File No. RW/G-23012/01/2019-W&A(Pt.III)

Government of India
Ministry of Road Transport & Highways
(Planning Zone)
Transport Bhawan, 1, Parliament Street, New Delhi - 110001

Dated the 22nd March, 2021.

To

1. The Principal Secretaries/ Secretaries of all States/UTs Public Works Department dealing with National Highways, other centrally sponsored schemes.
2. All Engineers-in-Chief and Chief Engineers of Public Works Departments of States/ UTs dealing with National Highways and other centrally sponsored schemes.

Sub: Model Terms of Reference (ToR) for Supply, Operation and Maintenance of Incident Management Services (IMS) on NHs entrusted with State Governments/UTs - Reg.

Ref: (i). Ministry's Letter of even no. dt 15.01.2021 (Contract Document for Medium Term Maintenance of NHs)

(ii). Ministry's Letter of even no. dt 09.02.2021 (Provision of IMS for development / PR / IRQP Works on NHs)

(iii). Ministry's Letter of even no. dt 09.02.2021 (SOP for IMS)

Sir,

The Ministry, from time to time, has issued relevant policy for purpose of efficient functioning of National Highways and to ensure safety of road users, inter-alia mandating engagement of Incident Management Services (IMS), comprising Rescue Ambulances, Route Patrol Vehicles and Tow Away Cranes/Vehicles, for medium term maintenance contracts of 3 years or more as well as new development projects and PR/IRQP works on National Highways (NHs) entrusted with State Governments/UTs, vide letters cited under reference (i) and (ii).

2. Standard Operating Procedure (SOP) for IMS has been circulated vide letter cited under reference (iii).

3. In continuation of above, the model Terms of Reference (ToR) specifically for IMS is annexed for inclusion in the RFP and Contract Agreement for the main civil work contract or medium term maintenance contract, as is applicable, with immediate effect and until further orders.

4. This issues with the approval of Competent Authority.

Enclosure: As above

(A. Maulik)
Executive Engineer (Planning)
planningmorth@gmail.com

Copy for kind information and necessary action to:-

1. The Chairman, NHAI

2. The Managing Director, NHIDCL
3. All CEs in the Ministry of Road Transport & Highways
4. All ROs of the Ministry of Road Transport & Highways
5. The Secretary General, Indian Roads Congress
6. Technical circular file of S&R (P&B) Section
7. NIC-for uploading on Ministry's website under "What's New"

Copy for information to:-

1. PS to Hon'ble Minister (RT&H)
2. PS to Hon'ble MOS (RT&H)
3. Sr. PPS to Secretary (RT&H)
4. Sr. PPS to DG (RD) & SS
5. Sr. PPS to AS&FA
6. Sr. PPS to Pr. CCA, MoRT&H
7. Sr. PPS / PPS / PS to ADG-I/II/III/IV
8. Sr. PPS / PPS / PS to JS (H)/ JS (NHIDCL)/ JS (Toll) / JS (LA&C) / JS (IT)

Annexure

Enclosure to Ministry's OM No. RW/G-23012/01/2019-W&A(Pt.III) dated 22.03.2021

Terms of Reference ("TOR") for Supply, Operation and Maintenance of Incident Management Services (IMS) on National Highways

1. Background

1.1. The Ministry of Road Transport and Highways (M/oRT&H), through State PWDs or PIUs of the Ministry, awards works for design, construction, operation and maintenance of National Highways (NHs) to Contractors.

1.2. With the expansion in road network, motorization and urbanization in the country, the number of road accidents have surged. Road traffic injuries and fatalities have emerged as a major public health concern and one of the leading causes of deaths, disabilities and hospitalizations imposing severe socio-economic costs on society.

1.3. M/oRT&H has mandated implementation of Incident Management Services (IMS), comprising of Rescue Ambulances, Route Patrol Vehicles and Tow Away Vehicles/Cranes, during operation and maintenance of National Highways.

1.4. During the operation and maintenance of highway stretches, in order to provide relief and rescue measures in the aftermath of accidents, Contractors have been mandated to deploy tow away cranes for removing the breakdown/damaged vehicles; ambulances to provide immediate first-aid during golden hour to the accident victims and subsequent transfer of the accident victim to the nearest hospital/trauma care centre; and route patrolling vehicles to check unauthorized activities, guide the road users and provide traffic management assistance during incidents.

2. Objective

2.1. The objective of the Traffic Incident Management System is to provide an integrated approach to Incident Management by freeing up the road as quickly as possible following an incident, taking account of traffic safety, fostering the best interests of any victims involved and managing the resulting damage. Rapid response to incidents is critical not only for saving lives and aiding the injured, but also for maintaining the efficiency of traffic flows.

2.2. The nation-wide Traffic Incident Management System will consist of a combination of multiple on-road units (Rescue Ambulances, Route Patrol Vehicles, Tow-Away Cranes/Vehicles), a Central Command & Control Centre at the national level (helpline no. 1033 and managed by IHMCL), local Command and Control Centres of the individual Contractors (to coordinate with the Central Command and Control Centre) and support units (e.g., Trauma Centre) working seamlessly to identify, verify, respond to and manage incidents.

2.3. M/oRT&H intends to implement / take up in the selected service area **"Supply, Operation & Maintenance of Incident Management Services (IMS) on National Highways" through the main Civil Contractor under the scope of main Civil Work component of the Project.**

2.4. The detailed scope of the project is mentioned in the subsequent pages. The Contractor is also expected to co-ordinate with the support units.

***Disclaimer: Any complaints arising out of the service provided to any patient during transportation from incident site to nearby medical care facility shall solely be the**

responsibility of the Contractor and nowhere shall M/oRT&H or its implementing agency be made a party in such complaints.

3. Scope of Work

3.1. **Service Area**: National Highways across the area as and when decided by M/oRT&H or its implementing agency and informed to the Contractor shall be the service area. The Traffic Incident Emergency Management system in the specified service area will consist of the following components:-

- On-road units:
  - '2 patient capacity' Rescue Ambulances
  - Route Patrol Vehicles
  - Tow-away Cranes/Vehicles

  The Contractor shall be required to co-ordinate with all the on-road units near its deployment station and shall actively participate in the incident management and scene handling.
- Support units:
  - Police Department
  - Fire Department
  - Hospitals/Trauma Care Centres
  - 108/102/112 Services

The Contractor shall provide "Two Patient Capacity" Rescue Ambulances, Route Patrol Vehicles and Tow Away Cranes as per specifications detailed in SOP for IMS circulated by M/oRT&H vide Letter No. RW/G-23012/01/2019-W&A(Pt.III) dated 09.02.2021. The Contractor shall provide these on-road units on National Highways anywhere in the specified service area as instructed by Employer. The Contractor shall fulfil the Service Levels as mentioned in Clause 7 of the TOR.

