

**QUESTIONNAIRE TO SEEK INDUSTRY RESPONSE FOR MAKE-I PROJECT**  
**ARMY INTEGRATED DECISION SUPPORT SYSTEM (AIDSS)**

1. The questionnaire to seek Industry response for carrying out feasibility study is given in succeeding paragraphs.
2. Interested entities may respond by **17 July 2023** on the address given below:-

Lt Col Amit Bector  
GSO-1 (SA)  
Project Management Organisation  
Command Information and Decision Support System  
Directorate General of Information System  
Integrated HQ of MoD (Army)  
DGIS Enclave, Rao Tula Ram Marg  
New Delhi - 110010  
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3. First vendor interaction for solving/ clarifying the queries will be organised on **22 June 2023**. Vendors are requested to forward their queries on email - [cidss.dgis@gov.in](mailto:cidss.dgis@gov.in) by **16 June 2023**. Vendors desirous of attending the interaction are requested forward their names alongwith designation 48 hours prior to the planned interaction by email at [cidss.dgis@gov.in](mailto:cidss.dgis@gov.in).
4. The response to any question should not be left blank to facilitate realistic assessment.

<b><u>Ser No</u></b>	<b><u>Aspects</u></b>	<b><u>Response</u></b>
1.	<b><u>Vendor Information</u></b>	
	(a) The category of the Company, whether Large/ Medium/ Small or Start Up/ DPSU/ CPSU	
	(b) Years of existence (Established in year_____).	
	(c) Annual turnover of the Company in crore for last three financial years (FY).  (i) FY 2020-21. (ii) FY 2021-22. (iii) FY 2022-23.	

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	(d) The Credit Rating of the Company and Net Worth in Crores for last three financial years (FY):- (i) FY 2020-21. (ii) FY 2021-22. (iii) FY 2022-23.	
	(e) Annual Profit in the last three financial years in Crores.	
	(f) Is Ownership Indian or Foreign or Joint Venture?	
	(g) The Shareholding Pattern of the Company (Indian and Foreign) in percentage to be stated. All details to be provided.	
	(h) Whether the Company is OEM, Manufacturing Agency or System Integrator?	
	(j) Experience of the Company in software development & system integrator related fields in years.	
	(k) Whether similar Project has been undertaken for any other government agency (Type of project, cost & year of supply to be highlighted).	
	(l) Whether company has existing patents/ IPR/ filed any patents (pending approval) related to any defence related Decision Support System or any similar software.	
	(m) Whether the Company has any tie-ups/Joint Ventures with any foreign firm for producing similar equipment.	
2.	<b><u>Assessment of Capability of Indian Industry</u></b>	
	(a) Please list out the details of your entity (Company/Firm/Consortium/JV) in each of following aspects:- (a detailed response will facilitate in a realistic assessment)	
	(i) Would your company be able to provide the AIDSS application software by itself?	
	(ii) If the answer to previous question is No then would your company be forming a consortium for meeting the requirement?	
	(iii) If the answer to the previous question is Yes, then is your company the designated Lead Member of the consortium/ JV?	
	<b><u>3. Applicability of Foreclosure Criteria</u></b>	
	You are requested to confirm that your entity (company/firm/Consortium/JV) will accept the foreclosure criteria for Make-I Category as specified in Para 20 (a), Chapter-III of DAP 2020 or as amended in future by the MoD, GOI.	

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4.	<p><b><u>Vendor Infrastructure</u></b></p> <p>(a) Does the Company have adequate infrastructure to develop, integrate and manufacture? If yes, details to be provided. If not, what would be the procedure and timelines to establish the same.</p> <p>(b) Does the Company have adequate manpower, infrastructure for establishing a test bed, carrying out trials and testing of the software?</p> <p>(c) Number of employees working in R &amp; D of integration softwares related to the Decision Support System.</p> <p>(d) Whether Company has produced any integration software for government agency? If yes, details of product with quantity, cost &amp; year of supply be provided.</p>	
5.	<p><b><u>Envisaged Cost &amp; Annual Technical Support</u></b></p> <p>(a) Cost of the prototype software and the customised software as a product (unit cost &amp; total cost) likely life cycle cost of the system.</p> <p>(b) Recommendations for Annual Technical Support/ warranty or to be maintained by the Army with adequate training.</p> <p>(c) In case of Annual Technical Support maintenance in % of total Cost without taxes.</p> <p>(d) Taxes in % (Type of taxes to be enumerated)</p> <p>(e) What the level of ATS is envisaged for minimizing downtime.</p> <p>(f) Will special tools be provided for carrying out error correction and detection.</p> <p>(g) Is the ATS same for all subsequent years. If not then rate of change per year may clearly be given out.</p> <p>(h) Quantity of prototype licences recommended for user trails.</p> <p>(j) Likely life cycle cost of the system.</p> <p>(k) Minimum quantity of licences economically viable for business.</p> <p>(l) What is included in the annual technical support package?</p> <p>(m) What are the specific response time commitments for technical support requests?</p> <p>(n) How can technical support be accessed, such as through a dedicated support portal, email, or phone?</p>	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(o) Is there a designated support team or point of contact for technical support?	
	(p) What are the support hours and availability, including any after-hours or weekend support options?	
	(q) Are there any limitations or exclusions to the technical support coverage?	
	(r) Is there a ticketing system or case management process in place for tracking and resolving technical support issues?	
	(s) What is the process for escalating critical or urgent technical support requests?	
	(t) Are there any remote access capabilities or screen-sharing tools available for troubleshooting and resolving technical issues?	
	(u) Are software updates and patches included in the annual technical support package?	
	(v) Are there any additional fees or costs associated with technical support beyond the annual support package?	
	(w) What is the procedure for reporting and tracking technical support requests?	
	(x) Is there a knowledge base or online documentation available for self-service troubleshooting and guidance?	
	(y) Are there any training resources or materials provided as part of the annual technical support?	
	(z) What is the duration and renewal process for the annual technical support Package?	
6.	<b><u>Indigenous Content</u></b>	
	(a) Likely achievable indigenous content at prototype as well as at production stage in %.	
	(b) Details of IC of important sub-sofwares and enabling technologies.	
	(c) Critical/core technologies/ softwares identified which are not likely to be available in India, to be sourced ex-import (in cost percentage terms).	
	(d) Critical/Core technologies/ softwares being indigenised or not being indigenised.	
	(e) Sub-sofwares/ licences developed by the company and details of outsourced softwares along with details of the developer/ company/ manufacture.	

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7.	<b><u>Application Architecture Meta Model</u></b>		
	(a) The vendor is required to clearly indicate suitability and validate the design and architecture of the AIDSS application software as under:-		
	(i) View Layer	This layer comprises of thin client, mobile applications, etc. used by the end-user to access the applications.	
	(ii) Presentation Layer	This layer receives inputs from the View Layer and invokes respective services. It is responsible for delivery and formatting of information. It receives the presentation data from application components and returns it to View layer.	
	(iii) Service Layer	This layer comprises of all the Services that are defined in the Service Oriented Architecture	
	(iv) Component Layer	This layer contains software components, each of which provides the implementation or “realization” for services and their operations. The layer also contains the Functional and Technical Components that facilitate a Service Component to realize one or more services.	
	(v) Business Logic Layer	This layer enables modelling and designing business processes.	
	(vi) Data Access Layer	This layer provides data from the Data Layer to Business Logic Layer.	
	(vii) Data Layer	This layer comprises of the Applications Database.	
	(viii) Interoperability Communication Layer	All integrations shall be affected through this layer. This layer facilitates effective Mediation Services, provides Adapters, Transport protocols, Service Management, Security features, etc. Translation Logic required for integration is built in this layer.	
	(ix) Application Layer	Applications comprises of SOA compliant applications	

