KSRTC has no specific service provider. It is for the Bidder to work out with an appropriate Service provider at Mysore.

11.23. Is there a centralized customer data management system already in place?

Yes. It is being used for different functionalities.

11.24. Does KSRTC have tie ups with Mobile service providers and payment gateways to facilitate E-Payments (Mobile payments) for transaction like individual account recharge, route and schedule info through sms?

11.25 KSRTC has the payment gateway of ICICI for the e-booking facility. Similarly, ngpay is providing its own gateway for mobile booking facility. We don't have the facility of providing the schedule information through sms at present.

11.26. A stake holders requirement: Facilitate timely management of vehicle break downs /Accidents and other incidents.

11.27. Does this imply that KSRTC suffers from a large number of vehicle breakdowns currently?

An Intelligent Transport system should at its minimum provide effective management through quick communication in the event of any accident, vehicle breakdown or other untoward incidents. KSRTC expects the Bidder to design a solution that meets this fundamental requirement given the ITS infrastructure that goes into a vehicle. The requirement does not imply that the KSRTC suffers from a large number of vehicle breakdowns. KSRTC has its own advanced facility for vehicle maintenance and vehicle towing facilities.

11.28. The process of creating the bus schedules, duty schedules for drivers, is not mentioned with very much detail in the BIDDING DOCUMENTS. For an AVL or RTI system as requested to perform in a reliable and accurate way these schedules need to be made available to the system. Obviously with the purpose of performing control and schedule adherence control. The process of how this will be accomplished or in what form the schedule information is made available is not described as a requirement.

The Bidder is expected to study these details as part of designing the solution.

11.29. Staff is interchangeable between depots, is this useful?

Yes. Staff is interchangeable between depots.

11.30. Is there a toll free Number for the customers to reach the help desk

Presently, No. However, KSRTC intends to establish.

11.31. Multiple crewing: the system can plan duties for many types of staff not only drivers, is this useful?

## Clarifications to the queries raised by the bidders

The Bidder is free to implement any technical features that are beyond the minimum functional requirements specified in the technical section

11.32. Should the benefits for the drivers and staff themselves be more put in the foreground, than the benefits of such systems for the organization? Is this depending on the power of drivers unions?

Question is not clear and may not be relevant for the present project.

## 12. Bid Submission Details

12.1. Can the relevant forms for Costing be made available to bidders in MS-Excel format? To avoid any errors in totaling etc.

No. KSRTC will not provide the excel format. Printed documents are to be submitted by the Bidder. It is for the Bidder to choose the tools for producing the needed documents.

12.2. We kindly ask you about the instrument of payment in the above mentioned matter: Is the amount of 100 USD for the fee only bill payable at sight or could we alternative start the payment by bank transfer? n that case the following dates from you are necessary:

- \* Account-number \_\_\_\_\_
- \* BIC/SWIFT-number \_\_\_\_\_
- \* bank name and address \_\_\_\_\_

Please let us know what payment instrument you prefer.

Payment as specified in Invitation For Bids

12.3. Can we submit the tender fees along with the tender document or it is necessary to purchase the document before submitting the tender?

In terms of Clause 6 of the IFB the bid documents need to be purchased on submission of a written application and upon payment of a non-refundable fee of INR 5000 or USD 100, Bids must be submitted on the basis of the bidding documents issued as described above. Since, in case of any discrepancies between downloaded version of the bidding document and paper copy issued by KSRTC, the latter shall prevail, it is advised the bidding documents be purchased in advance.

12.4. K. Technical Responsiveness Checklist

Are all requirements mandatory and we have to confirm that we fulfill them in the column "Mandatory/additional features"? Or are there any requirements that are not mandatory? If so, how can we identify them?

All functional requirements detailed in Section VI are mandatory and the technical options for meeting the functional requirement is left to the design and features by the Bidder in terms of meeting those mandatory functional requirements.

12.5. Technical Responsiveness Checklist – Where can be downloaded the Technical Responsiveness Checklist?

The Technical Responsiveness Checklist is provided under Section VI: J&K

12.6. The Sample form Section VMU item 3. Mentions GPRS enabled SIM cards to be costed. As the communications contract for the SIMS, will be arranged in an agreement between KSRTC and it's mobile network provider, in our believe it is not

## Clarifications to the queries raised by the bidders

possible to cost for this item. Is it enough if the price item contains a sample offer from the network operator that already has a contract with KSRTC. Page 198

KSRTC will not enter into agreement with the mobile network provider and it is for the Bidder to negotiate with the available mobile network provider and work out the cost. So the cost element has to be factored in.

12.7. Bid Submission Form completed and signed by a person or persons duly authorized to bind the Bidder to the Contract. Bid submission form carries price information. Where should this form go - technical or commercial proposal? If given along with the technical proposal, the contract value will be known before the commercial bids opening.

Bid submission form is for single stage bidding. Please see ITB 20 and 24.3 in this regard.

12.8. Bid Submission Form completed and signed by a person or persons duly authorized to bind the Bidder to the Contract. Bid submission form carries price information. Where should this form go - technical or commercial proposal? If given along with the technical proposal, the contract value will be known before the commercial bids opening.

Refer Question No. 12.7

12.9. Manufacturer's Authorizations for Information Technologies - except for those technologies which the Bidder itself manufactures - are required for the following types/categories:

1. Automatic vehicle tracking (AVL) system
2. Hardware planned for the Central Control Station such as the Servers, network switches, routers, storage devices
3. Software systems planned for the Central Control Station such as Operating / network systems / databases, etc
4. GPS software application that are proposed to be used off-the-shelf
5. Hardware planned for display inside/outside the vehicles and bus stops / bus terminals

In case of servers and system softwares, do we need authorization directly from the company or dealers would suffice? For Example: In case of IBM server and Red Hat Linux, do we require these authorizations directly from IBM and Red Hat?

Authorization from manufacturer is required.

12.10. Manufacturer's Authorizations for Information Technologies - except for those technologies which the Bidder itself manufactures - are required for the following types/categories:

1. Automatic vehicle tracking (AVL) system
2. Hardware planned for the Central Control Station such as the Servers, network switches, routers, storage devices
3. Software systems planned for the Central Control Station such as Operating / network systems / databases, etc
4. GPS software application that are proposed to be used off-the-shelf
5. Hardware planned for display inside/outside the vehicles and bus stops / bus terminals

## Clarifications to the queries raised by the bidders

In case of servers and system softwares, do we need authorization directly from the company or dealers would suffice? For Example: In case of IBM server and Red Hat Linux, do we require these authorizations directly from IBM and Red Hat?

Refer Question No. 12.9

12.11. The language of the bid and of all correspondence and documents related to it is: English. Training documents/manuals will be in English and Training on ITS system to the users will be in English, please confirm.

Training documentation / manuals needs to be in English and Kannada

12.12. With the exception of Software and Materials, the ownership of the Information Technologies and other Goods shall be transferred to the Purchaser at the time of Delivery or otherwise under terms that may be agreed upon and specified in the Contract Agreement. As per our understanding, anything procured (e.g. servers, printers, display boards, software licenses etc.) would be in the name of Bidder and all rights will then be transferred to KSRTC at the end of the contract period. Is our understanding correct? Please clarify.

No. Please refer GCC Clause 34 of bidding documents.

12.13. Bids "need" to be secured "by a Bid Security". The amount of Bid Security required is: INR. 25 Lakhs (USD 0.05 million) Only or an equitable amount in a freely convertible currency. Can bid security be in the form of a DD valid till 24-01-2011?

No change in bidding documents, the bid security is to be as per ITB clause 17.2. Validity to be 28 days beyond the validity period of the Bid

12.14. The language of the bid and of all correspondence and documents related to it is: English. Training documents/manuals will be in English and Training on ITS system to the users will be in English, please confirm.

Refer Question No. 12.11

12.15. Bids "need" to be secured "by a Bid Security". The amount of Bid Security required is: INR. 25 Lakhs (USD 0.05 million) Only or an equitable amount in a freely convertible currency. Can bid security be in the form of a DD valid till 24-01-2011?

Refer Question No. 12.13

12.16. Bid - securing declarations / bid security should be returned once a bidder has been declared successful bidder for the project.