Each on-road unit provided by Contractor will serve 30 Km of National Highway on both sides of its deployment station or a total length of 60 Km as per the influence length of the deployment station (the location of such stations and coverage of each on-road unit will be determined by the Employer). Based on the instructions given by the Employer as and when required, the Contractor shall provide the on-road units for the National Highways across the specified service area as per SOP for IMS circulated by M/oRT&H vide Letter No. RW/G-23012/01/2019-W&A(Pt.III) dated 09.02.2021.

The Rates quoted by the Contractor for supply, operation and maintenance of IMS in the specified service area shall be based on per unit per month lease fee of the on-road units including the associated manpower. The Employer may increase or decrease the number of vehicles based on its requirement. The exact number of units to be deployed shall be determined by the Employer as per requirement. However, the likely number of on-road units for which order shall be issued would be for __ Ambulances, __ Route Patrol Vehicles and ___ Tow Away Cranes, subject to variation under change of scope provisions of this document.

The Rates quoted by the Contractor should take into consideration the running of individual on-road units for 1200 Kms per month in case of Rescue Ambulance, 5500 Kms per month in case of Route Patrol Vehicle and 1800 Kms per month in case of

Tow Away Crane/Vehicle.

In case the actual running of the individual on-road units exceeds the above specified limits, they shall be given additional running expenses of Rs. 12 (twelve rupees) per Kilometer per Vehicle. The actual running of the vehicles shall be calculated as following:-`

The distance covered for attending any emergency either through dispatch call received through 1033 or through modes other than 1033 calls and distance travelled during any mock drills as directed by the Authority/Employer. For rescue ambulance, the actual distance shall be counted from the station/post of the on-road unit to the location of incident, and transport of victim to the nearest hospital and further back to its station/post again. The actual running of on-road units shall be evaluated through the CAD/GIS based emergency response system and GPS based data only.

The Contractor will also be responsible for coordinating with the Support Units listed above, to ensure that incident response is as per the stipulated guidelines.

3.2. The Contractor shall be required to study the entire project stretch and undertake, inter-alia, responsibilities for testing & commissioning the system integration of all required hardware / software / equipment/ subsystem in a time bound manner and provide round the clock operation and maintenance of the same, while meeting the service level requirements, during the entire contract period.

3.3. On completion of contract or upon termination of contract, the Contractor shall take away all of its deployed on-road units on *'as-is-where-is-basis'*. Further, any damage to the pavement/ shoulder/ roadside condition arising as a result of removal of the Contractor's equipment/ systems/ foundations etc. pertaining to IMS shall be rectified by the Contractor at its own cost.

3.4. **Deleted**

3.5. **Features of Traffic Incident Management System**

The Contractor shall set up and maintain an Incident Management System and supply regular incident statistics to the Employer.

Operation of Incident Management Services (IMS) shall be synchronised with toll-free no. 1033 or any other no. applicable.

Incident Management entails a set of coordinated activities initiated by the Contractor when an incident (an extraordinary event resulting in the reduction of road capacity or creates a hazard for users) occurs, in order to minimize the effects of the incident and restore normal capacity and safety levels to all affected road facilities as efficiently as possible.

The Contractor has to identify relevant support agencies (e.g. rescue, fire, hazardous materials, traffic, police, ambulance, hospitals, alternative routes, municipalities, cleanups) and their representatives and to liaise with these representatives on behalf of the Employer.

The local Incident Management / Command and Control Centre of the Contractor (minimum 500 sqm.) shall be continuously staffed on a 24 hours basis. The Contractor shall maintain records of the details of all incidents (e.g. collision, hazardous material, breakdown, etc.). After occurrence of any major incident, resulting in multiple loss of life, significant periods of road closure or major route rehabilitation work, an incident debriefing report shall be produced and forwarded to the Employer within 24 hours of

occurrence. The Command and Control Centre shall monitor the location of route of incident management vehicles/rescue operation vehicles through Vehicle Tracking System (VTS) on continuous basis.

The Contractor will keep a record of the removed accident/damaged vehicles by taking a dated photograph of the same and will submit the report on weekly basis to the Employer/Engineer.

The Contractor will remove dead animals/birds from the carriageway and bury them at a suitable location as directed by the Engineer/Employer within two hours of the incident and accident vehicles/Debris within 4 hours after police inspection.

The Route Patrol Vehicle, Ambulance and Crane shall be equipped (for 24 x7 period and total duration of contract) with Vehicle Tracking System (VTS), equipment/medicines as mentioned in the provisions of this document.

i) Route Patrol Vehicle

The Contractor is required to provide 24 hours per day route patrols to assist the road users of the highway, to provide information, feedback and perform functions in relation to incident management. To achieve this, the Patrol vehicles fitted with VTS should be fully equipped as well as the patrol persons should be adequately trained in traffic management, road safety and primary first aid. The purpose of these patrols is to:

- Provide the users of the highway with basic mechanical help for vehicles that breakdown on the road and also protect other users from such vehicles.
- Immediately identify traffic hazards of whatever nature, such as unauthorized parking, public transport vehicles, obstructing traffic during passenger loading and unloading, debris, stray animals and the like. The operator shall take the necessary measures to remove such obstructions.
- Provide emergency management at accident scenes until such time as the appropriate authorities arrive.
- Assist with the removal of damaged or mechanically impaired vehicles from the highway.
- Observe, record and report suspect aspects of the highway, hazards and incidental damage caused by vehicles, floods, storms or other random events, such that the highway maintenance records and database are continuously improved.

Patrol Vehicles, including equipment and man power, shall conform to standard specifications issued vide Ministry's Letter No. RW/G-23012/01/2019-W&A(Pt.III) dated 09.02.2021.

Typical duties of the Route Patrol in-Charge are:-

- Patrol the corridor to ensure obstruction free flow as per shift standards.
- To report to police and assist injured at accident scene and remove all obstructions from road when the vehicles are cleared.
- To provide first aid to injured, contact control room and ambulance service if needed, assist police.
- Report all incidents on radio control, to control room.
- To ensure safety of traffic with minimal delay at accidents.

- To assist motorists on broken down vehicles and to ensure that they do not obstruct free flow.
- Maintain relations with all emergency services, and local safety councils.
- To report carriageway condition of drainage, ROW plantations, median plantation etc.
- Check on encroachment irregularities taking place within ROW, and prevent unauthorized entry into the corridor.
- Prevent theft of assets and report.
- Attend to urgent maintenance for safety requirements.