<u>Ser No</u>	<u>Aspects</u>			<u>Response</u>
	(x)	FCAPS Layer	This is the management layer responsible for managing the application component. FCAPS stands for <b>Fault, Configuration, Accounting, Performance and Security</b> functions.	
8.	<b><u>Application Architecture Standards</u></b>			
	(a)	The vendor is required to clearly indicate suitability and validate the design and architecture of the AIDSS application software as under:-		
	(i)	The envisaged Architecture intends to ensure interoperability of all the processes in the system along with seamless upgradation/ migration and addition of new applications/ processes to the system.		
	(ii)	The Application Architecture should adhere to (but not limited to) applicable standards, such as <b>Interoperability Framework for e-Governance (IFEG) and Technical Standards for Interoperability Framework for E-Governance in India</b>		
9.	<b><u>Application Component Standards</u></b>			
	(a)	The vendor is required to clearly indicate suitability and validate the design and architecture of the AIDSS application software as under:-		
	(i)	The application layer has to support common standards for application level and service level Interoperability.		
	(ii)	The applicable technology minimum standards for AIDSS Application layers are as follows:-		
	(aa)	<b>Network Access Layer</b>		
	<b>#</b>	<b>Interoperability Area</b>	<b>Standard / Specification</b>	<b>Standard Body</b>
	(aaa)	Internet Protocol – 32 Bit	IPv4	IANA
	(aab)	Internet Protocol – 128 Bit	IPv6	IETF
	(aac)	Authentication and Authorization Data Exchange	SAML 2.0	OASIS
	(aad)	Hypertext Transfer	HTTP/2	IETF, W3C
	(aae)	E-Mail Transport	Extended SMTP additions by RFC 5321	IETF
	(aaf)	Directory Access	LDAP v3 / X.500-lite	IETF
	(aag)	Domain Name Services	DNS	IETF

<b><u>Ser No</u></b>	<b><u>Aspects</u></b>			<b><u>Response</u></b>
	<b>(ab) Presentation Layer</b>			
<b>#</b>	<b>Interoperability Area</b>	<b>Standard / Specification</b>	<b>Standard Body</b>	
(aaa)	Document Type for Simple Hypertext Web Content	ISO/ IEC 15445:2000 (HTML 5)	ISO / IEC W3C	
(aab)	Document type for Complex, Strict Hypertext Web Content (XML or non-XML)	HTML v5 / XHTML v5	W3C	
(aac)	Style Sheets (to define Look & Feel of Web-page)	CSS 3	W3C	
(aad)	Extensible Style Sheets (to transform format and addressing parts of documents)	XSL 1.1	W3C	
(aae)	Content for Mobile Devices – Hypertext Markup Language	HTML / XHTML	W3C	
(aaf)	Document Type for Editable documents (with formatting)	ISO / IEC 26300-1: 2015 (ODF- Open Document v1.2)	ISO / IEC OASIS	
(aag)	Document Type for Presentation	ISO / IEC 26300-1: 2015 (ODF- Open Document v1.2)	ISO / IEC OASIS	
(aah)	Document Type for Non-editable documents	ISO 32000-1: 2013 (PDF 1.7)	ISO / IEC	
(aaj)	Graphics – Raster Image (Lossy Compression) – Exchange	JPEG2000 / JPG Part 2	ISO / JPEG Committee	
(aak)	Graphics – Raster Image (Lossy Compression) – Exchange Format for Normal cases (like Web, Desktop applications)	JPEG, PNG	ISO / JPEG Committee	

<b>Ser No</b>	<b>Aspects</b>			<b>Response</b>
	<b>(ac) Security Layer</b>			
	<b>#</b>	<b>Interoperability Area</b>	<b>Standard / Specification</b>	<b>Standard Body</b>
	(aaa)	Secure Electronic Mail	S/MIME 3.1 / 3.2 latest	IETF
	(aab)	Hypertext Transfer Protocol over Secure Socket Layer, or HTTP over SSL	HTTPS	IETF
	(aac)	Secure Socket Layer	SSL 3.0	IETF
	(aad)	Transport Layer Security for Server and Web Browser	TLS 1.2 / 1.3 latest	IETF
	(aae)	XML Signature for XML Message signing	XML Signature	W3C
	(aaf)	XML Encryption for XML Message encryption	XML Encryption	W3C
	<b>(ad) Data Interchange Layer</b>			
	<b>#</b>	<b>Interoperability Area</b>	<b>Standard / Specification</b>	<b>Standard Body</b>
	(aaa)	Web Services Description Language	WSDL 2.0	W3C
	(aab)	Web service request delivery	SOAP 1.3	W3C
	(aac)	Web Services Security – Basic Security Profile	Basic Security Profile v1.1	OASIS
	(aad)	Web Services Security – SOAP message security	SOAP Message Security v1.1.1	OASIS
	(aae)	Web Services Security – Username Token Profile	Username Token Profile v1.1.1	OASIS
	(aaf)	Web Services Security – X.509 Certificate Token Profile	X.509 Certificate Token Profile v1.1.1	OASIS
	<b>(ae) Data Integration Layer</b>			
	<b>#</b>	<b>Interoperability Area</b>	<b>Standard / Specification</b>	<b>Standard Body</b>
	(aaa)	Data Description Language (for exchange of data)	XML 1.0	W3C
	(aab)	Data Schema Definition	XML Schema (XSD) 1.1 Part 1: Structures, XML Schema Part 2: Datatypes	W3C

<u>Ser No</u>	<u>Aspects</u>			<u>Response</u>	
	(aac)	Data Transformation for Presentation	XSL 1.1	W3C	
	(aad)	Data Transformation for conversion from XML schema format to another format	XSLT 2.0 / 3.0	W3C	
	(aae)	Content searching and navigation in an XML document	XPath 3.0	W3C	
	(aaf)	XML vocabulary for specifying formatting semantics	XSL 1.1	W3C	
	(aag)	Meta-data elements for content	ISO 15836:2009 / 2012 (Dublin Core Metadata Element set)	ISO / IEC	
10.	<b><u>Technology Standards</u></b>				
	(a) The vendor is required to clearly indicate suitability and validate the design and architecture of the AIDSS application software as under:-				
	#	<b>Technology Standards</b>			
	(i)	<b>Architecture-</b> The application architecture should be n-tiered and must include all necessary software components. Architecture shall allow for future scalability and scope addition by way of defining new services.			
	(ii)	<b>Interoperability-</b> Vendor shall propose the solution and technology platform that is based on the open standards, provide interoperability with other operating systems and application servers, guarantee portability of data and content and that the best meets the functional, non-functional and technical specifications.			
	(iii)	<b>Integration with Existing IT Applications:</b> Vendor should ensure that the proposed solutions are having necessary interfaces for data exchange with the existing IT applications.			
	(iv)	<b>Web Services-</b> Vendor should ensure that the solutions proposed be integrated based on open standards supporting Web Services principles			
	(v)	<b>Multilingual interface-</b> The system should provide multilingual interface/labels in languages of minimum English and Hindi			
	(vi)	<b>Compatibility-</b> The system should run on multiple browsers			
	(vii)	The solution architecture should be platform, database and vendor independent.			