Yes. After entering into the contract and on submission of performance security as prescribed in the bidding documents. This will be governed as stipulated in clause 17.5 (d) under Section 1 Instructions to bidders whereby the Bid security will be returned to the successful bidder once it has signed the contract agreement and furnished a valid performance security as required.

12.17. Page 235. 4A. BID SECURITY (BANK GUARANTEE)

## Clarifications to the queries raised by the bidders

Our bank requests that a bank guarantee validity date is clearly specified within. Therefore, we request permission to insert the following sentences in the bank guarantee text:

“This guarantee shall expire on ..... , after that date, the present guarantee shall become automatically null and void, regardless of whether this letter of guarantee is returned to us or not. Consequently any demand for payment under it must be received by us at this office on or before that date. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458”

Refer Question No. 12.13

12.18. Can we use bid security as “Bank Guarantee”?

As per ITB clause 17.2 (a) Bid security can be in the form of a Bank Guarantee

12.19. Annual turnover-applicable activities only (page 223). Please specify what are applicable activities?

Relates to Information Technology products and solutions

12.20. Please clarify the advance payment option? The payment terms are not clear, we need more clarification on that.

The terms of payment are in line with World Bank Guidelines referred to under GCC 12.1 and Clause 12 of the SCC. Advance will be paid on submission of claim accompanied by Advance Payment Security (in the form of Bank Guarantee) for the corresponding advance, after signing of the contractual agreements.

12.21. With change in inputs costs, manpower an important cost item in IT based projects, etc. cost of service is supposed to go up during the contract period. Hence there should be a provision for price increase at least @ 10% p.a. within the contract period. Is exchange rate fluctuations during the contract period allowed for getting revised fees from the purchaser?

Provisions of bidding documents shall prevail.

12.22. The Supplier shall formally present to the Purchaser the Project Plan in accordance with the procedure specified in the SCC. Are there any expectations on the implementation timelines?

The planned implementation schedule for the complete procurement, installation, and commissioning is given in the BIDDING DOCUMENTS. The Bidder may however, submit a detailed project plan for implementation for review, consideration and acceptance by the PIU. Once approved, the schedule needs to be adhered to. However the stipulation regarding levying of liquidated damages phase-wise / stage-wise remains unchanged.

12.23. With the exception of Software and Materials, the ownership of the Information Technologies and other Goods shall be transferred to the Purchaser at the time of Delivery or otherwise under terms that may be agreed upon and specified

## Clarifications to the queries raised by the bidders

in the Contract Agreement. As per our understanding, anything procured (e.g. servers, printers, display boards, software licenses etc.) would be in the name of Bidder and all rights will then be transferred to KSRTC at the end of the contract period. Is our understanding correct? Please clarify.

No. Please refer GCC Clause 34 of BIDDING documents.

12.24. Bidders should not enclose certificates or testimonials (page 223; 3.5.2). Can the testimonial or certificates be part of the tender? This will help in Highlighting the proven capabilities of the Applicant

No. The testimonials and certificates are not part of the tender as indicated in page no. 223; 3.5.2

12.25. Should we have to quote for AC units also & define the responsibilities for monthly electricity charges (5th of maintenance of 106 page)

Bidder to take care of the supply and maintenance of the Air Conditioner for the period specified in the BIDDING DOCUMENTS. Maintenance of AC Units is indicated clearly for year 2 and 3 (the first year to be covered under warranty)

## 13. Ticketing

### 13.1.

- Which e-ticketing machines are used?
- Which interface is provided to communicate with the VMU? We assume that the data on the number of tickets issued and count of passengers are collected and stored in the e-ticketing machine and the VMU shall just be used to transfer the data to the Central Control Station (CCS) where it will be picked up from a file root by the ticketing application software from the e-ticketing supplier. Is this assumption correct?

**The earlier requirement of 'Integrate solutions with Advanced Fare Collection solutions (in subsequent phase)' has been withdrawn. There is no requirement of seat availability and passenger count. Refer Sl. No. 7 and 8 of Amendment-No.1 to the bidding document.**

13.2. Currently KSRTC at Mysore has been using the e-Ticketing machine in the buses to issue tickets. It would be expected that through the communication system in the bus, the data on the number of tickets issued and count of passengers must be up loadable to the CCS at configurable time intervals. The details of the e-ticketing machine should be shared along with i/o ports to the bidder by KSRTC

**Refer question 13.1**

13.3. Bus Equipment - During our onsite visit, we did not see any e-ticketing system. Is there any System planed, which model, which interface? Lumiplan ITS can communicate with the major e-ticketing Systems.

**Refer question 13.1**

13.4. Page 139, Freq 42. Point 6. mentioned to capture head count at each bus stop, what they are the expectations from this point, either through ETM machine or something else. If all buses have ETM without connectivity to the AVL, then how the data will be transferred to the back end. In case of bus passes where ticket is not taken, then how to count their numbers.

**Refer question 13.1**

## Clarifications to the queries raised by the bidders

13.5. Whether this ITS will include the ETM also, do we need to quote for ETM for 500 buses.

**No. Refer question 13.1**

13.6. Section C-8

“Currently KSRTC at Mysore has been using the e-Ticketing machine in the buses to issue tickets. It would be expected that through the communication system in the bus, the data on the number of tickets issued and count of passengers must be up loadable to the CCS at configurable time intervals. The proposed AVL-IS and PIS solutions at the CCS must support all e-Ticketing related functionalities and MIS/ reports.”

Do the ETMs used by KSRTC currently have capability to transfer data through the communication system in the bus?

**Refer question 13.1**

13.7. Who will provide the interface with the e-ticketing solution? What will be the data format/Data Structure of the output from e-ticketing Solution.

**Refer question 13.1**

13.8. Is there any integration expected at bus level for ticketing machine?

**No**

13.9. Not clear about “Seat Availability” and “Bus fare” display at bus stop terminal. How this will happen? which system will be responsible for the same?

**Refer question 13.1**

13.10. Electronic ticket sale machine and fare collection system. Is there a system that KSRTC has procured for the Fare collection and E-ticketing? Please provide technical descriptions.

**Refer question 13.1**

13.11. How you calculate the no of passenger boarded in the bus at particular bust stops? How you calculate the passenger density?

**Refer question 13.1**

## Clarifications to the queries raised by the bidders

13.12. Bus stop utilization rate – no. of passengers boarding at different bus stops Enroute. How we calculate no of passengers boarding at different bus stops? Please clarify.

**Refer question 13.1**

13.13. Please provide the details of the E-ticketing machine, so we can check the compatibility with the VMU.

**Refer question 13.1**

13.14. Whether KSRTC will assist the bidders in associating with the ETM vendors?

**Refer question 13.1**

13.15. F-Req42. 12. It should enable operational managers to very easily create locations, routes, schedules and flexible ticket pricing plans using an intuitive user interface Please explain to relationship/dependency (if any) between ticket pricing planning and AVL system and how will they work together

The data generated from the ITS should facilitate analysis of the efficiency of the entire operations and it is from this perspective that this requirement needs to be understood. The operational managers need to evolve effective ticketing and pricing plans based on traffic density on different routes, deployment of additional buses to meet the increased traffic, facility to do different kinds of analysis on the pricing plans as part of it Management Information System.

13.16. What ticketing system is in use in Mysore? Ticket cost is fixed per trip, or per zone (distance)?

The ticket cost is based on distance and type of service.

13.17. The system of passengers counting inside the buses – what is used now and what protocol it is using (for integration with ITS)

**Refer question 13.1**

13.18. Integrate ITS solutions with existing applications. Please provide more technical detail on the existing KSRTC applications that the ITS solution has to interface with?

KSRTC is making use of Depot Computerisation Software for downloading ETMs. The existing system of KSRTC being used may be studied by Bidder and suitable solutions may be proposed to achieve the functional requirements.

## Clarifications to the queries raised by the bidders

13.19. Electronic ticket sale machine and fare collection system. Is there a system that KSRTC has procured for the Fare collection and E-ticketing? Please provide technical descriptions.