All times, the Route Patrol In-Charge should have with him a list of telephone numbers and address of all concerned in providing the road users services.

ii) Rescue Ambulance

Rescue Ambulance, along with medical devices, on-board equipment, medicines and manpower shall conform to standard specifications issued vide Ministry's Letter No. RW/G-23012/01/2019-W&A(Pt.III) dated 09.02.2021.

The vehicle shall run minimum 5 km daily (even for dry run), to be eligible for monthly payment.

The roles and responsibilities of rescue ambulances include but are not limited to the following:

- Rescue Ambulances should be operational 24 hours per day in 3 shifts of 8 hours each.
- Rescue ambulances should be optimally located along the highway stretch (typically near black spots / accident prone areas) to minimize response time to incidents.
- Rescue ambulances should provide "Basic life support" to casualties of highway accidents and enable immobilization, retrieval & transfer to the nearest centre that provides suitable medical care.
- Pre shift check: Each rescue ambulance EMT (Emergency Medical Technician) staff should make sure that the vehicle and the equipment are in compliance with the specifications and are functional. In case any equipment is not functional, the EMT staff should replace the faulty equipment.
- Communication: All communication radios and devices should be kept 'on' and the volume 'up'. All communications of rescue ambulances with Command Centre and/or other on-road units should be monitored by Command Centre.
- Incident detection/Notification: Whenever an incident is detected on highways by the rescue ambulance, the rescue ambulance's EMT should immediately notify the local Command Centre / 1033 call centre and Route Patrol Vehicle and provide details of the incident and request for the appropriate response.
- Incident response:
    - Provide initial first aid to road accident victims.
    - Support resuscitation and monitoring of the patient & thus prevent his/ her situation from worsening.
    - Help Highway Surveillance / Route Patrol Personnel in extrication as and when required.

- Initiate the extrication process, in cases where the rescue ambulance is the first responder to the incident.

o Scene management:

- Rescue ambulance should take the victim to the nearest appropriate hospital.

Actual number of vehicles deployed by the Contractor should meet the SLA (Service Level Agreement) requirements.

iii) Tow Away Crane/ Vehicle

The tow-away crane/vehicle shall be of adequate capacity (minimum 20MT) with all necessary equipment so that it can reach the site of the incident within 30 minutes of call and clear the disabled / accidented vehicles. It should be in good condition and registration number not older than two years at the time of procurement / leasing / hiring. It shall also be fitted with a GPS based Vehicle Tracking System to monitor its movement on 24 hours x 7 days of a week basis. Tow away crane/vehicle manpower shall include 1 Driver/Operator and 1 Helper per shift per vehicle.

The vehicle shall be painted with approved colour pattern with road authority name and emblem painted sides, back and front.

The vehicle shall run minimum 5 km daily (even for dry run), to be eligible for monthly payment.

3.6. **Integration with Computer Aided Dispatch (CAD) system / GIS based emergency response system of NHAI:**
NHAI is developing a Computer Aided Dispatch (CAD) system / GIS based emergency response system, with which the Contractor shall integrate its GPS/VTS and install its Application/ IT Solution on its communication device. The compliance of the service level requirements under this contract shall only be judged through the automatic SLA reports generated through this IT solution. No payment for IMS related services under this contract shall be made to the contractor outside the ambit of the **Computer Aided Dispatch system/ GIS based emergency response system of NHAI (once made operational, in accordance with Clause 10) except for any emergent situation duly certificated by the State PWD or M/oRT&H PIU/RO under whose jurisdiction the IMS facilities have been deployed.** The Contractor shall maintain its own register to document all calls and incidents.

3.7. **Design Approval, Acceptance Tests and Approvals for On-road units:** The minimum requirements for the commissioning and acceptance of the deployment of the on-road units by Employer / Authority and/or its representative will involve at least the following aspects:-
On-road Units' Deployment Completion Report: Details of the on-road units deployed, along with their specifications, list of equipment, personnel deployed and other documents as described in Clause 8.2.3 of TOR herein below are to be provided to Employer / Authority and/or its representative for approval.
On-road Units' Acceptance Tests: Employer / Authority and/or its representative will inspect the on-road units, the equipment on board and the personnel deployed to ensure that they meet the required specifications. The on-road unit commissioning milestone will be deemed to have been reached on the successful

completion of the Acceptance Tests duly approved by the Employer / Authority and/or its representative.

Integration with Computer Aided Dispatch system/ GIS based emergency response system of NHAI: All the on-road units deployed by the Contractor shall be integrated with the IT Solution of NHAI for intimation about the incidents, monitoring and generation of SLA reports.

3.7.1. **Cure Period:** The Contractor shall inform to Employer / Authority in writing, when they are ready to commission the on-road units, at least 15 days prior to scheduled completion for joint inspection & issuance of the Commissioning Certificate. If any minor rectification / additional works are mandated by Employer / Authority and/or its representative, the same shall be completed in all respects & commissioning certificate obtained within a period of 1 (one) month after the scheduled commissioning date.

3.8. **Standard Operating Procedure ("SOP"):** The Contractor shall design a detailed SOP Manual listing all the steps that need to be undertaken by the personnel in the 1033 and Local Command Centres and the on-road units for all incident types and sub-types. The SOP Manual needs to be submitted to Employer / Authority and/or its representative for review and approval. The following is the high-level standard operating procedure envisaged for management of all incidents by the Traffic Incident Management System:-

Step 1: Incident occurs on a National Highway

Step 2: Incident is detected on the Highway and relayed to the 1033 Command Centre by any of the following means:-

- Call from an individual through a cell phone to 1033/108 or any other helpline number applicable.
- Route Patrol Vehicle detects the incident during its patrol.
- Call from police or other emergency service providers / personnel.
- Notification through sukhad yatra app or any other app designed for the purpose of incident reporting.

Operators in the 1033 Command Centre accordingly note down on the system the details of the incident and transfer call/incident details to the concerned local Command Centre of the Contractor.

Step 3: Incident is verified at 1033 / Local Command Centre:-

- Route Patrol Vehicle reaches the location and verifies the details of the incident and provides a more accurate location details to ensure other emergency personnel reach correctly.

Step 4: 1033 / Local Command Centre dispatches appropriate response based on incident type and incident details gathered:-

- Nearest Route Patrol Vehicle available dispatched to control traffic flow in the incident location.
- Nearest Rescue Ambulance available is dispatched if there are any injuries along with the details of the nearest hospital to be taken to.
- Nearest Tow away cranes available are dispatched if there are any vehicle breakdowns that is affecting the flow of traffic.
- Operator informs local police and any other authority as necessary.
- Operator sends e-mail/SMS to all concerned personnel including the caller with the dispatch details.
- Operator tracks the dispatched vehicles on the GIS Map.