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	(viii) The solution is required to provide modularity (business function and process) that should support addition / removal of one or more modules as and when required.	
	(ix) The solution should ensure data safety and integrity in the event of communication channels operation failures, software and hardware operability failures.	
	(x) The solution should have the ability to scale up as and when the new applications and services are added without compromising the performance of the overall solution. The architecture should be proven to be highly scalable and capable of delivering high performance as and when the transaction volumes increase.	
	(xi) System should employ a common user access and authentication service to ensure Single-Sign on for the end-user.	
	(xii) The system should be developed to be deployed in n-tier data center Architecture.	
	(xiii) System should be extensible to provide access to the interfaces through mobile data terminals.	
	(xiv) System should support secure transmission of data over the network and support Secured Socket Layer (SSL).	
	(xv) Any access to the solution database shall only be via application after appropriate authentication	
	(xvi) System should support requirement of OTP and digital certificates for authentication and non-repudiation.	
	(xvii) As part of their response, the vendor shall provide the detailed architecture and comprehensive Bill of Materials matrix for all components of the proposed solution.	
11.	<b><u>System Requirements</u></b>	
	(a) How will the application handle scalability requirements if the user base grows?	
	(b) What are the expected data storage requirements, including the size of the data lakes or data warehouses?	
	(c) Will the application be able to handle real-time data feeds, and if so, what are the expected data ingestion rates?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(d) Are there any specific security requirements for accessing and storing sensitive military data?	
	(e) What are the backup and disaster recovery requirements for the application and its data?	
	(f) What are the integration requirements with existing systems?	
	(g) Specify performance benchmarks or response time requirements for the application?	
	(h) What are the compliance requirements, such as data privacy regulations or military standards?	
	(j) Specify development platform, programming languages, or frameworks?	
12.	<b><u>System Performance and Resilience</u></b>	
	(a) How will the system handle scalability requirements to accommodate an increasing number of concurrent users or data volume without significant degradation in performance?	
	(b) Suggest there any specific performance optimization techniques or caching mechanisms that will be implemented?	
	(c) How will the system handle peak load situations or spikes in user activity?	
	(d) Will the system utilize load balancing techniques to distribute the workload across multiple servers or instances?	
	(e) What measures will be taken to ensure the system's availability and resilience in the event of hardware or software failures?	
	(f) Are there any specific disaster recovery or business continuity requirements for the system?	
	(g) Will the system provide real-time monitoring and alerting mechanisms to proactively identify and address performance issues?	
	(h) How will the system handle data backup and restoration processes to prevent data loss or corruption?	
	(j) Can the system support failover and redundant configurations to minimize downtime during hardware or network failures?	
	(k) Are there any specific requirements for data replication or synchronization across multiple geographically dispersed locations?	
	(l) Will the system be designed with fault-tolerant architectures to minimize the impact of individual component failures?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(m) How will the system handle graceful degradation or load shedding in scenarios where resource limitations occur?	
	(n) Can the system handle automated scaling based on demand, such as auto-scaling of servers or resources?	
13.	<b><u>Database Management System</u></b>	
	(a) What type of database management system (DBMS) will be used for the application?	
	(b) How will the database be designed and what level of normalisation to efficiently store and retrieve the application's data?	
	(c) Will the database support indexing and optimization techniques to enhance query performance?	
	(d) What measures will be taken to ensure data integrity and enforce data consistency within the database?	
	(e) How will the database handle data replication and synchronization if multiple instances or servers are involved?	
	(f) Will the database support backup and recovery mechanisms for data protection?	
	(g) Are there any specific scalability requirements for the database as the application's data grows?	
	(h) Can the database handle high availability and fault tolerance to minimize downtime?	
	(j) How will the database handle data access controls and user permissions to ensure data security?	
	(k) Will the database support encryption for sensitive data stored within it?	
	(l) What tools or utilities will be used for database administration, monitoring, and performance tuning?	
	(m) Can the database integrate with other systems or data sources through data connectors or APIs?	
	(n) Are there any specific compliance or regulatory requirements that the database management should adhere to?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
14.	<b><u>Data Management</u></b>	
	(a) How will the application handle data storage and organization?	
	(b) Will the application utilize data lakes, data marts, or data warehouses for storing and managing the data?	
	(c) What database technologies or systems will be used for data management?	
	(d) Can the application handle structured, semi-structured and unstructured data formats?	
	(e) How will data ingestion from various sources be managed within the application?	
	(f) Will the application support data integration from external systems or APIs?	
	(g) What measures will be taken to ensure data quality and data cleansing within the application?	
	(h) Can the application handle data versioning and provide historical data access if needed?	
	(j) How will data security and access controls be implemented within the application?	
	(k) Will the application provide data backup and disaster recovery mechanisms?	
	(l) Are there any specific data privacy or compliance requirements that need to be considered?	
	(m) How will data synchronization be handled across different components or modules of the application?	
	(n) Will the application support data transformation or data enrichment processes?	
	(o) Can the application handle real-time data streaming or processing?	
	(p) How will data archival and data retention policies be implemented within the application?	
15.	<b><u>OIS &amp; MIS Systems Integration</u></b>	
	(a) How do you propose data synchronization and real-time updates be handled between the decision support system and integrated OIS & MIS systems?	
	(b) What are the requirements interoperability with different data formats or proprietary systems used in the military domain?	
	(c) Specify security or access control requirements when integrating with sensitive systems or databases?	
	(d) How will the AIDSS application handle data transformation or data mapping between different data structures used in the integrated systems?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(e) Will the AIDSS application provide bidirectional data exchange capabilities, allowing both the retrieval and updating of data in integrated systems?	
	(f) Are there any specific latency or performance requirements when integrating with real-time OIS & MIS systems?	
	(g) Will the AIDSS application handle multiple integration points with different systems simultaneously?	
	(h) How will the AIDSS application handle error handling and exception management when dealing with integration failures or data inconsistencies?	
	(j) Are there any specific authentication or encryption requirements for secure communication and data transfer between the AIDSS application and OIS & MIS systems?	
	(k) Will the AIDSS application provide logging and auditing capabilities to track the integration activities and ensure data integrity?	
	(l) What integration testing strategies or methodologies will be employed to ensure the seamless operation of the AIDSS application with OIS & MIS systems?	
16.	<b><u>Data Migration and Legacy Systems Integration</u></b>	
	(a) Are there specific data mapping or transformation requirements for migrating or integrating data from legacy systems?	
	(b) Are there any data quality issues or inconsistencies in the legacy data that need to be addressed during migration or integration?	
	(c) Are there any dependencies or interrelationships between data in the legacy systems that need to be maintained or translated in the new application?	
	(d) What data validation or verification processes are in place to ensure the accuracy and integrity of the migrated or integrated data?	
	(e) Are there mechanisms to handle data conversion or format changes between the legacy systems and the new application?	
	(f) Are there considerations for preserving data security and access controls during the migration or integration process?	
	(g) What are the strategies or tools in place for extracting data from legacy systems and loading it into the new application?	
	(h) Are there mechanisms to handle data synchronization or data updates between the legacy systems and the new application during the transition phase?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(j) Are there provisions for data archiving or data retention from the legacy systems after migration or integration?	
	(k) Are there performance considerations or optimizations required for handling large-scale data migration or integration processes?	
	(l) Are there contingency plans or rollback strategies in case of any issues or data discrepancies during the migration or integration process?	
	(m) What documentation or knowledge transfer processes are in place to ensure a smooth transition from legacy systems to the new application?	
17.	<b><u>Security &amp; Access Control</u></b>	
	(a) Specify security requirements for the AIDSS application?	
	(b) How will user authentication and authorization be implemented within the system?	
	(c) Can the system support different authentication methods, such as username/password, two-factor authentication, or integration with existing military authentication systems?	
	(d) Will the system enforce role-based access control to ensure appropriate data access and functionality for different user roles?	
	(e) Are there any specific data encryption requirements for sensitive information transmitted over the network?	
	(f) How will the system handle secure communication protocols, such as HTTPS, to protect data during transmission?	
	(g) Will the system provide secure storage and encryption for sensitive data stored within the system's databases?	
	(h) Are there any specific compliance or regulatory requirements related to data security and access control?	
	(j) How will the system handle session management and session timeouts to mitigate the risk of unauthorized access?	
	(k) Will the system implement secure coding practices to prevent common security vulnerabilities, such as cross-site scripting (XSS) or SQL injection attacks?	
	(l) Are there any specific security measures in place to protect against insider threats or unauthorized internal access?	