### **Refer question 13.1**

13.20. (3). B-1-b Clause (1) under "Stakeholders' expectations for travelers at bus stops/stations" mentions availability of information related to "(Bus Numbers: Starting - Destination Point - en route stops), Schedule of the buses - ETA/ETD, Seat availability, approximate travel time in at least two languages - English and Kannada , point to point bus fares, types of buses - AC/Non-AC/Non-stop routes etc; accessibility to such information should be both visual and audio enabled". For having an accurate estimate of seat availability; there must be an accurate passenger counting system or alternately it must be either programmed so that driver can choose this option on driver screen. The accuracy may depend on many factors that include seating configurations modifications, standee capacities and pre-information about exit point of every passenger on board. Such a system could be accurate only in case of ticketing machines installed outside buses and provided passengers strictly adhere to entry and exit points. We wish to understand that under these circumstances, what would be the level of accuracy that you expect for calculating the seat availability?

### **Refer question 13.1**

13.21. Ability to locate a bus at a given time in its track to estimate its arrival/departure time at the next destination, based on traffic density, distance, speed, bus occupancy, run-time information from the previous bus arrival time for the same location etc; the accuracy of the reduction time should not vary more than +- 2 minutes. . Bus Occupancy Status- This will be possible only after implementation of ETM - Is our assumption right? Traffic Density - How do we take this input in our system? . Does this also mean that we need to pre define different transit times for same route during different times of a day?

### **Refer question 13.1**

13.22. Automated voice announcement should add on easily to the passenger counting system connected to the on-board ITS components. Is the passenger

## Clarifications to the queries raised by the bidders

counting system already installed in the buses? If yes what is the make, model, integration points and features available with it?

### **Refer question 13.1**

13.23. Bus Equipment - Is there any passenger counting system installed in the buses? Is it required if there is no ticketing system? Can you explain the meaning of F-Req 46? How the passenger counting will impact the voice announcement?

### **Refer question 13.1**

13.24. Section B-1-b Meeting Stakeholder Requirements  
Information availability on Bus routes (Bus Numbers: Starting – Destination Point – en route stops), Schedule of the buses – ETA/ETD, Seat availability, approximate travel time in at least two languages – English and Kannada , point to point bus fares, types of buses – AC/Non-AC/Non-stop routes etc; accessibility to such information should be both visual and audio enabled.

1. 'Seat Availability' - it will not be possible to know real time seat availability in current scope as it would require Ticketing System Integration. Please confirm.
2. 'audio enabled' - what we understand is that as per current scope, bus stops/stations are not having audio PIS. Please confirm.

### **Refer question 13.1**

**Audio enabled requirement is for in-vehicle.**

13.25. Section C-3-a. Automatic Vehicle Location/Tracking  
Ability to locate a bus at a given time in its track to estimate its arrival/departure time at the next destination, based on traffic density, distance, speed, bus occupancy, run-time information from the previous bus arrival time for the same location etc; the accuracy of the prediction time should not vary more than +- 2 minutes.

'bus occupancy' - it will not be possible to know real time seat availability/ bus occupancy in current scope as there is no interface with Ticketing System.  
Please confirm.

### **Refer question 13.1**

## Clarifications to the queries raised by the bidders

### 13.26. Section C-3-a. Automatic Vehicle Location/Tracking

Facility to generate information such as travel time estimation, average time at bus stop v. number of passengers boarding at each point, density of passenger traffic at different bus stops enroute, passenger traffic at different location, alerts on exceptions, and logging of the journey details of the bus for each trip.

In current scope, it is not possible to provide the passenger boarding/alighting information as there is no integration with Ticketing System

Please confirm.

#### **Refer question 13.1**

### 13.27. Section C-3-a. Automatic Vehicle Location/Tracking

It should enable operational managers to very easily create locations, routes, schedules and flexible ticket pricing plans using an intuitive user interface.

Please confirm how Ticket Pricing Plans to be used for AVL/PIS system?

#### **Refer question 13.1**

### 13.28. Section C-4-a. In-Vehicle Automated Voice Announcement System

Automated voice announcement should add on easily to the passenger counting system connected to the on-board ITS components

Is Supplying Passenger Counting System or integration with it is in current scope of tender. In this case details for Passenger Counting System are required and how it is to be integrated with AVL/PIS system?

#### **Refer question 13.1**

13.29. Page 139, Freq 42. Point 1. Mentioned to capture the Bus occupancy, how to calculate head count, and what mechanism is required?

#### **Refer question 13.1**

13.30. What is passenger counting system? Page 133, Freq 46

#### **Refer question 13.1**

13.31. "Information availability on Bus routes (Bus Numbers: Starting – Destination Point – en route stops), Schedule of the buses"

"Instant access to information such as: missed trips, late trips on different routes"

## Clarifications to the queries raised by the bidders

Could KSRTC please provide information about existing system / component (if exists) which will provide data about routes / schedules?

This will be to be studied and factored into by the Bidder as part of the implementation

13.32. (6). C-3-a (AVL-IS) "should enable operational managers to very easily create locations, routes, schedules and flexible ticket pricing plans using an intuitive user interface". We require your support in understanding the different ticket price algorithms to develop this option.

This will be part of requirements elucidation to be taken up by the Bidder, when KSRTC would provide the required data.

13.33. Instant access to fare details, etc at bus stops, bus terminals and within the buses. Please Elaborate.

This is a requirement that the BIDDER must meet with an appropriate technical design to provide dynamic information available on the various display systems detailed in the BIDDING DOCUMENTS.

13.34. Pls elaborate the relationship between Automated voice announcement system and the passenger counting system. How Automated voice announcement should add to the passenger counting system and what to add on?

**Refer question 13.1**

13.35. The reports refer to passenger entering the vehicle and platform loads. Are passenger counters provided on the buses and are they to be linked to the IVU?

**Refer question 13.1**

## 14. Implementation Schedule:

### 14.1. G. Implementation Schedule (Entire System)

Is it correct that the days mentioned und Bid Submission Form completed and signed by a person or persons duly authorized to bind the Bidder to the Contract;er the categories A,B,C, and D is the total time for implementation, i.e. 240 days? It means that the sub-categories would have to be performed some times in parallel. Do we understand the schedule correctly?

Yes. The planned implementation schedule for the complete procurement, installation, and commissioning is given in the BIDDING DOCUMENTS. The Bidder may however, submit a detailed project plan for implementation for review, consideration and acceptance by the PIU. Once approved, the schedule needs to be adhered to. However the stipulation regarding levying of liquidated damages phase-wise / stage-wise remains unchanged.

14.2. The Supplier shall formally present to the Purchaser the Project Plan in accordance with the procedure specified in the SCC. Are there any expectations on the implementation timelines?

Refer Question No. 14.1

14.3. Pilot Implementation- Customer Satisfaction level through online survey >80% - at least 80 % of the customers to be satisfied with the service. Data is collected through online surveys every two weeks during the pilot. Who will conduct the customer satisfaction survey? Who will be the target customers?

This will be evolved by KSRTC and will be an independent survey and KSRTC will identify the key stakeholders for the survey

14.4. Pilot Implementation - ETA Arrival at bus stop to be accurate by + / - Two minutes displayed 30 minutes before arrival of the bus. ETD at bus terminals to be precise by + / - one minutes displayed 30 minutes before departure of the bus. Ability to locate a bus at a given time in its track to estimate its arrival/departure time, based on traffic density, distance, speed, run-time information from the previous bus arrival time for the same location etc; Expected Time of Arrival depends on actual traffic conditions, ETA engine is expected to have self learning capability.

The bidder may conduct algorithm development using empirical data gathered from AVL data to provide ETA within given limits by an agreed time period (say, three months from start of gathering data).

14.5. Who is eligible for the pilot implementation?

Only the selected bidder will be required to implement the pilot as part of the post contract validation as detailed in the BIDDING DOCUMENTS

14.6. ITS Implementation Schedule. Please elaborate this schedule - when will be the start date of the schedule? Are these parallel or Sequential ? What is the first activity, second..so on ? What are the dependant tasks?

Refer Question No. 14.1

## Clarifications to the queries raised by the bidders

14.7. Project implementation schedule: please confirm that full project (from contract signing until 'go live') is 245 days. If that is the case, can intermediate milestone durations be extended / reduced or run in parallel as long as full project schedule target is not modified? Please confirm.

Refer Question No. 14.1

14.8. Implementation schedule- The table only depicts the activity / milestone for the vendor, but the same are dependent on KSRTC for provision of certain services, like preparation of CCS is subject to the same being made available by KSRTC, implementation of pilot is subject to buses and bus stops being made available for installation to vendor etc. We suggested the table also lists out the KSRTC responsibilities against each milestone.