Step 5: Response arrives on scene:-

- Route Patrol Vehicle closes lanes and diverts traffic while constantly updating the 1033 / Local Command Centre.
- Rescue Ambulance removes injured people to the nearest hospital.
- Tow-away crane removes the vehicles from road.
- On receiving information from the Route Patrol Vehicle, the 1033 / Local Command Centre updates VMS, and other multi-media with details of the incident and delay expected.

Step 6: Roadway is cleared:-

- Route Patrol Vehicle updates 1033 / Local Command Centre.
- Operator enters any additional information received into the system

Step 7: Incident is closed:-

- Tow-away crane leaves the scene.
- Rescue Ambulance reaches hospital and updates the 1033 / Local command centre.
- Route Patrol Vehicle updates command centre and leaves the scene to resume patrolling of the highway.
- 1033 / Local Command Centre logs incident closed and updates the traveller information; the same is also updated in Computer Aided Dispatch system/ GIS based emergency response system.

Step 8: Normal traffic flow resumes

4. Response to emergency medical calls outside Service Area

If the Contractor receives a medical emergency call where the incident location is outside the Service Area as decided by the Authority/Employer, the Contractor should attend to the incident if the Contractor's rescue ambulance is the nearest ambulance or it can reach the incident location in 15 minutes. If not, the Contractor should transfer the call to the corresponding agency handling emergency medical services (e.g. 108 or the district hospital, etc.). The decision to attend to the incident or transfer the call should only be based on the course of action that is best suited for the patient.

The Contractor will not be held responsible for response time performance on a response outside the Service Area. However, the Contractor shall use their best efforts in responding

to calls outside the Service Area. It shall be understood that the Contractor will not leave their Service Area uncovered or understaffed when providing assistance outside the Service Area. The dispatch of on-road units to outside the Service Area is restricted to only Rescue Ambulances and not to Route Patrol Vehicles and Tow Away Cranes. The response is also restricted only to emergency medical aid and does not include normal patient transport.

If the Contractor decides not to attend to the incident, the operator handling the call should transfer it to the corresponding agency/authority and should stay on the call till the caller is connected with the concerned authority. The operator should enter details of the agency to which the incident was transferred to while closing the incident on the system. The Contractor should maintain contact details of all agencies responsible for providing emergency medical care in the States in their system.

5. **Employer's responsibility:** Employer will make available the following to the successful bidder:-
   5.1. Required approvals and relevant documentation from Employer and / or other stakeholders concerned with the highway stretch.
   5.2. Intervening / calling meetings with concerned Concessionaire(s) / Contractors / concerned agencies etc. on need basis to jointly discuss / finalize / brief the desired system / operational / functional requirement for achieving the desired results.

6. **Contractor's responsibility / obligation towards IMS:** The Contractor agrees and undertakes to fulfil the minimum service requirements / obligations as prescribed under Clause 7 of TOR. Broadly, these shall include inter-alia:-

6.1. Covering the entire Service Area as prescribed under Clause 3.1 of TOR and shall also respond to medical emergency calls outside the Service Area with the protocol prescribed in Clause 4 of TOR.

6.2. The Contractor shall be responsible for arrangement and provision of all sources of electrical power and communication for performing its duties under this contract.

6.3. Strictly complying with the prescribed timelines and specifications.

6.4. Coordinate with respective agencies for obtaining the necessary approvals before commencing works. System installation shall be done with minimal disruption to on-going operations.

6.5. **Supply, Operation & Maintenance of Ambulances for National Highways in the specified Service Area** to meet the Service Level Requirements (SLR) prescribed under Clause 7 of TOR.

6.6. Reporting Requirements: The Contractor shall provide all reports on time and in the frequency as specified in this TOR.

6.7. The Contractor shall be responsible for complying with all statutory requirements concerning the subject matter viz. compliance to Labour Laws, Tax(es), employee insurance etc.

6.8. Co-ordinating with agencies involved in emergency operations in the Service Area (e.g. Police, Fire, etc.)

6.9. The Contractor shall ensure that all personnel deployed communicate politely with all motorists. Any complaint received against any personnel deployed would be dealt with seriously by Employer / Authority.

6.10. The Contractor shall be responsible for all crimes committed by the personnel deployed while on-duty which includes but not limited to road accidents, harassing road travellers and or any other incident requiring police intervention. Employer /

Authority will not be held responsible for the actions of personnel deployed by the Contractor.

6.11. The use of cell phones and PSTN (Public Switched Telephone Network Services) in addition to the existing provisions of the RFP is permissible, only on the condition that the contractor shall be able to fulfil all the terms of reference of the RFP and should fulfil the Service Level Agreements (SLA) at its own risk and shall not shift any risk or responsibility on Employer / Authority for non-achievement of SLA and corresponding penalties in payment due to any issue of the mobile network connectivity. The bidders shall be declared responsive even if they submit proposal for use of cell phones only.

7. Service Levels

7.1. The Contractor shall monitor and maintain the stated service levels to provide quality service to Employer / Authority and motorists for entire duration of the contract period, even if the traffic in the highway stretches increases.

7.2. The Service Level parameters shall be monitored on a monthly basis as per the individual Service Level parameter requirements. The service levels of the Computer Aided Dispatch (CAD) system / GIS based emergency response system shall be monitored by the ROs of M/oRT&H while the performance of the on road units shall be monitored by the State PWD / PIU of M/oRT&H. The Contractor is expected to provide the service levels as per TOR. In case these service levels cannot be achieved at service levels defined in Clause 7.12 of TOR, it shall result in a breach of contract and invoke the penalty as described in Clause 11 of TOR.

7.3. The CAD system / GIS based emergency response system shall generate automatic reports every month to track the performance based on the SLAs. The automatic report will be sent to the concerned officer of Employer / Authority.

7.4. Payments to the Contractor are linked to the compliance with the SLA metrics as laid down in the TOR below.

7.5. SLAs will be subject to being redefined, to the extent necessitated by field experience at the user units and the developments of technology practices globally.

7.6. During the contract period, any changes to the SLA, in terms of addition, alteration or deletion of certain parameters, will be based on mutual consent of all the parties i.e. Employer / Authority and the Contractor and with a minimum thirty (30) days' notice.