	(m) Will the system provide audit logging and monitoring functionalities to track user activities and detect any suspicious behavior?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(n) How will the system handle security patches, updates, and vulnerability assessments to ensure ongoing security?	
	(o) Can the system integrate with intrusion detection and prevention systems to enhance security measures?	
	(p) Will there be a formal security assessment or penetration testing conducted to identify and address any potential security vulnerabilities?	
18.	<b><u>Role Based Access Control</u></b>	
	(a) How does the system implement role-based access control (RBAC) to manage user access and permissions?	
	(b) Can roles be customized or are they predefined by the system?	
	(c) How are users assigned to specific roles within the system?	
	(d) Are there any hierarchical or nested roles within the RBAC framework?	
	(e) Can the system support fine-grained access control, allowing for specific permissions to be granted or denied at a granular level?	
	(f) Is there a mechanism for managing role assignments and permissions centrally?	
	(g) Will there be any default or predefined roles specifically designed for military decision support functionalities?	
	(h) Can roles and permissions be dynamically assigned or revoked based on user requirements or organizational changes?	
	(j) How does the system handle situations where users require access to multiple roles or have overlapping permissions?	
	(k) Is there a mechanism to enforce segregation of duties to prevent conflicts of interest or unauthorized access?	
	(l) Can the system integrate with external user directories, such as Active Directory or LDAP, to manage RBAC?	
	(m) Are there any auditing capabilities to track changes or modifications made to role assignments and permissions?	
	(n) How does the RBAC framework handle new user onboarding or user offboarding processes?	
	(o) Can the system generate reports or provide visibility into role assignments and user permissions for compliance and auditing purposes?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
19.	<b><u>Data Privacy and Encryption</u></b>	
	(a) What measures are in place to ensure the privacy and confidentiality of sensitive military data within the application?	
	(b) Will the software comply with relevant data privacy regulations and standards. If yes, list out the standards?	
	(c) Are there encryption mechanisms in place to protect data transmission over networks and storage within the application?	
	(d) What encryption algorithms and protocols are used to secure data at rest and in transit?	
	(e) Are there options for encrypting specific fields or data elements within the application?	
	(f) How is user authentication and access control managed to prevent unauthorized access to sensitive data?	
	(g) Are there audit trail functionalities to track data access, modifications, and user activities within the application?	
	(h) Is there a process for securely disposing of or deleting data when it is no longer needed?	
	(j) Can the software integrate with external identity and access management systems to enhance security and streamline user authentication?	
	(k) Are there any security features to prevent data leakage or unauthorized data exports from the application?	
	(l) How is data backup and disaster recovery handled to ensure data integrity and availability in case of system failures or data loss?	
20.	<b><u>Compliance With Security Stds</u></b>	
	(a) Are there mechanisms in place to ensure secure communication between the application and users, such as encryption protocols (e.g., SSL/TLS)?	
	(b) Are there options for two-factor authentication (2FA) or multi-factor authentication (MFA) to enhance user account security?	
	(c) How is sensitive data stored and protected within the application? Are encryption mechanisms employed for data at rest and in transit?	
	(d) Are there mechanisms for secure data transmission and file transfer, such as secure FTP or SFTP protocols?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(e) Will the application provide audit trails or activity logs to track user actions, system activities, and data access for compliance and accountability?	
	(f) Are there mechanisms to detect and prevent unauthorized access attempts, such as intrusion detection and prevention systems (IDPS)?	
	(g) Is the application regularly updated with security patches and fixes to address known vulnerabilities?	
	(h) Are there mechanisms to protect against common security threats, such as session hijacking?	
	(j) How is data privacy and confidentiality maintained within the application? Are there provisions for data anonymization?	
	(k) Will the application have mechanisms to prevent data leakage or unauthorized data exports?	
21.	<b><u>GIS Functionalities</u></b>	
	(a) The OGC compliant GIS platform should be compatible with DSM and its map framework including Indian Military Grid Reference System (IMGRS). Are there any queries pertaining to IMGRS, if yes they may be listed alongwith file formats for DSM, Google base layer, Satellite imagery 2D & 3D outputs for better understanding and ease of development of the AIDSS application software.	
	(b) What specific GIS functionalities will be incorporated into the application?	
	(c) Can you provide examples of previous projects where you implemented GIS technologies?	
	(d) What mapping capabilities will the application have, such as displaying layers, overlays, or markers on a map?	
	(e) How will the application handle geospatial data, such as coordinates, polygons, or spatial queries?	
	(f) Will the application support different map projections or coordinate systems?	
	(g) Can the application handle visualizing and analyzing large geospatial datasets efficiently?	
	(h) What geocoding or address matching capabilities will be available within the application?	
	(j) Will the application support geospatial data editing or digitization functionalities?	
	(k) Are there any specific requirements for integrating aerial imagery or satellite imagery into the application?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(l) Can the application handle spatial analysis functions, such as buffer zones, proximity analysis, or route optimization?	
	(m) Will the application support geospatial data visualization in 3D or augmented reality (AR)?	
	(n) How will the application handle geospatial data overlays with other data sources, such as weather information or terrain data?	
	(o) Are there any specific requirements for geospatial data interoperability with other systems or formats?	
	(p) Can the application handle real-time tracking or movement visualization of military assets on a map?	
	(q) What geospatial data management functionalities will be available, such as data import, export, or data synchronization?	
22.	<b><u>Collaboration and User Roles</u></b>	
	(a) Will the application support collaborative features that allow multiple users to work together on shared maps, data, or analysis?	
	(b) Are there mechanisms for users to share maps, layers, or specific data subsets with other authorized users?	
	(c) Can users collaborate in real-time, making simultaneous edits or updates to shared data or maps?	
	(d) Can user roles be customized to align with military hierarchy or organizational structure, defining different levels of access and authority?	
	(e) Can users annotate or add comments to specific features or areas on maps, facilitating communication and information sharing?	
	(f) Are there notification mechanisms in place to inform users of updates, changes, or events relevant to their areas of responsibility?	
	(g) Can users collaborate through discussion forums, chat, or messaging features within the application?	
	(h) Are there mechanisms to assign tasks or workflows to specific users or teams, facilitating collaboration and coordination of activities?	
	(j) Can users track the status and progress of assigned tasks or workflows within the application?	
	(k) Are there options for version control or revision history management, allowing users to track changes and revert to previous versions if needed?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(l) Can users create and share custom reports, analyses, or visualizations with other users?	
	(m) Can users define and manage their own workspace or customized views within the application, tailored to their specific needs and preferences?	
23.	<b><u>Map Data Analysis</u></b>	
	(a) What types of map data analysis functionalities will be available in the application?	
	(b) Can you provide examples of previous projects where you implemented map data analysis?	
	(c) How will the application handle spatial querying and filtering of map data?	
	(d) What tools or algorithms will be used for geospatial analysis within the application?	
	(e) Will the application support statistical analysis of map data, such as density analysis or hotspot identification?	
	(f) Can the application perform spatial interpolation or prediction of map data values?	
	(g) How will the application handle overlay analysis, such as finding intersections or unions of map layers?	
	(h) Will the application support network analysis for route planning or optimization purposes?	
	(j) Are there any specific requirements for terrain analysis or elevation modeling within the application?	
	(k) Can the application perform temporal analysis of map data, such as tracking changes over time or identifying patterns?	
	(l) How will the application handle spatial modeling and simulation of military scenarios?	
	(m) Will the application provide tools for decision support based on map data analysis?	
	(n) What visualization techniques or tools will be available for displaying the results of map data analysis?	
	(o) Can the application handle real-time or near-real-time map data analysis for dynamic decision making?	
	(p) How will the application handle the performance and scalability requirements for map data analysis with large datasets?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
24.	<b><u>Integration with Geospatial Data Such as Satellite Imagery</u></b>	
	(a) Can the application seamlessly integrate with various geospatial data sources, such as GIS data repositories, map services, or geospatial databases?	
	(b) Will the application support the integration of satellite imagery from different satellite providers or agencies?	
	(c) What file formats are supported for importing and displaying geospatial data within the application (e.g., shapefiles, KML, GeoJSON)?	
	(d) Are there mechanisms for streaming or real-time integration of geospatial data feeds, such as weather data or live sensor data?	
	(e) Can the application retrieve and display raster data layers, such as satellite imagery, aerial photographs, or elevation data?	
	(f) Are there options for geo-referencing satellite imagery or aerial photographs within the application for accurate overlay on maps?	
	(g) Can the application perform spatial analysis and queries on the integrated geospatial data sources?	
	(h) Are there mechanisms to update or refresh the integrated geospatial data layers within the application when new data becomes available?	
	(j) Will the application provide tools or functions for image analysis of satellite imagery, such as change detection or object recognition?	
	(k) Are there options to adjust the display properties of the integrated geospatial data layers, such as transparency, symbology, or colour ramps?	
	(l) Can the application perform on-the-fly re-projection or coordinate system transformations to ensure compatibility with different geospatial data sources?	