As part of submission, the bidder is expected to provide a project management schedule. Implementation plan clearly describes the planned implementation schedule. The planned implementation schedule for the complete procurement, installation, and commissioning is described. The Bidder may however, submit a detailed project plan for implementation for review, consideration and acceptance by the PIU of KSRTC.

14.9. Implementation schedule- The table only depicts the activity / milestone for the vendor, but the same are dependent on KSRTC for provision of certain services, like preparation of CCS is subject to the same being made available by KSRTC, implementation of pilot is subject to buses and bus stops being made available for installation to vendor etc. We suggested the table also lists out the KSRTC responsibilities against each milestone.

Refer Question No. 14.8

14.10. How many LCD displays plan to be installed on the first pilot stage?

Refer to section 6, Table 17: ITS Implementation Schedule of the BIDDING DOCUMENTS.

14.11. How many LCD for the second stage?

Refer to section 6, Table 17: ITS Implementation Schedule of the BIDDING DOCUMENTS.

14.12. How many buses and stops physically possible to equip during a day (taking into account that they are occupied for regular duties)?

KSRTC will co-ordinate with the bidder for installation in time

14.13. What is expected deadline for completion of the whole project?

The planned implementation schedule for the complete procurement, installation, and commissioning is given in the BIDDING DOCUMENTS. The Bidder may however, submit a detailed project plan for implementation for review, consideration and acceptance by the PIU.

## Clarifications to the queries raised by the bidders

14.14. Planning - Can you confirm that the project implementation is planned to last around 1 year (7 months implementation and 4 months go live testing) and the 3 years maintenance (total 4 years)?

The expected project implementation Schedule is provided under Section VI – G.

Also kindly refer Section II ITB – 16.2(c) – “a Preliminary Project Plan describing, among other things, the methods by which the Bidder will carry out its overall management and coordination responsibilities if awarded the Contract and the human and other resources the Bidder proposes to use...”. The quality of the bidder’s project plan is part of the consideration in evaluation.

14.15. C-3-a (AVL-IS) "Exception Recording/ Actions (Over-Speeding, Harsh Acceleration, Harsh Braking, Off-route Detection, Non-Stoppage at Bus stops, Trip Cancellation)" This feature requires an FMS gateway provision as a cheap and simplest option else, this has to be managed by actual sensors which could make the system very complex. Kindly elucidate on your expected methodology to accomplish this.

Over-Speeding, Harsh Acceleration, Harsh Braking, Off-route Detection, Non-Stoppage at Bus stops, Trip Cancellation etc are the functional requirements of KSRTC, which the Bidder is free to implement any strategy which in its opinion would meet the requirements of KSRTC.

14.16. Pilot Implementation- Customer Satisfaction level through online survey >80% - at least 80 % of the customers to be satisfied with the service. Data is collected through online surveys every two weeks during the pilot. Who will conduct the customer satisfaction survey? Who will be the target customers?

This will be evolved by KSRTC and will be an independent survey and KSRTC will identify the key stakeholders for the survey

14.17. The initial survey just includes bus stops in the tender. We propose to do a full GPS survey including speeds for each bus during 1 week in order to begin the network optimization with real data. It is very important to have reliable data at the beginning to optimize the planning of the buses and drivers before to implement the vehicle tracking solution.

The Bidder is free to implement any strategy which in its opinion would meet the requirements of KSRTC.

**15. Qualification:**

15.1. The bidder should have been an IT solution provider for the transportation sector for the last 5 years as on date of bid opening. The bidder should have successfully deployed the proposed solution in a minimum of two Transport organizations with at least 100 buses in public or private sector environment in India or outside the country. Bidder is a wholly owned subsidiary of UK Company. For execution and delivery of projects Bidder India, wherever necessary, leverages the experience and expertise available globally with any company of the Bidder group. In this particular case, for the purposes of the evaluation criteria can the experience of other Bidder entities in India and abroad be included?

The bidder is required to meet the stipulated qualification requirements.

15.2. The bidder should have been an IT solution provider for the transportation sector for the last 5 years as on date of bid opening. The bidder should have successfully deployed the proposed solution in a minimum of two Transport organizations with at least 100 buses in public or private sector environment in India Bidder or outside the country. This will be restrictive clause for bidders located in India serving Indian Market, as there are not many similar solution implementations in India as of now. We suggest that from Indian bidders serving Indian Markets one successful implementation of similar solution in Public Transport (Govt.) be asked for.

The provisions of bidding documents shall prevail.

15.3. General Information Systems Experience Record - The information supplied should be the annual turnover of the Bidder (or each member of a Joint Venture), in terms of the amounts billed to clients for each year for work in progress or completed, converted to U.S. dollars at the rate of exchange at the end of the period reported. In case of an autonomous subdivision of a parent conglomerate, should the turnover information be of the subdivision or the parent conglomerate?

The Turnover requirement is to be met by the bidder.

15.4. The technical and experience qualifications of Subcontractors can count for the provision of the following key components:

- Automatic Vehicle Location Tracking Network System.
- Passenger Information system.
- Setting up the Central Control Station including the network systems.
- Providing the GSM/GPRS connectivity. AND A firm may be proposed as a subcontractor in any number of bids.

This will benefit GPS manufacturer, LED Board manufactures who can manage to be subcontractor with many bidders (as there are no qualifications instructions for the subcontractors). This will encourage monopoly and one manufacturer can bid through many bidders. Is it Ok if we as a IT Solution provider having experience in establishing & operation of one control room for city buses participate along with subcontractor A having experience in installing 100 GPS devices with 2 customers,

## Clarifications to the queries raised by the bidders

and subcontractor B having experience in installing 100 LED boards with 2 customers? We suggest this clause be dropped.

The provisions of bidding documents shall prevail.

15.5. that, in the case of a Bidder not doing business within the Purchaser's country, the Bidder is or will be (if awarded the Contract) represented by an Agent in that country who is equipped and able to carry out the Bidder's maintenance, technical support, training, and repair obligations prescribed in the General and Special Conditions of Contract, and/or Technical Requirements. No eligibility criteria defined for agents, manufacturers and Subcontractors. Can one agent represent many companies etc.? Please reconsider this clause.

The agent can represent more than one company so long as the bid is from the company and not from the agent.

15.6. that, in the case of a Bidder offering to supply key goods components of the Information System, as identified in the BDS, that the Bidder does not itself produce, the Bidder is duly authorized by the producer to supply those components in the Purchaser's country under the Contract(s) that may result from this bidding; (This will be accomplished by including Manufacturer's Authorizations in the bid, based on the sample found in Section VII.) This will allow one manufacturer to authorize many bidders. Again it may create monopoly. Please reconsider this clause.

The provisions of bidding document shall prevail.

15.7. Bid Data Sheet, Qualification Requirements, ITB 6.1 (a) -

The bidder should have been an IT solution provider for the transportation sector for the last 5 years as on date of bid opening. The bidder should have successfully deployed the proposed solution in a minimum of two Transport organizations with at least 100 buses in public or private sector environment in India or outside the country.

In case the proposed solution (which includes AVL, PIS, setting up CCS, GSM/GPRS connectivity) comes from a sub contractor and the sub contractor meets the minimum requirement of deployment of the solution in two transport organizations with at least 100 buses as per the requirement ("The bidder should have successfully deployed the proposed solution in a minimum of two Transport organizations with at least 100 buses in public or private sector environment in India or outside the country"), does it make the main bidder qualify for this bid ?

Please confirm.

The bidder is required to meet the stipulated qualification criteria.

15.8. The bidder is stated to have 5 years experience as an IT solution provider (page 2). Can it be brought down to 3 years? The reason for the request being the Intelligent Transport Systems is gaining momentum in last 2-3 years only.

No. The provisions of bidding document shall prevail.

15.9. The subcontractors name has to be mentioned (page 12 & 13). Can this requirement be deleted & can it be modified as the sole responsibility of the single window service provider for more accountability.

No. The provisions of bidding document shall prevail.

## Clarifications to the queries raised by the bidders

### 15.10. Minimum qualification criteria

The bidder should have been an IT solution provider for the transportation sector for the last 5 years as on date of bid opening. The bidder should have successfully deployed the proposed solution in a minimum of two Transport organizations with at least 100 buses in public or private sector environment in India or outside the country.