7.7. It may be noted that the Contractor has to provide for the required tools to measure the SLA parameters. Employer / Authority reserves the right to appoint Third Party for the audits. Audits will normally be done on regular basis or as required by Employer / Authority and will be performed by Employer / Authority or its appointed third party agencies. The Contractor shall make provision that requisite permission is given to the Third Party Agency for carrying out the audit process on regular basis.

7.8. The Computer Aided Dispatch system/ GIS based emergency response system software utilized by the Contractor shall include security features preventing unauthorized access and full audit trail documentation.

7.9. The third party testing and audit of the system shall put sufficient emphasis on ensuring the capability of system to capture SLA compliance correctly and as specified in this TOR. The system should generate the SLA Monitoring report in the end of every month which is to be shared with Employer / Authority on a monthly basis. The system should also be capable of generating SLA reports for a Quarterly, Half-yearly and Annual basis.

Employer / Authority or its representatives will audit the tool and the scripts on a regular basis.

7.10. Penalties, if any, for non-compliance of SLAs shall be adjusted in the monthly payments. The final payment will be released after all SLA deductions.

7.11. It is to be noted that if the overall penalty applicable for any three consecutive months during the contract period is 20% or above (i.e. the service point score is less than 80 for three consecutive months), then Employer / Authority shall issue a warning notice. Once a warning notice has been issued, if it is observed that the overall penalty in a further three continuous months in any period thereafter is 20% or above (i.e. the service point score is less than 80 for three continuous months), then the Employer / Authority shall have the right to deduct an additional penalty equal to the maximum monthly amount that is admissible to the Contractor on account of IMS related services only. The Employer/Authority reserves the right to recover this additional penalty from IMS related monthly payments or O&M amounts payable to the Contractor during maintenance period of the project highway. Upon occurrence of Contractor's Default in implementation of IMS in the specified service area as per scope of the Contract, the Employer / Authority may choose to allocate the specified service area to any other Contractor for operation and maintenance of IMS, at its sole discretion and at the risk and cost of the defaulting Contractor.

7.12.

A. Definitions

(i) **Incident Detection:** The Contractor's Response Time begins at "Incident Detection" which is defined as when the 1033 Command Centre that dispatches the on-road units receives information about the occurrence of an incident and initiates the function of the dispatch for the vehicle through Computer Aided Dispatch system/ GIS based emergency response system.

(ii) **On Scene**: "On Scene" time means the moment the on-road unit arrives and stops at the location of the incident.

(iii) **Response time**: Response Time for Route Patrol Vehicle and Rescue Ambulance is defined as the interval, in exact minutes and integer seconds, between the Incident Detection time and On Scene time. For Tow Away Crane/Vehicle, the response time shall start from the moment the Patrol Vehicle or Command Centre makes a call to the Tow Away Crane/Vehicle and shall end as soon as the Tow Away Crane/Vehicle reaches the incident location.

(iv) The Contractor shall not be held accountable for Response Time compliance for any request for service originating outside of the stretches given in Service Area (as decided by the Authority/Employer).Those responses will not be counted in the number of total calls used to determine response time compliance under this Contract.

(v) If the Contractor disputes Employer's response time calculation, or the imposition of any other penalties, the Contractor may appeal to the concerned Project Zone CE in M/oRT&H in writing within ten working days of receipt of notice of penalty. The written appeal shall describe the problem and give reasons why such penalty should not be assessed. The concerned Project Zone CE in M/oRT&H will review all such appeals and make the decision to eliminate, modify, or maintain the appealed penalty.

(vi) **Network Outage :** Network outage is defined as an event when any failure occurs (even if the service is NOT interrupted) in the network due to the unavailability of any link (primary or backup), or due to a fault in the network equipment like routers, switches, firewall, IDS, Server, Desktops (including modules/ports/power supply system(s), software module etc.).

B. The criteria, SLAs (Service Level Agreements) & evaluation metrics are as follows:-

(i) **Ambulance Response Time of less than 15 mins to 36 mins** - defined as the time interval between Incident Detection and Rescue Ambulance On Scene. For incidents within 25 kms from the station/post, the ambulance response time should be less than 15 minutes and for incidents beyond 25 kms and upto 60 kms from the station/post, the ambulance response time shall be proportionally increased. This SLA of response time shall be not applicable in case the Ambulance is already on a previous call which has not been concluded and a new call is transferred to the same ambulance.

- > 95% of cases = 70 points
- 90 - 94.99% of cases = 60 points
- 85 - 89.99% of cases = 50 points
- <85% of cases = 0 points

(ii) **IT System and network uptime** - defined as "one minus the fraction of unscheduled down time per relevant period" expressed as a percentage. This is equivalent to the number of actual service hours or fractions thereof delivered compared to the number of agreed scheduled service hours for each calendar month. System will be considered unavailable if any Network Outage happens.

- >99.5% = 30 points
- 99.3% - 99.5% = 20 points
- <99.3% = 0 points

(iii) **Non-attending any dispatch call/message from 1033 Command Centre** - In case the Ambulance does not attend the dispatch call, then a penalty of Rs. 10,000/- per call shall be levied on the Contractor. A relaxation of non-attendance to only two calls per month may be allowed on technical grounds.

(iv) **Removal of Dead Animals/Birds and Accident Vehicles/Debris from Carriageway** - The Contractor will remove dead animals/birds from the carriageway and bury them at a suitable location, as directed by the Engineer / Employer, within two hours of the incident and accident vehicles/Debris within 4 hours after police inspection. If the Contractor fails to remove the dead animals/birds and accident vehicles/debris from the carriageway within specified time of the incident, he will be levied a penalty of Rs.10,000/- per such incident.

7.13. Penalties for non-compliance of SLAs

The performance of the Contractor will be evaluated monthly by adding the points accumulated for Ambulance Response Time of less than 15 mins/36 mins, as applicable, and IT System uptime and by recording the number of calls not attended by the contractor. The Contractor will be scored on a scale of 1 to 100 for Ambulance Response Time of less

than 15 mins / 36 Minutes, as applicable, and IT System uptime. The Computer Aided Dispatch system/ GIS based emergency response system will generate automatic reports to track the performance based on the SLAs. The automatic report will be sent to the concerned officer(s) of Employer / Authority. These SLA requirements shall be strictly imposed. The concerned officer at the State PWD along with the RO of M/oRT&H will be responsible for reviewing the performance of the Contractor against the SLAs. A payment disincentive has been designed on basis of the following criteria which will be applicable against the total points accumulated. If the total points accumulated by the Contractor in a month are between:-

- 90 to 100 points - 100% of amount payable for IMS related services will be paid
- 85 to 89 points - 95% of amount payable for IMS related services will be paid
- 80 to 84 points - 90% of amount payable for IMS related services will be paid
- Less than 80 points - 80% of amount payable for IMS related services will be paid

In addition to above, a penalty of Rs. 10,000/- per call not-attended to shall be levied on the Contractor over and above the above given penalty provisions.