	(m) Are there mechanisms for image classification or thematic mapping based on the integrated geospatial data layers?	
	(n) Does the application provide tools for data fusion or integration of multiple geospatial data sources for comprehensive analysis?	
	(o) Are there options to visualize temporal changes in satellite imagery or geospatial data over different time periods?	
	(p) Will the application support the integration of custom geospatial data layers or user-generated data for personalized analysis and decision making?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
25.	<b><u>Geo Location and GPS Integration</u></b>	
	(a) Will the application have geolocation capabilities to determine the current location of users or military assets?	
	(b) How will the application integrate with GPS or other positioning systems to retrieve accurate location data?	
	(c) Can the application handle real-time tracking and display the location of military assets on a map?	
	(d) Are there any specific requirements for integrating multiple GPS devices or tracking systems into the application?	
	(e) Will the application support geofencing functionalities to define virtual boundaries or alert notifications based on location?	
	(f) How will the application handle GPS data synchronization and ensure the accuracy of the location information?	
	(g) Can the application perform route planning or navigation based on GPS or geolocation data?	
	(h) Will the application provide historical GPS data analysis or playback capabilities?	
	(j) What measures will be taken to ensure the security and privacy of GPS or geolocation data?	
	(k) Can the application handle offline GPS tracking or caching of location data in case of network connectivity issues?	
	(l) Are there any specific requirements for integrating with third-party GPS devices or services?	
	(m) How will the application handle different coordinate systems or projections in GPS data integration?	
	(n) Will the application support reverse geocoding to convert GPS coordinates into addresses or place names?	
	(o) Can the application utilize GPS data for proximity-based alerts or location-based services?	
	(p) Are there any specific accuracy or precision requirements for the GPS or geolocation data used in the application?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
26.	<b><u>Integration with Geo Spatial APIs Google Maps and Open Street Maps</u></b>	
	(a) Is the application designed to integrate with multiple geospatial APIs, including Google Maps and Open Street Map?	
	(b) What functionalities or features of the application rely on the integration with these geospatial APIs?	
	(c) Are there specific licensing or usage agreements that need to be considered when using Google Maps or Open Street Map APIs?	
	(d) How is the integration with these geospatial APIs implemented? Are there dedicated libraries or SDKs utilized for seamless integration?	
	(e) Are there specific API keys or access tokens required to authenticate and authorize access to the geospatial APIs?	
	(f) How is the communication and data exchange handled between the application and the geospatial APIs? Are there specific data formats or protocols used?	
	(g) Are there mechanisms in place to handle errors or exceptions that may occur during the integration with the geospatial APIs?	
	(h) Can users customize or configure the geospatial API settings within the application, such as map layers, markers, or overlays?	
	(j) Are there mechanisms to optimize the performance and responsiveness of the application when interacting with the geospatial APIs?	
	(k) Are there restrictions or limitations imposed by the geospatial APIs in terms of data usage, rate limits, or usage policies that need to be considered?	
	(l) How is the integration with geospatial APIs tested to ensure proper functionality and compatibility?	
	(m) Are there plans to support additional geospatial APIs or map providers in the future?	
	(n) Are there considerations for offline or limited connectivity scenarios when relying on geospatial APIs for map data retrieval?	
	(o) How is the security and privacy of data handled when interacting with external geospatial APIs?	
	(p) Are there backup or fallback mechanisms in place in case of issues or unavailability of the geospatial APIs?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
27.	<b><u>Geo Spatial Data Indexing and Search Optimization</u></b>	
	(a) How is geospatial data indexed within the application to enable efficient search and retrieval?	
	(b) What indexing techniques or data structures are used for geospatial data, such as spatial indexing or quad tree-based indexing?	
	(c) Are there specific optimizations in place for spatial queries, such as bounding box queries or proximity searches?	
	(d) How is the performance of geospatial queries and searches measured and monitored?	
	(e) Are there mechanisms to handle large-scale geospatial datasets and optimize query performance for such datasets?	
	(f) Are there caching mechanisms employed to speed up data retrieval for frequently accessed or commonly queried geospatial data?	
	(g) Are there indexing strategies for different types of geospatial data, such as points, lines, polygons, or raster data?	
	(h) Are there mechanisms to handle geospatial data with varying levels of detail or resolution, such as multi-resolution indexing?	
	(j) Is there support for spatial joins or overlay operations to analyze and retrieve data based on spatial relationships?	
	(k) Are there optimizations in place to handle complex geospatial queries involving multiple layers or datasets?	
	(l) Are there query optimization techniques used to improve the performance of geospatial analysis functions, such as buffering or intersection operations?	
	(m) Are there mechanisms to prioritize or rank search results based on relevance or proximity to a specific location?	
	(n) Are there integration capabilities with external geospatial indexing or search systems?	
	(o) Are there mechanisms to optimize the indexing and search performance when dealing with real-time or streaming geospatial data?	
	(p) Is there ongoing monitoring and optimization of the geospatial indexing and search capabilities to ensure optimal performance and scalability?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
28.	<b><u>Analytics and Decision Support</u></b>	
	(a) What types of analytics capabilities will be provided by the system, such as descriptive, diagnostic, predictive, or prescriptive analytics?	
	(b) Can the system perform data exploration and visualizations to facilitate data-driven decision-making?	
	(c) How will the system integrate with the data warehouse, data lake, or data mart to access and analyze the relevant military data?	
	(d) Are there any specific analytical models or algorithms that will be applied to the data for decision support purposes?	
	(e) Will the system leverage artificial intelligence (AI) and machine learning (ML) techniques to extract insights and patterns from the data?	
	(f) Can the system handle geospatial analytics, allowing users to analyze and visualize data in relation to geographic locations?	
	(g) What are the available tools or functionalities for data aggregation, filtering, and drill-down capabilities in the system?	
	(h) Will the system provide scenario analysis or what-if analysis capabilities to support decision-making under different conditions?	
	(j) How will the system handle data quality and data cleansing processes to ensure accurate and reliable analytics results?	
	(k) Can the system generate automated reports or dashboards to present the analytics findings to decision-makers?	
	(l) Will the system support data integration from external sources to enrich the analytics capabilities?	
	(m) Are there any predefined key performance indicators (KPIs) or metrics that will be tracked and monitored by the system?	
	(n) Can the system provide real-time analytics and decision support capabilities, allowing users to access up-to-date information?	
	(o) What level of user customization or personalization is available in terms of analytics and decision support functionalities?	
	(p) How will the system handle the security and access control of analytics data and decision support outputs?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
29.	<b><u>Business Intelligence and Reporting</u></b>	
	(a) What business intelligence capabilities does the software application provide?	
	(b) Can the software integrate with external BI tools or platforms for advanced analytics and reporting?	
	(c) What types of data visualization options are available within the software for presenting analytical insights?	
	(d) Can the software generate interactive dashboards that allow users to explore and drill down into data?	
	(e) Will the software support ad-hoc querying and data exploration for customized reporting needs?	
	(f) Are there predefined reports or templates available within the software to address common military decision support requirements?	
	(g) Can the software generate reports based on real-time or near real-time data updates?	
	(h) What data sources can the software pull from for generating reports? Can it integrate with data marts, warehouses, or external systems?	
	(j) Are there any scheduling or automated report generation capabilities within the software?	
	(k) Can the software handle large volumes of data for reporting purposes without performance degradation?	
	(l) Will the software support geospatial reporting and mapping functionalities to visualize military data on maps?	
	(m) What level of customization is available for creating and formatting reports to meet specific user requirements?	
	(n) Can the software handle multidimensional analysis and provide capabilities for drill-through and drill-up reporting?	
	(o) Are there any security features in place to control access to reports and ensure data confidentiality?	
	(p) How does the software handle report distribution and sharing, both within the system and through external channels?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
30.	<b><u>Data Vis and Reporting Tools</u></b>	
	(a) What data visualization capabilities are available within the application?	
	(b) Can the software generate interactive maps, charts, graphs, or dashboards to visualize geospatial and military data?	
	(c) Are there customizable templates or layouts for creating visually appealing reports and presentations?	
	(d) Can the application handle large datasets and provide efficient data visualization without compromising performance?	
	(e) Are there options for overlaying different layers or datasets on maps to provide comprehensive situational awareness?	
	(f) Can the software display real-time data updates and support dynamic visualizations for live monitoring and decision making?	
	(g) Are there tools or features for filtering, aggregating, or summarizing data to facilitate meaningful analysis and reporting?	
	(h) Can the software generate reports or exports in various formats, such as PDF, Excel, or PowerPoint, for easy sharing and distribution?	
	(j) Are there options for exporting or embedding visualizations into external documents or presentations?	
	(k) Will the application support drill-down or zooming capabilities to explore data at different levels of detail?	
	(l) Are there interactive tools or features for data exploration and discovery, such as filtering, sorting, or highlighting?	
	(m) Can the software generate geospatial heat maps or thematic maps based on specific data attributes or indicators?	
	(n) Are there annotation or annotation capabilities to add notes, comments, or annotations to visualizations or reports?	