The bidder should have an average annual financial turnover of at least INR 250 million (USD 5 million) in the last three consecutive financial years

The technical and experience qualifications of Subcontractors can count for the provision of the following key components:

Automatic Vehicle Location Tracking Network System Passenger Information system

Setting up the Central Control Station including the network systems Providing the GSM/GPRS connectivity The ability of the company to support the implementation and maintenance of the systems hosted at Mysore, India, either through partners or by itself. The company should be willing to establish project and services support office at Mysore over the period of the project and provide appropriate training to personnel identified by KSRTC for its efficient ITS operations.

Are consortium bids allowed and if yes, does the credentials of either partners in the consortium in terms of implementation of the proposed solution count for bidders eligibility.

Consortium will not be allowed. However, the bid document provides for Joint venture as indicated in the qualifications for the bidder as per ITB of the bidding documents. Please refer Clause 6 of the ITB which provides the criteria for Joint venture participation. **Bidders are advised to refer ITB clause 6.2 which provides for bids by Joint Venture. Also, please refer to Sl.No.11 of Amendment-No.1 to bidding documents.**

### 15.11. Is participation as consortium allowed?

Refer replies at 15.10.

15.12. The bidder should have successfully deployed the proposed solution in a minimum of two transport organizations with at least 100 buses in public or private sector environment in India or outside the country. Pls. elaborate.

The qualifications criteria are clearly explained in the bid document. This implies that the prospective bidder must have provided ITS solution for a minimum of two organizations and at least for 100 buses, this ensures the capability of bidders in handling such solutions.

15.13. A pre qualified Joint venture may not change partners or its structure when submitting a bid. The flexibility to choose business partners like sub contractors, suppliers should be left to the bidder so that the best possible commercial solution could be used for the project.

## Clarifications to the queries raised by the bidders

No pre qualification process has been followed for this procurement. Bidders are required to meet the stipulated qualification criteria.

15.14. The naming of subcontractor for each individual item with the bid submission is extremely difficult. As it take time to agree on commercial and technical arrangements with suppliers /subcontractors etc. to reach a commercially and quality rich arrangements so that the most viable solution could be offered in the Project. Hence it shall give rise to a hasty and non -competitive price quote based on unviable business arrangements.

- The same should be asked for within a mututally agreed definite time frame from the signing of the contract with KSRTC.
- It leads to non-competitive advantage to bidders with already established relationships or having business presence in supplying to similar markets.
- This negatively affects the confidentiality of business relations

The provisions of bidding document shall prevail.

15.15. The bidder should have been an IT solution provider for the transportation sector for the last 5 years. This is a very general and too broad a qualification criteria for a niche and highly technical requirement alongwith the need for sub sectoral knowledge and skills sets.

- Instead of Transportation sector, it should be urban public transport with added points for bus related services as the project requires experience of working in the niche sector of bus based projects. The existing organization implementing the solutions should be given extra weightage in bid evaluation.
- Since the project envisages implementation of the system in public service domain, it is requested that those organizations which are already in the area should be given extra weightage.
- Being in business of 5 years is too restrictive a criteria as the ITS solutions in transportation especially bus based urban transport sector is a new phenomenon in India. Hence only three years should be there.
- Though it is an ICB, the players from developing countries and specially the purchaser country be given special preferences on account of local knowledge advantage.

The provisions of bidding document shall prevail. Bidders may also refer ITB Clause 29 as per which no margin of preference will apply.

15.16. Is it necessary that company had implemented the complete Vehicle tracking system and passenger information system both? Or in this consortium partner will have experience either in one. We have implemented vehicle tracking system India for two client with more then 400 vehicles, and my consortium partner had an experience of providing Passenger system in abroad?

The Bidder is required to meet all the minimum qualification criteria mentioned in the bidding documents.

## Clarifications to the queries raised by the bidders

15.17. Details of Contracts of Similar Nature and Complexity - In case of an autonomous subdivision of a parent conglomerate, should the information provided be specific to the subdivision?

Bidder is required to meet the qualification criteria mentioned.

15.18. General Information Systems Experience Record - The information supplied should be the annual turnover of the Bidder (or each member of a Joint Venture), in terms of the amounts billed to clients for each year for work in progress or completed, converted to U.S. dollars at the rate of exchange at the end of the period reported. In case of an autonomous subdivision of a parent conglomerate, should the turnover information be of the subdivision or the parent conglomerate?

The stipulated requirements are to be met by the bidder.

15.19. The ability of the company to support the implementation and maintenance of the systems hosted at Mysore, India, either through partners or by itself. Can the bidder employ a subcontractor to support the implementation and maintenance at Mysore?

Bidder is required to comply with the requirement of bidding documents. Please refer Bid data sheet, ITB Clause 6.1 (a).

15.20. The ability of the company to support the implementation and maintenance of the systems hosted at Mysore, India, either through partners or by itself. The company should be willing to establish project and services support office at Mysore over the period of the project and provide appropriate training to personnel identified by KSRTC for its efficient ITS operations. How many locations we need to carry out installation & Maintenance activity?

The bid document (Section VI – Technical [c-4.d, site table on page 171, site drawings on page 182-188, Table 29 on page 195) contains the details. Refer to Clause ITB 8 and reply to query 4.1 for details. You may please get in touch with KSRTC in case a site visit is desired.

15.21. The ability of the company to support the implementation and maintenance of the systems hosted at Mysore, India, either through partners or by itself. Can the bidder employ a subcontractor to support the implementation and maintenance at Mysore?

Refer Question No. 15.19

## **16. Driving Score:**

16.1. Driver Scoring Card based on driver's driving habits. Please provide more clarity on what KSRTC are looking for in terms of a Driver Score card? For example, what measurements are expected? Does the interface need to be graphical or purely statistical? Is the Score card to be seen by the driver on the in-vehicle device or purely for those in the back office?

The data captured in the AVL system such as speed, adherence to scheduled routes without deviation, timeliness in terms of departure and arrivals and any other parameter to be evolved in discussion with the KSRTC concerned officials will form the basis of the score card for the drivers.

16.2. Driver Scoring Card based on driver's driving habits. What all parameters needs to be considered?

Refer Question no. 16.1

16.3. Page 132, What is driver scoring card.? What info is reqd in this ?

Refer Question no. 16.1

16.4. Driver Scoring Card - Please Clarify. How will the process of scoring take place. What are all the things on which this will depend on and how will the driver be rated?

Refer Question no. 16.1

16.5. How the driver's driving habits would be determined? Pls elaborate.

Refer Question no. 16.1

## 17. MIS Reports:

### 17.1. MIS Reports

- a. Average Peak / lean demand in passenger load during various times of a typical day (non-seasonal)
- b. 2 Average Peak / lean demand in passenger load during various times of a Special day (seasonal)
- c. 3 Revenue collections during various times of a typical day (non-seasonal)
- d. 4 Revenue collections during various times of a special day(Seasonal)
- e. 5 Average time from start to destination of a route during various times of the day
- f. 6 Bus stop utilization rate – no. of passengers boarding at different bus stops enroute

Our understanding is that these reports are related to Fare Collection System and not in the scope of ITS tender. Please confirm.

This will be part of the ITS and the Bidder is required to plan for the requisite data for the MIS reports to be generated as required.

### 17.2. Page 144, Freq 140. How to get the info on revenues for generating report.

The data would be available through the e-Ticketing machine available with the conductors which could be uploaded at the end of the trip to the Central Control station through the VMU

17.3. The reports refer to revenue management; however it appears that fare collection is not part of the project, please clarify.

Refer Question no. 17.1

### 17.4. Page 143, what is daily out shedding report.

The table 7 in Page no.143 clearly explains the out shedding report. It explains the deviation from the prescribed schedule route.

## 18. Central Control Station:

18.1. The central control station shall be housed in a premises identified by KSRTC at Mysore. Will the real estate costs (rental if any) for the identified premises be borne by KSRTC? Will the infrastructure setup like furniture, fittings, stationery be provided by KSRTC?

While the CCS for operating the ITS is located in the identified premises, can the data center be a hosted secure environment to ensure that there is the right environment for the server equipment?

KSRTC has already identified the CCS inside the KSRTC premises, Mysore. Furniture, fittings and stationery will be provided by KSRTC. The Data centre needs to be hosted in secure place costs of which will be borne by the Bidder.