Further, in case the Contractor fails to remove the dead animals/birds and accident vehicles/debris from the carriageway within specified time of the incident [Clause 7.12B(iv)], he will be levied a penalty of Rs.10,000/- per such incident, over and above the above given penalty provisions.

If the Contractor fails to meet the requirements of the contract in any one of the following ways, the Contractor will also be required to submit an Improvement Plan detailing out steps/ initiatives to improve performance against each one of the designed SLAs:-

The Contractor receives a score of less than 85 points for two consecutive months;

or

The Contractor receives a score of less than 90 points for three consecutive months;

or

The Contractor receives a score less than the maximum for a particular SLA for three consecutive months (e.g. Ambulance Response Time score of less than 70 for three consecutive months)

If the overall penalty applicable for any three consecutive months during the contract period is 20% or above (i.e. the service point score is less than 80 for three consecutive months), then Employer / Authority shall issue a warning notice. Once a warning notice has been issued, if it is observed that the overall penalty in a further three continuous months in any period thereafter is 20% or above (i.e. the service point score is less than 80 for three continuous months), then the Employer / Authority shall have the right to deduct an additional penalty equal to the maximum monthly amount that is admissible to the Contractor on account of IMS related services only. The Employer/Authority reserves the right to recover this additional penalty from IMS related monthly payments or O&M amounts payable to the Contractor during maintenance period of the project highway. Upon occurrence of Contractor's Default in implementation of IMS in the specified service area as per scope of the Contract, the Employer / Authority may

choose to allocate the specified service area to any other Contractor for operation and maintenance of IMS, at its sole discretion and at the risk and cost of the defaulting Contractor.

8. **Implementation Schedule:** Following is the implementation schedule to be followed by the Contractor. Any delays in adhering to the below schedule shall result in penalties described in Clause 11.1 of TOR.

Scope of Work	**Submission Schedule**
Detailed project schedule	M0+01month
On-road units deployment plan	
On-road units procurement plan	
On-road units integration plan with Computer Aided Dispatch system/ GIS based emergency response system of NHAI	
Manpower deployment plan	
On-road units training plan	M0+02 months
Computer Aided Dispatch system/ GIS based emergency response system training plan	
Progress report on overall project schedule pertaining to deployment of IMS and deployment plans / procurement plans submitted in M0+01month	
Standard Operating Procedures	
Computer Aided Dispatch system/ GIS based emergency response system integration completion report	M0+03 months
Submission of CVs and qualification of all personnel to be deployed in On-road units	
Site Acceptance Test (SAT) report	
Training completion report	
Mapping of important locations for entire deployment	
Phonebook/directory of all personnel/bodies involved in Incident Management	
Commissioning certificate for rollout of on-road units of IMS covering 100% of Service Area	M0+04 months
Note: "M 0" shall be taken as the Date which precedes the Provisional Completion Date for civil works by 4 months.	

M/oRT&H and/or its authorized representatives will carry out audits and reviews in Month 1, 2 and 3 to ensure that the integration and procurement of on-road units are as per the specifications. The Contractor is required to ensure that there is no unnecessary delay in roll-out of on-road units for Operation and Maintenance (O&M) of Incident

Management Services in the specified service area during the entire period of engagement of IMS.

The following are the reports to be submitted by the Contractor in the O&M stage. Any delays in adhering to the below schedule can result in penalties described in Clause 11.2 of TOR.

Scope of Work	Submission Schedule
SLA Compliance Report	Monthly
Staffing Report	
Asset Inventory Report	
Change Control Process Report	As an when required
Innovation and Improvement Plan	Annual

8.1. **Detailed Project Schedule**

- The Contractor shall develop a detailed project schedule using the Critical Path Method (CPM). The schedule shall include delivery dates for all deliverables, milestones, reports, scheduled meetings, reviews, equipment preventive maintenance and staff training. The schedule should include major critical involvement by Employer / Authority's personnel, such as reviews.

8.2. **On-road units**

8.2.1. On-road Units Deployment Plan

- Should contain the total number of Rescue Ambulances, Route Patrol Vehicles and Tow Away Cranes.
- Should contain the location of the on-road units in latitude/ longitude and in chainage terms.
- Should also contain the area to be covered by each Route Patrol Vehicle in kilometres along with the details of the starting and ending latitude and longitude which each Route Patrol Vehicle will patrol.
- Should contain the methodology (e.g. geo analysis of accident data) to arrive at the locations of the on-road units.
- Should also mention the variations in on-road units deployed based on time-of-day, number of lanes, etc.

8.2.2. **On-Road Units' Procurement Plan**

- Should have on-road units' procurement strategy including method of procurement (i.e. buy, lease, or a combination thereof).
- Should have information about type, make, model and specifications of vehicles to be procured.
- Should have details of any additional equipment the Contractor may deploy in addition to the minimum equipment list as given in the specifications.

8.2.3. **On-road Units Deployment Completion Report**

- Should include a complete listing of all on-road units deployed including their license/registration number and vehicle identification numbers.
- Should also contain the details of the vehicle owner (in case of renting or leasing) including name, address and telephone number.
- Should also include type, make, model and specifications of vehicle procured.
- Should also include the details of vehicles kept in reserve.

- Copy of Registration Certificate of all vehicles (including reserve vehicles) to be submitted along with this report.
- Should also include the list of equipment kept in each vehicle.
- Training certificate of every personnel employed in the on-road units should also be submitted along with this report.
- Changes in the ownership of the on-road units, including changes of the vehicle owner (in case of renting or leasing) as well as transfer of ownership, purchase or sale of on-road units used under the Contract shall be reported to Employer / Authority.

8.3. **Manpower**

8.3.1. **Manpower Deployment Plan**

- Should contain hiring procedures, workers compensation, leave practices, shift timings, acceptable employee conduct, etc.
- Should contain details of manpower deployed (on-road and IT/Database Admin **Computer aided dispatch system/ GIS based emergency response system**) for each shift.
- Should also contain details of manpower deployment for peak periods (if any).
- Should have details about the organization structure, reporting relationships, etc.

8.3.2. **Submission of CVs and qualifications of all personnel to be deployed including that of on-road units**

- Should contain for each personnel to be deployed their college/university and other specialized education giving names of schools, dates attended and degrees and marks obtained along with proof of qualification.
- Should contain for each personnel to be deployed their employment record starting with their current position, list in reverse order, every employment held since graduation giving details of dates and period of employment, names of employing organization, title of positions held and location of assignments.
- Experience certificate and degree certificate must be attached along with the CVs.