	(o) Can the application schedule and automate report generation and distribution on a regular basis?	
	(p) Are there options for exporting or sharing visualizations or reports through APIs or integration with external systems?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
31.	<b><u>APIs and Integration</u></b>	
	(a) What APIs will be available for integrating the GIS-based web browser system with other military systems or external applications?	
	(b) Can the system integrate with existing GIS platforms or mapping services to leverage additional data sources or functionalities?	
	(c) What authentication and authorization mechanisms will be used for API access and integration?	
	(d) Are there any specific API documentation or developer resources available to facilitate integration with the system?	
	(e) Will the system support both inbound and outbound APIs for data exchange with other systems?	
	(f) Can the system consume data from external APIs or services to enhance its functionality or provide additional information?	
	(g) What data formats and protocols will be supported for API integration, such as JSON, XML, REST, or SOAP?	
	(h) Are there any data transformation or data mapping requirements when integrating with external systems?	
	(j) How will data consistency and synchronization be maintained when integrating with multiple systems?	
	(k) Will there be real-time event-based integration capabilities, allowing the system to receive and process real-time data updates from external sources?	
	(l) Can the system provide web hooks or notifications to trigger actions in external systems based on specific events or conditions?	
	(m) Are there any specific security considerations or encryption requirements for API communication and data exchange?	
	(n) Will the system support asynchronous API calls or batch processing for large data transfers?	
	(o) How will API versioning and backward compatibility be managed to ensure smooth integration with future updates or changes?	
	(p) Are there any API usage limits or throttling mechanisms in place to control and manage API traffic?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
32.	<b><u>IPR and Licensing</u></b>	
	(a) What are the proprietary rights associated with the system, including software code, algorithms, and intellectual property?	
	(b) Are there any third-party components or libraries used in the system, and if so, what are the licensing terms and obligations?	
	(c) Can you provide details on the licensing model for the GIS-based web browser military decision support system, such as per user, per site, or enterprise-wide licensing?	
	(d) Are there any restrictions or limitations on the use, modification, or redistribution of the system or its components?	
	(e) Will the system be provided under an open-source or commercial licensing model?	
	(f) What are the terms and conditions for the usage, support, and maintenance of the system during the licensing period?	
	(g) Can the system be customized or extended by the end-users, and if so, what are the guidelines or limitations for such modifications?	
	(h) Will there be any proprietary data or content included with the system, and if so, what are the usage rights and restrictions for such data?	
	(j) Are there any limitations on the transfer or sublicensing of the system to third parties?	
	(k) Will the system be subject to regular audits or compliance checks to ensure adherence to licensing agreements?	
	(l) How will software updates and new versions be provided to licensed users, and are there any additional costs associated with such updates?	
	(m) Can the licensing agreement be extended or renewed after the initial term, and if so, what are the terms and conditions for such extensions?	
	(n) Are there any limitations on the geographic or jurisdictional use of the system based on licensing agreements?	
	(o) What is the process for resolving any disputes or issues related to licensing or proprietary rights?	
	(p) Can you provide a copy of the licensing agreement or provide access to the terms and conditions for review?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
33.	<b><u>Software Certification and Compliance</u></b>	
	(a) Are there any specific industry standards or regulatory requirements that the software application needs to comply with?	
	(b) How frequently is the software application assessed for compliance and certification?	
	(c) Are there any ongoing compliance monitoring processes in place to ensure continued adherence to standards and regulations?	
	(d) Will the software support encryption protocols and algorithms that meet industry or government standards for data security?	
	(e) Are there any specific requirements for secure data storage, transmission, or access control outlined by the software's compliance framework?	
	(f) Are there any specific audit or reporting features within the software to assist with compliance monitoring and reporting?	
	(g) Will the software provide a means to track and manage user consent or permissions for data processing, if required by privacy regulations?	
	(h) Are there any software update processes or patch management mechanisms in place to address security vulnerabilities and compliance gaps?	
34.	<b><u>Performance Monitoring and Optimization</u></b>	
	(a) What performance monitoring tools or mechanisms are in place to track and analyze the application's performance?	
	(b) Can the software collect and provide performance metrics, such as response time, CPU usage, memory utilization, or database query performance?	
	(c) Are there specific performance thresholds or benchmarks defined for the application, and how are they measured and monitored?	
	(d) What steps are taken to identify and resolve performance bottlenecks or issues within the application?	
	(e) Can the software generate performance reports or dashboards to provide insights into the application's performance over time?	
	(f) Are there load testing or stress testing procedures in place to evaluate the application's performance under heavy user loads or peak usage scenarios?	
	(g) How often is performance testing conducted, and what measures are taken to optimize the application's performance based on test results?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(h) Are there caching mechanisms or techniques used to improve application performance, such as query caching or data caching?	
	(j) Can the software utilize content delivery networks (CDNs) or other distributed caching mechanisms to reduce latency and improve data delivery?	
	(k) Are there strategies or features in place to optimize database performance, such as query optimization, indexing, or data partitioning?	
	(l) Are there mechanisms for monitoring and optimizing network performance to ensure fast and reliable data transmission?	
	(m) Can the software leverage parallel processing or distributed computing to enhance performance and scalability?	
	(n) Are there any specific techniques or algorithms used within the software to optimize complex calculations or data processing tasks?	
	(o) How are performance issues or anomalies detected and addressed in a timely manner?	
	(p) Are there guidelines or recommendations provided for optimizing the application's performance based on specific deployment environments or scenarios?	
	(q) Are there data export APIs or integration capabilities to automate data exports or integrate with external systems?	
	(r) Is there support for data export scheduling or recurring exports to automate regular data transfers or reporting tasks?	
	(s) Are there security measures in place to ensure that exported data is protected and only accessed by authorized users?	
35.	<b><u>Life Cycle Support</u></b>	
	(a) What is the expected duration of the software's life cycle?	
	(b) Are there defined phases or stages within the software's life cycle, such as development, deployment, maintenance, and retirement?	
	(c) What is the process for transitioning from one life cycle phase to another?	
	(d) Is there a dedicated team or department responsible for life cycle support?	
	(e) What are the specific support activities and services provided during each phase of the life cycle?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(f) Are there mechanisms in place for monitoring and assessing the performance and effectiveness of the software throughout its life cycle?	
	(g) Is there a plan or strategy for handling software updates, upgrades, and patches during the life cycle?	
	(h) How are dependencies on external technologies or components managed over the life cycle?	
	(j) Are there provisions for managing and addressing security vulnerabilities or emerging threats during the life cycle?	
36.	<b><u>Non-Functional Requirements for AIDSS Architecture</u></b>	
	The vendor is required to clearly indicate suitability and validate the design and architecture of the AIDSS application software as under:-	
	(a) <b><u>Reliability</u></b> . The system must have appropriate measures to ensure processing reliability for the data received or accessed through the solution. It will be necessary that the following issues be taken care properly.	
	(i) Prevent processing of duplicate incoming files / data	
	(ii) Zero loss of data (data already saved; data at rest should also not be lost)	
	(iii) Unauthorized access and alteration to the data uploaded in the system shall be prevented.	
	(b) <b><u>Usability / Ease of Use</u></b>	
	(i) Usability is concerned with specifying the user interface and end-user interactions with the system. Usability incorporates well-structured user manual, explanatory error messages, help facilities and consistent interfaces. The user interface must be very intuitive to facilitate easy on-boarding of first-time web application users.	
	(c) <b><u>Scalability</u></b>	
	(i) The application should be able to scale elastically to handle the increase or decrease in workload.	
	(ii) The Application must support load balancing and routing.	
	(iii) The Application must support horizontal scaling of Servers, compute, storage, network, etc.	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(d) <b><u>Graceful Failure</u></b>	
	(i) The application must not have any Single point of failure. There must be a graceful degradation of services in case of any failure.	
	(e) <b><u>Performance</u></b>	
	(i) The Application must comply by Service Response Time as required by the Application and stipulated in the SLAs. – Vendor may define response time(s) under various conditions.	
	(f) <b><u>Security</u></b>	
	(i) Security solution for AIDSS architecture should comply with the specifications as stated in the RFI document.	
	(g) <b><u>Quality</u></b>	
	(i) The applications must comply by ISO/IEC 25010:2011 Systems and software engineering - Systems and software Quality Requirements and Evaluation (SQuaRE) - System and software quality models, GIGW standards and other stipulated standards.	
	(h) <b><u>Error Handling &amp; Resolution</u></b>	
	(i) The applications must efficiently do error handling. It must also provide detailed logs to enable efficient de-bugging and issue resolution.	
	(j) <b><u>Documentation</u></b>	
	(i) All Software documentation must be maintained with proper Version Control and Access Rights. Software Traceability Matrix must be maintained.	
	(k) <b><u>Sharing &amp; Reusability</u></b>	
	(i) All commonly used functionalities are abstracted to be built once and deployed across the platform through reuse and sharing. Sharing & Reusability shall be subject to conformance with the principles of Security & Privacy.	