18.2. Who will provide the infrastructure of the Central Control Centre?

KSRTC will provide building and power for Central Control Station.

18.3. How the Bus terminals are connected with the central control station?

The Bidder may choose an appropriate service provider for working out the details of the connectivity economically. KSRTC's requirement is that these are interconnected.

18.4. How much time may be required for staffing the Central Control Station

Bidder to study the functional requirement and propose the period as it is the responsibility of the IV

18.5. Section C-2 Central Control Station

Messages from the control centre to the vehicles shall be both, predefined or freeform.

What we understand is that as per current scope, there are no message keys and LCD display in VMU to receive or send text messages.

In this case, please confirm on how predefined and freeform messages from control centre will be received and displayed in VMU?

There are display-boards planned inside the buses as clearly detailed out in the BIDDING DOCUMENTS. The Central control station should be able to transmit the message contents, in text and graphical form. Please revisit the relevant sections in the BIDDING DOCUMENTS.

18.6. Freq 14 of 129 page needs clarification on GIS and Bus stops to be linked for colour coded display since the LED boards at bus stations cannot support the images /maps

The Bidder is to select the display board appropriate for the color codes display s specified in the BIDDING document. The colours indicated in the table shows the display at CCS.

18.7. Window – feature to enable Control Centre Operators to respond to events such as ECall, B-Call, Over-speeding, etc. Please Elaborate

This is the event window, a general interface for incident and emergency management calls to be notified for the CCS operators to respond to immediately.

## **19. Infrastructure:**

19.1. Do we have to provide Internet for the 2 remote offices / depots?

Yes. All locations will have internet access.

19.2. Communicate with the Central Server using wired / wireless communication, Please clarify this point,

The communication links amongst the CCS, Bus Terminal and bus Depots could be on broadband link

19.3. Amongst the citizens, Special provisions must be made for the physically challenged, senior persons, women and children who may have difficulties in accessing the services of KSRTC easily. Apart from Audio Visual PIS in buses & Bus stops, Internet, IVRS, SMS what other Special provisions are expected?

The BIDDER to design appropriate information services such as the audio for visually impaired. The BIDDER may offer any services that would meet the requirements of this group of people.

19.4. Communication Headset will be provided to the driver to interact with Central Control Center. The driver will use the two-way communication facility made available to communicate with the central control center. The central control center can also contact any of bus drivers instantly to communicate messages. The driver can also use the audio system for announcing information regarding arrival of bus stations and incident management. Have KSRTC Checked with Motor Vehicles act with this requirement of communication Handset? 2. Microphone required to make announcement - is it in the scope of tender? If yes it will be independent from Two way voice communication between driver & Control centre.

KSRTC will take up with the Motor vehicles department if required. Yes.

19.5. Bus Equipment - Is it planed to install TFT boards in the buses (how many)? When is it planned to diffuse advertising in the buses?

Detailed requirements are in the BIDDING DOCUMENTS. It is proposed to plan for advertisements inside the buses.

19.6. Bus Equipment - Which kind of command board used by the driver is preferred: touch screen, button type or mobile phone?

The choices are left to the bidder

19.7. Control Server - In which language should be shown the interfaces for the central room?

The Central Control Station language interface will be English

19.8. Control Server - When is it planned to implement advertising in the buses? What is the economical model?

It is proposed to plan for advertisements inside the buses. Bidder may propose and suggest the same to KSRTC.

## Clarifications to the queries raised by the bidders

19.9. We assume that KSRTC will enter the route/trip management data on daily/schedule basis on application, Please confirm

No. The Bidder has to arrange for the same.

19.10. Data center power, infrastructure (furniture, AC), back up system will be in whose scope?

While KSRTC will provide for the premises and power, the back-up system and operational matters will be within the jurisdiction of the Bidder

19.11. The central control station shall be housed in a premises identified by KSRTC at Mysore. Will the real estate costs (rental if any) for the identified premises be borne by KSRTC? Will the infrastructure setup like furniture, fittings, stationery be provided by KSRTC?

While the CCS for operating the ITS is located in the identified premises, can the data center be a hosted secure environment to ensure that there is the right environment for the server equipment?

Refer Question no. 18.1

19.12. It is whose responsibility of ensuring civil works for installation of towers and control rooms.

Ensuring civil works relating to control room is KSRTC's responsibility and Bidder has to take up civil works for installation of towers.

19.13. F-Req69. The system shall enable feeding in pre-trip information to potential travelers of current network conditions, to help them assess their travel options - route, mode, time-of-day, etc. Please suggest practicality of this service for local services when phone numbers of most potential travellers is not known / registered.

The idea is to provide such pre-trip information on the Internet for commuters to access the details and plan their travel. This relates to information available in-vehicle in terms of the time to reach the destination point, the distance to be covered etc., which would help the passenger to shift to other travel options for instance if time is a constraint.

## 20. Traffic Density:

20.1. Facility to generate information such as travel time estimation, average time at bus stop v. number of passengers boarding at each point, density of passenger traffic at different bus stops enroute, passenger traffic at different location, alerts on exceptions, and logging of the journey details of the bus for each trip. Do the buses have an Automatic Passenger Count system implemented already on-board? If yes, please provide technical information and details on interface options.

No. There is no automatic passenger count system.

20.2. Passenger Information System shall provide real time traffic density Information, which can be used by commuters to facilitate travelers to better plan their trips, bypass congested routes or choose to delay departure times in the event of congestion. What is the format and source of the traffic congestion data?

The intention is to provide information relating to traffic density and congestion linked to the Traffic Management system of the traffic police so the commuters are better informed, through SMS alerts of the traffic police. The required data relating to SMS alert elements need to be identified in consultation with traffic management system at Mysore. This information from the police will be used to notify on the display systems the congestion information similar to SMS alerts by the CCS

20.3. Control Server- Is there any existing traffic information system? Lumiplan solution can calculate the traffic information with the GPS bus positions but it can also be connected to police traffic information system.

This requires to be studied and evolved by the Bidder in consultation with traffic management system at Mysore. The IV may implement additional features which will reckon in evaluation.

20.4. AVL-IS shall provide for the following features:

"Ability to locate a bus at a given time in its track to estimate its arrival/departure time at the next destination, based on traffic density, distance, speed, bus occupancy, run-time information from the previous bus arrival time for the same location etc; the accuracy of the prediction time should not vary more than +- 2 minutes."

Does KSRTC has any systems currently which provide information on traffic density?

No. The Bidder needs to study and develop appropriate solutions in consultation with traffic management system at Mysore.

20.5. Please elaborate, how the Passenger Information System is going to provide the real time traffic density Information.

Refer Question no. 20.4

## Clarifications to the queries raised by the bidders

20.6. Pls advise how you would like the vendor to calculate traffic density?

Refer Question no. 20.4

20.7. Number of passengers boarding at each point, density of passenger traffic at different bus stops enroute, passenger traffic at different location. Pls elaborate how KSRTC has envisaged to these data.

Refer Question no. 20.4

20.8. Passenger Information System shall provide real time traffic density Information, which can be used by commuters to facilitate travelers to better plan their trips, bypass congested routes or choose to delay departure times in the event of congestion.- How can PIS give real time traffic density information?

Refer Question no. 20.4

20.9. Ability to locate a bus at a given time in its track to estimate its arrival/departure time at the next destination, based on traffic density, distance, speed, bus occupancy, run-time. Information from the previous bus arrival time for the same location etc; the accuracy of the prediction time should not vary more than +- 2 minutes – Please Elaborate on how traffic density is estimation is envisaged.

Refer Question no. 20.4

20.10. Facility to generate information such as travel time estimation, average time at bus stop. Number of passengers boarding at each point, density of passenger traffic at different bus stops enroute, passenger traffic at different location, alerts on exceptions, and logging of the journey details of the bus for each trip – Please Elaborate on how Passenger Density estimation is envisaged?

This requires to be studied and evolved by the Bidder in consultation with traffic management system at Mysore. Information on Passenger density in buses in real time is available through the e-Ticketing facility currently being used by the conductors. The Bidder may study the existing system to establish the required interface for uploading such data through the VMU to the central control station, which would be then available to commuters on the web to understand the density and the consequential action plans from them. **Refer Question no. 20.4**

20.11. Passenger Information System shall provide real time traffic density Information, which can be used by commuters to facilitate travelers to better plan their trips, bypass congested routes or choose to delay departure times in the event of congestion. What is the format and source of the traffic congestion data?