8.4. **Trainings**

8.4.1. **On-road Units Training Plan**

- Should contain the list of courses (for EMT and for Driver to act as his/her assistant) and their description that every personnel will be trained on along with the mode of training during initial 4 months of implementation phase.
- Should contain the detailed training manuals that will be used during the training.
- Should contain the list of activities/practical examples of the training.
- Should contain the details of the institute in which the trainings are conducted; if the trainings are conducted in-house, should contain the details of all the trainers/instructors and their qualifications.
- Should contain the detailed training schedule.
- Every year a refresher training course shall be arranged for all the EMTs/Paramedics and all the drivers.

8.4.2. **Computer Aided Dispatch system/ GIS based emergency response system Training Plan**

- Should contain the list of courses and their description that every personnel will be trained on along with the mode of training.
- Should contain the detailed training manuals that will be used during the training.
- Should contain the list of activities/practical examples of the training.
- Should contain the details of the institute in which the trainings are conducted; if the trainings are conducted in-house, should contain the details of all the trainers/instructors and their qualifications.
- Should contain the detailed training schedule.

8.4.3. **Training Completion Report**

- Certification from the institute/instructor that all the trainings prescribed in the specifications were completed according to the training manual submitted. This shall be subject to surprise inspection by officers of Employer / Authority or its representatives authorized for this task.

8.5. **Traffic Incident Emergency Management System**

8.5.1. **Standard Operations Procedure manual**

- The manual is for all users of the system including but not limited to:-
  - Operators
  - Supervisors
  - Route Patrol Vehicle personnel
  - Rescue Ambulance personnel
- The Manual shall be in made in such a fashion that all users of the system are able to perform their assigned duties without any errors.
- The Manual should outline procedures to be followed in a variety of situations including but not limited to:-
  - Call Taking
  - Hang-up calls
  - Abandoned Vehicles
  - Breakdown vehicles
  - Alarm responses
  - Emergency Medical Dispatch
  - Motor Vehicle Accidents
  - Patrolling
  - Calls from non- Service Area
  - Calls on traffic information
  - Unauthorized parking
  - Dead animals
  - Hazardous chemical spills

8.5.2. **Phonebook / Directory Of All Personnel / Bodies Involved In Incident Management**

- Should include details of contact personnel, phone numbers and jurisdiction details.
- Should include details of all police stations, fire stations and emergency medical services available close to the Service Area.

8.6. **Mapping**

- Should include latitude and longitude details of Toll Plazas, CCTV cameras, VMS signs, police stations, fire stations, Primary Health Centres of State Govt., Pvt. Nursing Homes, Trauma centres, accident black spots, petrol pumps, other M/oRT&H / State PWD offices/buildings, milestones (e.g. KM stones/Hectometer)
- Should include starting and ending latitude and longitude of National Highway, State Highways, State and district boundaries, etc.

8.7. **Operations Requirements**

8.7.1. **Site Acceptance Test (SAT) Report**

- **Integration of Computer Aided Dispatch system/ GIS based emergency response system** from call handling to incident management must be tested after installation in the operational environment.
- After approved SAT report, the system can begin operations.
- It should include but not limited to:-
  - Installation verification according to system design
  - Functionality verification according to specification
  - Operator's training
- Third Party as appointed by Employer / Authority or its representative will be present along with representatives from the Contractor.
- Employer / Authority must receive the SAT cases one week before the SAT is scheduled.

8.8. **Computer Aided Dispatch system/ GIS based emergency response system Commissioning Certificate**

- On successful completion of tests, M/oRT&H shall issue Commissioning Certificate. Only then, **Computer Aided Dispatch system/ GIS based emergency response system** can begin operations.

8.9. **On-road Units Commissioning Certificate**

- Prior to on-road deployment for operations, the review of on-road units will be carried out to ensure that all vehicles meet the specifications and have all the required equipment on board.
- All manpower to be deployed should have completed the requisite trainings.
- M/oRT&H shall issue the Commissioning Certificate. Only then, can the on-road units be deployed for operations.

8.10. **SLA Compliance Report**

- On or after the effective date, at the beginning of each month, the Contractor shall submit the SLA reports described in Clause 7 of TOR throughout the period of engagement of IMS.

8.11. **Staffing Report**

- On or after the Effective Date, at the beginning of each month, the Contractor shall submit a written list of all personnel working on this Project pertaining to IMS, throughout the period of engagement of IMS.
- The Contractor shall develop a staffing report for all the new staff hired in On-road units and in accordance with the guidelines described in Clause 8.3 of TOR above.
- In case of any change in the Staffing Plan, the Contractor shall update the Staffing Plan and submit for Employer / Authority's review thereafter.

8.12. **Change Control Process**

- The Change Control Process must be documented and submitted in case of changes made to the initial system including but not limited to:-
  - Positioning of on-road units
  - SOPs
  - New technologies
  - Training Manuals
  - Adding equipment to on-road units
- Report should include the reason for the change, impact on the existing system and stakeholders impacted.
- The document will serve as an audit trail for all changes made to the system after commissioning of the on-road units and **Computer Aided Dispatch system/ GIS based emergency response system.**
- The document will serve as an authorization of all changes by the relevant stakeholders.

8.13. **Asset Inventory Report**

- The Contractor shall conduct a review of diminishing spares and equipment used in various On-road Units and **Computer Aided Dispatch system/ GIS based emergency response system**. This shall include but not be limited to items of short lead-time for order and high turnover rate.

8.14. **Innovation and Improvement Plan**

- The Contractor shall develop an Innovation and Improvement Plan on an annual basis to detail how the Contractor shall improve existing services by researching and developing innovative technologies, including:-
  - Identification of how the Contractor will ensure future sustainability of its systems and services at the end of the contract;
  - Identification and raising M/oRT&H's awareness of new technologies suited to the detection of incident, fast and speedy response to incident and dissemination of traffic information;
  - Outline new or potential improvements in placement of on-road using the data obtained from accident locations and ensure speedy incident response;
  - Improvement in organization and management and workforce capabilities, including organizational structure, staff capacity, development and retention, throughout the Term of the Contract;
  - Outline new or potential improvements to the Services including the quality, responsiveness, procedures, benchmarking methods, likely performance mechanisms and M/oRT&H support services in relation to the Services

9. Governance and Review

The Contractor and Employer / Authority shall establish a Program Management and Governance Committee consisting of representatives of Employer / Authority and the Contractor. The mission of this Committee is to review incident management related policies, procedures and standard operations, maintenance and system software guidelines.