<b><u>Ser No</u></b>	<b><u>Aspects</u></b>	<b><u>Response</u></b>																											
	(l) <b><u>Manageability</u></b>																												
	(i) Manageability needs to be a crucial aspect of AIDSS Solution. The vendor has to ensure that the solution deployed has adequate monitoring and tracking features for measuring the utilization and availability of resources. This includes:																												
	(aa) Remote monitoring of Status and Statistics of all high-level components.																												
	(ab) Management capability to start/ stop/ restart services and systems																												
	(ac) Auto discovery of all components manageable																												
	(ad) Auto discovery of all other system components																												
	(ae) Ability to track changes in configuration of the system components to help track service.																												
	(af) System disruptions																												
37.	<b><u>Project Governance Structure</u></b>																												
	(a) The vendor is required to clearly indicate the expected project governance structure for AIDSS delivery as under:-																												
	(i) Project Governance Structure																												
	(ii) Project Governance Reporting Charter																												
38.	<b><u>Key Personnel</u></b>																												
	(a) The vendor is required to clearly indicate the tentative expected Key Personnel who would be deployed for successful delivery of AIDSS. The example could be as under:-																												
	<table border="1"> <thead> <tr> <th>#</th> <th>Resource Type</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>(i)</td> <td>Project Manager</td> <td></td> </tr> <tr> <td>(ii)</td> <td>Enterprise Solution Architect</td> <td></td> </tr> <tr> <td>(iii)</td> <td>Database Administrator</td> <td></td> </tr> <tr> <td>(iv)</td> <td>Scrum of scrum</td> <td></td> </tr> <tr> <td>(v)</td> <td>Business Analyst(s)</td> <td></td> </tr> <tr> <td>(vi)</td> <td>QC Expert</td> <td></td> </tr> <tr> <td>(vii)</td> <td>GIS Expert</td> <td></td> </tr> <tr> <td>(viii)</td> <td>... (any others)</td> <td></td> </tr> </tbody> </table>	#	Resource Type	Remarks	(i)	Project Manager		(ii)	Enterprise Solution Architect		(iii)	Database Administrator		(iv)	Scrum of scrum		(v)	Business Analyst(s)		(vi)	QC Expert		(vii)	GIS Expert		(viii)	... (any others)		
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<u>Ser No</u>	<u>Aspects</u>				<u>Response</u>
39.	<b><u>Engagement Model</u></b>				
(a) The vendor is required to clearly indicate the preferred engagement model for AIDSS delivery. The <b>tentative headings</b> would be as under:-					
#	<b>Project Track (Tentative)</b>	<b>Model (Fixed Cost / T&amp;M for resources)</b>	<b>Offsite/ Onsite</b>	<b>Remarks</b>	
(i)	Requirement Gathering				
(ii)	Setting up various environments (Dev, UAT, staging, Pre-Prod, Prod etc)				
(iii)	Solution Design, Development, Roll-out and implementation				
(iv)	Centralized Helpdesk setup and operations				
(v)	Training and Capacity Building				
(vi)	Operation and Maintenance				
(vii)	Change Requests				
(viii)	Exit Management				
(ix)	...any other...				
40.	<b><u>Training and Documentation</u></b>				
(a) Will training be provided for users to effectively utilize the functionalities of the decision support system?					
(b) What training materials or resources will be available to users, such as user manuals, tutorials, or video demonstrations?					
(c) Will the training be tailored to different user roles or proficiency levels?					
(d) How will the training sessions be conducted, such as in-person training, virtual training, or self-paced online courses?					