Refer Question no. 20.4

20.12. How you calculate the traffic density of a route?

The intention is to provide information relating to traffic density and congestion linked to the Traffic Management system of the traffic police so the commuters are better informed, through SMS alerts of the traffic police. The required data relating to SMS alert elements need to be identified in consultation with traffic management

## Clarifications to the queries raised by the bidders

system at Mysore. This information from the police will be used to notify on the display systems the congestion information similar to SMS alerts by the CCS

20.13. What traffic density measurements are to be provided? Does this refer to bus travel time only or is the system to interface to a traffic management system (future / existing) or collect vehicular traffic data.

The intention is to provide information relating to traffic density and congestion linked to the Traffic Management system of the traffic police so the commuters are better informed, through SMS alerts of the traffic police. The required data relating to SMS alert elements need to be identified in consultation with traffic management system at Mysore. This information from the police will be used to notify on the display systems the congestion information similar to SMS alerts by the CCS

20.14. Regarding real time traffic density information, what is the base for such information?

Refer Question no. 20.13

20.15. F-Req56Content can include – Transportation Information (Bus schedules, alerts, etc), safety information, localized community information, GPS driven localized data, advertising (still images, animation, video), tourist information. Is planning, production, management, scheduling, delivery, storage and archival of content part of the scope. Will this be done by KSRTC or the vendor? What will be vendor's responsibility? Who will do the billing, recovery and reporting process. Please clarify.

This will be done by the bidder during the 3 year operational period. However in respect of the content development such as advertisements, KSRTC will work with the clients / Ad agencies and make available the content to the Bidder. In respect of the other data the Bidder will have to work closely with KSRTC in compiling the information. It will be the Bidder's responsibility for content management during the 3 years initial contract period

20.16. Travel Demand Management is an identified requirement. It was explained by quoting example of how citizen / travellers will have information of occupancy of bus which is due for arrival at a bus stop being displayed to avoid over crowding.

Travel Demand Management is an identified requirement.

## **21. SMS/IVRS:**

21.1. Access via Internet, SMS and IVRS - What does it mean? Do u mean that people can extract bus arrival/departure info through Web/SMS/IVRS? If yes - please detail SMS format (if any) , do we need to set-up a IVR based call centre as per scope ?

Yes. The format and other specs will be worked out by the Bidder

21.2. F-Req82. Access via Internet, SMS and IVRS. Please explain the requirement.

Facility for web-access to information on the Internet, information retrieval through SMS and interactive voice response on details - Real time data to be made available to the commuters through various forms of communication – display boards, web, Interactive voice response, etc. asked for by a commuter.

21.3. What will be frequency of sending SMS in fall back mode, as the SMS is more costly then GPRS?

The Bidder is required to finalize the details without los of data

21.4. Who will provide the SMS gateway? Who will bear the cost of those SMS services?

These costs will need to be factored into the operational expenses and will be part of the Bidder's responsibility for a period of three years.

21.5. Access via Internet, SMS and IVRS. What purpose it is required?

To provide effective information services to the stakeholders primarily the commuters, on real time basis without loss of data

21.6. More specific requirements are required for SMS and Internet channels.

KSRTC feels that what is indicated across the document for SMS and Internet functionality are sufficient enough for the Bidder to design the implementation solution

21.7. PIS real-time data shall be made available through LCD / LED Dynamic Message signs (DMS) / SMS / IVRS / Internet. Is there an IVRS system already available within KSRTC? Is it available for use with this project?

Bidder to provide all the requirements as specified in the BIDDING document.

21.8. Not clear about "Free Flow messages". Are you talking about a LCD on the Vehicle mounted unit for driver to read text messages sent by control center?

The requirement is to have flexibility in terms of messages being sent from the CCS to the buses, the bus driver and the display panels.

21.9. Bus Equipment - It is asked to have a SMS communication system as a backup if there is a cut of GPRS connection. This backup system will be rarely used. What would be the frequency of the SMS to send the bus position?

The functional requirement is clear for KSRTC. Bidder is expected to design appropriate solution

## Clarifications to the queries raised by the bidders

### 21.10. Communication Sub-System

Redundancy provided in VMU to ensure if GPRS fails due to unforeseen reason and then SMS facility is activated as a fall back mode

Our view is that SMS as fall back-feature is not reliable and costly too & also the cost cannot be estimated. Please confirm whether this is a mandatory requirement or whether in case of GPRS failure, VMU to store way-points in its memory and transmit on availability of GPRS

Bidder is expected to build in alternate solutions to ensure that the system performance is maintained as required. The system should be able to support both the SMS and store-and-transmit features. SMS could be used in emergencies and store-and-transmit features used as a first defense against failure of the network.

### 21.11. Pls elaborate what "consistent messaging environment" means.

The requirement of consistent messaging environment implies that the information displays are primarily the communication channel through which the travel particulars are made available. The voice announcement system would help those visually impaired to be able to listen to these messages.

### 21.12. A consistent messaging environment - Please Clarify

Refer Question no. 21.11

21.13. Do you want to have a driver messaging console from which driver can send pretext messages (hot buttons) or also a QWERTY text pad to write a free flow message?

This could be met by the programmable buttons on the VMU. The minimum is for SOS messages and the other three buttons should have the capability for being configured as required by KSRTC from time to time.

## **22. Training:**

22.1. The number of personnel trained is indicated in the table below. The tables do not contain the required data.

As mentioned in page no. 163 & 164 of tender documents, the bidder needs to train all categories of staff working in Mysore City Transport Division. The estimated number of staff to be trained is 750 Drivers, 500 Conductors, 275 Driver cum Conductors, 60 Central Control Station Staff, 10 Depot Operators/Managers and 20 IT Systems Staff.

## 23. Others:

23.1. "Approximate travel time" Can you please elucidate on this point? Does it mean the approximate travel time from one particular stop till the final destination? Or do you expect the audio-visual aids to display the approximate travel time for all combinations of stop points from the source and destination? This would be too complex and a passenger boarding at the (n+1)01 stop would be least interested in travel time from n1" stop and this information would be of minimal utility to him. The same argument holds good for point to point fare announcements.

The approximate travel time will be in relation to the final destination point only.

23.2. (4). B-1-b Clause (4) under "Stakeholders' expectations for Operational Managers" mentions access to information such as "accidents ~ types, impact, losses etc." If this info is supposed to be fed by the driver manually, this can be accomplished easily. If not, can you please enumerate on the methodology of how you expect the accident information to be detailed into the ITS system?

This is expected to be offline data collection and not in real-time

23.3. (5). B-1-b Clause (2) under "Stakeholders' expectations for Eco-System, Partners" mentions "keeping track of the extent of pollution caused by KSRTC buses and initiate action on progressively bringing in less polluting fuel into the system". This feature requires intelligence to be built-in into the buses and data transmission in the form of an FMS gateway else, this has to be managed by actual sensors which could make the system very complex. Kindly elucidate on your expected methodology to accomplish this.

The system should provide interface for entering the pollution related data of the vehicles by KSRTC staff.

23.4. We are considering to participate but we would need to know which is the budget available for this competitive bidding. In the World Bank procurement plan we found an amount of 3.5 million dollars: can you confirm that this is the reference value for this tender? Useless to say that it would be difficult to understand whether our current technology could fit, if the reference budget is not known.

Bidders are required to quote as per the scope and terms and conditions of the bidding documents.

### 23.5. Portal -

With requirement of Portal we understand that a web application with single sign-on and centralized security system is required for AVL and PIS applications. Otherwise please confirm what all features and functionalities are expected from Portal and what will be the different type of users?

The Portal will have address the requirements from the perspective of the different stakeholders of the ITS project.

23.6. Provide the total covered city area in Sq.Km for this ITS project?

## Clarifications to the queries raised by the bidders

144 Sq.kms.

23.7. The Tender document mentions the Insurance provision for USD 20,000 (Page115 Please specify the entire components that has to be covered like Transportation, Installation risks, Third Party Liability, Vehicle Liability etc.)