The following reviews will be conducted:

1. Performance Review will be conducted monthly by EE of State PWD / PD of PIU, M/oRT&H and quarterly by RO M/oRT&H.
2. Continuous Improvement Plan Review will be conducted half-yearly.
3. Innovation Plan Review will be conducted annually.

9.1. Performance Review

The Contractor shall provide monthly SLA compliance reports (that are automatically generated) and quarterly performance compliance statements.

The objectives of the Performance Reviews are to:-

- Assess performance delivery
- Assess progress of work
- Assess schedule of work
- Discuss any technical and operational issues
- Discuss/comment on deliverables or performance of the SLAs.

The performance review and monitoring responsibilities shall be as follows:

- RO M/oRT&H shall monitor the overall performance of the Contractor on a quarterly basis.
- EE of State PWD / PD of PIU M/oRT&H shall monitor the performance of the Contractor on a monthly basis.
- EE of State PWD / PD of PIU M/oRT&H shall inspect the on ground units (Rescue Ambulances, Route Patrol Vehicles, Tow-away Cranes) on a monthly basis.

9.2. Continuous Improvement Plan Review

The Contractor shall provide a half-yearly continuous improvement plan or as requested by Employer / Authority.

The Continuous Improvement Plan review involves:

- Innovations in delivery of services performed by the Contractor to improve performance, improve reliability or reduce cost for the same or enhanced level of service.
- Improvements in relationships with public safety agencies, local governments, State Police, and the motoring and general public.
- Improvements in organization and management and workforce capabilities, including organizational structure, staff capacity, development and retention, throughout the term of the contract.
- Innovations in the delivery of services to optimize the performance of existing infrastructure through the implementation of new systems, emerging technologies and services that preserve capacity and improve reliability and safety, throughout the Term of the Contract.
- Implementation of new technologies suited to incident management and traffic information, throughout the term of the Contract.

9.3. Innovation Plan Review

The Contractor shall develop an Innovation Plan on annual basis or upon Employer / Authority's request to detail how the Contractor shall research and develop innovative technologies, including:-

- Identification and raising M/oRT&H's awareness of new technologies suited to the collection, use and dissemination of traffic information;
- Evaluation of potential new technologies that may improve delivery of the Services and where such technologies are considered suitable, provide implementation timelines;
- Outline new or potential improvements to the Services including the quality, responsiveness, procedures, benchmarking methods, etc.
- Outline new or potential improvements to the interfaces or integration of the Services with other services provided by third parties or M/oRT&H / NHAI which might result in efficiency or productivity gains or in the reduction of operational risk;
- Outline changes in business processes and ways of working that would enable the Services to be delivered at lower costs and/or provide other benefits.

10. Payment Terms :

Implementation Phase: The Contractor shall be given maximum of 4 months for preparing the set-up of the IMS related services with the milestones undertaken and completed in accordance with the time schedules in this Agreement. During this period, no payment related to IMS shall be given by the Authority/Employer to the Contractor. The details of the milestones in this phase are as under:-

Scope of Work	Submission Schedule
Detailed project schedule	M0+01month
On-road units deployment plan	
On-road units procurement plan	
On-road units integration plan with Computer Aided Dispatch system/ GIS based emergency response system of NHAI	
Manpower deployment plan	
On-road units training plan	M0+02 months
Computer Aided Dispatch system/ GIS based emergency response system training plan	
Progress report on overall project schedule pertaining to deployment of IMS and deployment plans / procurement plans submitted in M0+01month	
Standard Operating Procedures	
Computer Aided Dispatch system/ GIS based emergency response system integration completion report	M0+03 months
Submission of CVs and qualification of all personnel to be deployed in On-road units	

Scope of Work	Submission Schedule
Site Acceptance Test (SAT) report	
Training completion report	
Mapping of important locations for entire deployment	
Phonebook/directory of all personnel/bodies involved in Incident Management	
Commissioning certificate for rollout of on-road units of IMS covering 100% of Service Area	M0+04 months
Note: "M 0" shall be taken as the Date which precedes the Provisional Completion Date for civil works by 4 months.	

Operation and Maintenance Phase: Payments to the Contractor shall be made monthly retrospectively against IMS related services rendered on the project stretch during the operation and maintenance phase only and in accordance with the Service Level Requirement (SLR) mentioned in Clause 7 of TOR. The SLA reports will be assessed on a monthly basis and any penalty will accordingly be deducted from the monthly payout. The operation & maintenance of IMS in the specified service area shall start as soon as the implementation phase of IMS has been completed by the Contractor.

While O&M payments to the Contractor during the maintenance period of the project highway shall be made on quarterly basis, **the IMS related payments shall be processed on monthly basis** after submission of SLA compliance report by the Contractor (system generated) and its inspection and approval by Employer / Authority and/or its representative. The payment shall be as per monthly rates quoted for on road units and payment for any additional running of the vehicles as per rates quoted for additional running of the vehicles. Further, deductions shall be made as per the SLA requirement in the RFP.

However, in case the Computer Aided Dispatch / GIS based emergency response system of NHAI is not commissioned / operational before the commissioning of the on-road units of IMS, the performance of the on-road units shall be judged based on the report of the concerned State PWD / PIU of M/oRT&H under whose jurisdiction the IMS related services are deployed. Payments for IMS related services shall be made to the Contractor based on such manually generated reports until such time as the Computer Aided Dispatch / GIS based emergency response system of NHAI is made operational.

11. Penalties

11.1. **Penalties for delay in setting up the system:** Failure by the Contractor to complete the works and remedy all reported defects within the prescribed time for commissioning and cure period shall result in the application of the penalty for delay. The Penalty will be applied at the rate of 5% of the Annual Contract Value component on account of IMS related services only, per week of delay in meeting the milestones and timelines as given in Clause 8 of TOR, upto a maximum of 10%

of the Contract Value component on account of IMS related services only for the entire duration of IMS.

11.2. **Deleted**

11.3. **Penalties for non-compliance of SLAs is stated in** Clause 7.13 of TOR.

11.4. Upon occurrence of Contractor's Default in implementation of IMS in the specified service area as per scope of the Contract, Employer / Authority may choose to allocate the said site to any other Contractor for operation and maintenance of IMS, at its sole discretion and at the risk and cost of the defaulting Contractor.

11.5. In case of delay due to reasons beyond the control of the Contractor, upon such request from the Contractor, Employer / Authority may, in its sole discretion, consider suitable extension of time without imposing any penalties upon the Contractor.