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(e) Will there be a train-the-trainer approach, where designated individuals will be trained to provide further training and support to end-users?	
	(f) Can you provide information on any certification programs or assessments available for users to demonstrate their proficiency in using the system?	
	(g) Will there be ongoing support and training opportunities to keep users updated on system enhancements or new features?	
	(h) What documentation will be provided for system administrators or technical staff responsible for managing and maintaining the system?	
	(j) Are there any specific guidelines or best practices documented for system configuration, customization, or troubleshooting?	
	(k) Will there be a knowledge base or online documentation repository available for users to access relevant information and troubleshooting guidance?	
	(l) How will user feedback and support requests be handled, and will there be a designated support team available to address user inquiries?	
	(m) Will there be a system help desk or ticketing system to track and prioritize user support requests?	
	(n) Are there any plans for conducting user surveys or feedback sessions to continuously improve the training and documentation materials?	
	(o) How will updates and revisions to the training and documentation materials be communicated to users?	
	(p) Can you provide examples or samples of the training materials or documentation that will be provided?	
41.	<b><u>Customisation and Configuration Options</u></b>	
	(a) What level of customization is available within the application? Can users customize the user interface, map layouts, or data visualization options?	
	(b) Are there options to define custom data fields or attributes to capture additional information specific to military decision making?	
	(c) Can users configure their own workflows, processes, or decision support models within the application?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(d) Are there options for customizing user roles and permissions to align with the organization's structure and hierarchy?	
	(e) Can users configure alerts, notifications, or triggers based on specific events or conditions relevant to their operations?	
	(f) Are there options for integrating custom data sources or external APIs to augment the application's capabilities?	
	(g) Can users define and save their own search queries, filters, or geospatial queries for future use?	
	(h) Are there customization options for data styling, such as symbology, color-coding, or thematic mapping?	
	(i) Can users create custom reports, dashboards, or visualizations based on their specific requirements?	
	(j) Are there options for configuring automated data imports or data synchronization with external systems or databases?	
	(k) Can users customize the spatial analysis tools or algorithms within the application to suit their operational needs?	
	(l) Are there options for configuring data aggregation, summarization, or disaggregation based on specific criteria or attributes?	
	(m) Can users define custom geofences, zones, or boundaries within the application for targeted analysis or monitoring?	
	(n) Are there options for integrating custom plugins, extensions, or third-party tools to enhance the application's functionality?	
	(o) Can users personalize their workspace, layouts, or toolbars to suit their preferences and workflows?	
42.	<b><u>Query Management</u></b>	
	(a) How will user queries be managed within the system?	
	(b) What query languages or query tools will be available for users to interact with the system?	
	(c) Can the system handle complex queries involving multiple data sources or layers?	
	(d) Are there any limitations or restrictions on the size or complexity of queries that can be executed?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(e) Will there be query optimization techniques implemented to improve query performance?	
	(f) How will query results be presented to users, such as in tabular format or visual representations on the map?	
	(g) Will the system support spatial queries, allowing users to search for data based on geographic criteria?	
	(h) What measures will be taken to ensure the security and integrity of query results?	
	(j) Can users save or bookmark frequently used queries for easy access?	
	(k) Will the system provide query history or logging capabilities to track user query activities?	
	(l) How will the system handle concurrent queries from multiple users without impacting performance?	
	(m) Can the system handle ad-hoc queries, allowing users to explore and analyze data on the fly?	
	(n) Will there be query caching mechanisms in place to improve response time for frequently executed queries?	
	(o) Are there any query scheduling or automation capabilities, allowing users to schedule and execute queries at specific times?	
	(p) Can the system integrate with external query tools or business intelligence platforms for advanced data analysis and reporting?	
43.	<b><u>Infrastructure and Deployment</u></b>	
	(a) What is the recommended infrastructure setup for deploying the system, including hardware, networking, and server requirements?	
	(b) Are there any specific infrastructure security requirements or certifications that need to be considered?	
	(c) What are the system's scalability requirements, and how should the infrastructure be designed to accommodate future growth?	
	(d) Can the system handle high availability and failover configurations to minimize downtime?	
	(e) What is the expected network bandwidth and latency requirement for optimal system performance?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(f) Will the system integrate with existing infrastructure components, such as Active Directory for user authentication or other military systems?	
	(g) Are there any specific firewall or network configuration considerations for accessing the system within a captive network?	
	(h) Will the system require any specialized hardware devices or peripherals for optimal functionality?	
	(j) How will the system handle data replication and synchronization across multiple geographically dispersed locations?	
	(k) Can the system support hybrid deployments, allowing for a combination of on-premises and cloud infrastructure components?	
	(l) Are there any specific data backup and storage requirements for the system's data, such as retention periods or off-site backups?	
	(m) What deployment strategy will be used for the system, such as phased rollouts or a full cutover approach?	
44.	<b><u>Operating System</u></b>	
	(a) What are the recommended operating systems for hosting the application?	
	(b) Will the application be compatible with both Windows and Linux operating systems?	
	(c) Are there any specific versions or editions of the operating system that are required or recommended?	
	(d) How will the application handle compatibility with different operating system environments?	
	(e) Are there any specific security considerations or hardening measures for the chosen operating system?	
	(f) Will the application require any specific system configurations or dependencies on the operating system?	
	(g) Can the application utilize operating system-level resources, such as file systems or networking capabilities?	
	(h) How will the application handle system-level updates and patches on the operating system?	
	(j) Are there any specific performance optimizations or considerations for the chosen operating system?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(k) Will the application be tested and validated on different operating system environments?	
	(l) Are there any licensing or legal considerations related to the chosen operating system?	
	(m) How will the application handle interoperability with other operating system-dependent software or tools?	
	(n) Are there any specific operating system-related compliance requirements that need to be considered?	
	(o) Will the application support virtualized or containerized deployment on different operating system platforms?	
	(p) What support or documentation will be provided for troubleshooting operating system-related issues	
45.	<b><u>Application Monitoring and Alerting Mechanisms</u></b>	
	(a) What monitoring tools or systems are in place to track the health and performance of the application?	
	(b) What specific metrics and indicators are monitored, such as CPU usage, memory utilization, network traffic, or response times?	
	(c) How frequently is the application monitored, and are there mechanisms for real-time monitoring or periodic checks?	
	(d) Are there dashboards or visualizations available to provide a real-time view of the application's performance and status?	
	(e) Are there automated alerting mechanisms in place to notify relevant stakeholders in case of performance degradation or system failures?	
	(f) What are the threshold levels or conditions that trigger alerts, and how are they defined?	
	(g) Are there different severity levels for alerts, and are they categorized based on the impact on system availability or performance?	
	(h) Are there mechanisms for proactive monitoring and detection of potential issues before they impact the users?	
	(j) Are there monitoring and alerting mechanisms in place for external dependencies, such as databases, APIs, or third-party services?	
	(k) Are there logs or log aggregation tools used to capture application events and facilitate troubleshooting and root cause analysis?	

<u>Ser No</u>	<u>Aspects</u>	<u>Response</u>
	(l) Is there a process for incident management and response, including escalation procedures and resolution timelines?	
	(m) Are there performance baselines or historical data used for trend analysis and capacity planning?	
	(n) Are there mechanisms to correlate and analyze monitoring data to identify patterns or anomalies that may require attention?	
	(o) Are there mechanisms to capture and analyze user behaviour data, such as session recordings or clickstream analysis, to gain insights into application usage patterns?	
	(p) Are there regular reviews or audits of the monitoring and alerting systems to ensure their effectiveness and alignment with business needs?	

**Signature of PFT Members**

1. _____	2. _____	3. _____
4. _____	5. _____	6. _____
7. _____	8. _____	9. _____
10. _____	11. _____	12. _____
13. _____	15. _____	15. _____