Please refer to GCC Clause 37 for insurance coverage to be provided by the bidder. Also refer to SCC (GCC Clause 37.1 (c)) which provides for third party liability insurance. This amount of third party liability insurance coverage is Rs. One million (INR. 1,000,000) / US Dollar Twenty Thousand (USD 20,000). **Also, please refer to Sl. No.10 of Amendment-No.1 to bidding document.**

23.8. Personnel capabilities of the person for nomination (page 230). What is the role of the person?

This relates to the persons (and an alternative) who would be responsible for delivering the results to KSRTC. Their primary role would be in delivering the promised and assured outcomes through meeting the specifications in their entirety.

23.9. Another question is will the Project Management Agency – PMA provide the necessary templates for Post Completion Audit.

This will be evolved jointly once the Project Management consultancy is in place. PMC will monitor the end to end project management of Bidder meeting the functional requirements including the Bidder Contract Management and monitoring of SLAs.

23.10. ITB 38.1/ GCC 6 (page 39/ 54): BIDDING suggest sole Arbitrator, we suggest the following clause.

"Any dispute or differences arising out of or touching this agreement if not resolved amicably within 30 days of arising such dispute, shall be referred to the arbitration, of single arbitrator mutually agreed between the parties. In case the parties fail to agree upon single arbitrator then each party shall appoint one arbitrator and those two arbitrators shall appoint third arbitrator. The decision of the arbitral tribunal shall be final and binding on the parties. The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996. The language of arbitration shall be English and the venue of arbitration shall be Mumbai, India."

Provisions of bidding document shall prevail.

23.11. Need clarity about the scope of "Voice announcement system"

The details are available in the bidding documents.

23.12. The Purchaser shall be liable for any loss of or damage to any Supplier's Equipment which the Purchaser has authorized to locate within the Purchaser's premises for use in fulfillment of Supplier's obligations under the Contract, except where such loss or damage arises from acts or omissions of the Supplier, its employees, or subcontractors. We understand that the purchaser (KSRTC) is responsible for safety of display boards that can be harmed by any act of sabotage

## Clarifications to the queries raised by the bidders

like breaking/stealing of sign/display boards in public places, bus stops and terminals. Please confirm.

Bidder to take necessary steps to ensure safety of all equipments supplied. As per SCC -37 with respect to GCC Clause-37, Bidder shall take necessary steps to cover the goods supplied under insurance.

23.13. During the Warranty Period, the Supplier must commence the work necessary to remedy defects or damage within three working days of notification. Request you to increase the working days to 15 days?

Can not be increased. Bidder needs to adhere to the provisions of bidding document. The requirement is to ensure prompt fixing of defects and Bidder may have to keep a buffer stock to handle this requirement.

23.14. Who will pay the insurance premium and for what period?

Bidders are advised to refer GCC clause 37.

23.15. Please clarify this point as it will increase the huge traffic on web site and we need to publish that data to general user which is not secure? The location of the vehicle is important data and it should not be access by the normal citizen.

Intention is to provide information to the citizens in terms of location of bus route drafted on map made available on portal in view mode, which will not cause any security concern.

23.16. KSRTC as one of the implementing agency for the project. Is there any other implementing agency for the project? Which are the agencies involved in implementing this project and what is their role?

KSRTC is the only implementing agency for ITS project at Mysore.

23.17. The borrower intends to apply a portion of the proceeds of the loan to eligible payments under the contract. Shall the entire money funded by the IBRD/IDA is being committed to the project?

No

23.18. It is the bank's policy to require that Borrowers under the conditions? Will this lead to instructions / guidance on day -to-day project related activities?

Yes. The contract will be executed as per the provisions of contract.

23.19. The purchaser reserves the right to delete any proposed subcontractors from the list. In such case, shall the KSRTC/ the World Bank give adequate time for getting a new sub contractor?

The provisions of bidding documents shall prevail.

## Clarifications to the queries raised by the bidders

23.20. Communication & Data Exchange- Identify specific areas of existing GPRS / GSM blackout zones and police critical locations in Mysore and enhance number of BTS towers and their capacities, if required. BTS towers are provided by the TSP (telecom service provider) and enhancing their infrastructure in the scope of this project will be unviable, this may be taken up by the department independently with the TSP in the city.

The Bidder will have to identify areas where the existing capacities are inadequate and take up with the Telecom Service Provider. KSRTC will provide necessary support in taking up with the TSP for enhancing the number of towers.

23.21. Communication & Data Exchange- Each Base Transceiver Station (BTS) of offered service provider should have configuration to ensure required 10 Sec. update time for the vehicle position at all times in all BTS area. Updates will be done by the GPS devices placed in the buses not the BTS, moreover it is not specified whether the department requires secured link or open link for GPRS communication.

From a security perspective a secure link would be ideal. Updates will be done by the VMU through the BTS.

23.22. It is mentioned that KSRTC is one of the implementing agency. Whether KSRTC is the implementing agency of the project.

Refer Question no. 23.16

23.23. When the answers will be circulated and what is the cut off date for submitting the queries.

As per the provisions of BIDDING DOCUMENTS, answers will be circulated

23.24. The technical specifications in the document have been detailed with 'should, shall and must' at many places. Please clarify.

These words have been used with syntactic equivalence and are mandatory

23.25. Whether there is technical score cut off.

There is no technical score cut off. Bidders may refer ITB clause 26.5.

23.26. Since the ITS project at Mysore is a demonstration project and since the pre-qualification criteria requires successful implementation, what is the stance of selection for executing in India, What is the method of assessing the project, Who will audit and Parameters for rating success. Pls. clarify

The provisions of bidding documents shall prevail.

23.27. Any plans for enhancing the scope of the project like interlinking bus stations with railway stations. Please clarify.

Scaling and upgrading always forms the part of the project.

## Clarifications to the queries raised by the bidders

23.28. What is the approximate cost of the project. He also stated that can the costs factored in Detailed Project Report displayed in KSRTC website can be indicative?

The bidders are required to quote as per the scope of work mentioned in the bidding documents.

23.29. F-Req 15, 16, 17 and F-Req 29,30,31,32 – The requirements are blank.

Page Formatting errors. These are not the requirements and kindly ignore the same.

23.30. Page 109. D. INTELLECTUAL PROPERTY

As an IT company it is of our major concern the need to protect the property rights embedded in our Products. To this extent, we understand that we will have the opportunity to discuss with the Customer the Intellectual Property Rights (IPR) provisions; we consider the need to be properly adjust the IPRs regulation to reflect the needs and concerns of both Parties.

In particular the confidentiality of the IPRs and rights requested to modify, adapt, develop, duplicate and commercialize the IPRs are of our mayor concern. In principle, SUPPLIER is willing to grant to the Customer a non exclusive, non transferable, time unlimited (to the maximum extent permitted by law) and free of charge, license to use and operate the systems delivered under the Contract. Said rights to be exercised directly by the Customer's personnel or any other third party assuming the operational role of the Customer. As regards to the Source Code, SUPPLIER will be willing to execute an escrow deposit administered by a third party escrow agent under an escrow agreement negotiated in good faith. Of course, SUPPLIER will provide full support for modifications, adaptations and enhancements of the system under reasonable commercial terms. Considering all of the above, SUPPLIER will be willing to discuss with the Customer any other reasonable IPRs solutions.

KSRTC will have the complete Intellectual Property Rights over the custom-built software with scope for any customization and enhancement.

23.31. How much time takes customs clearance in India when equipment is delivered from Russia?

Bidder to consult the Customs Department for details. However, the bidders may also refer GCC 22.6.

23.32. Merely the statement that the IVU system is capable of doing the complete duty planning on the basis of the schedule and trips' planning is a stunning simple concept that is often overlooked.

Not clear. This is a statement of an opinion and is not a question.

23.33. What amount of equipment (in percentage from the total installed) should be kept in Spare parts for annual maintenance and repair under warrantee (according to Indian rules and regulations)?

Bidder to keep minimum spares required and to ensure zero down time.

23.34. Is there are any limitations in India for electronic digital signature usage? Can Russian norms and standards be utilized for ITS in Mysore?

## Clarifications to the queries raised by the bidders

The Digital Signature will be governed by the provisions under Information Technology Act 2000 of India and IT amendment Act of 2008 which may be referred to at <http://mit.gov.in/content/cyber-laws>. Bidder to study the legal provisions prevailing in India and act accordingly to meet the requirements detailed in BIDDING document.