

PROPOSAL FOR DESIGNING, DEVELOPMENT, AND IMPLEMENTATION OF EMERGENCY MEDICAL SERVICES IN A SOUTH ASIAN COUNTRY



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ABOUT IQVIA

IQVIA is a global leader in providing advisory, consulting, technical assistance, technology, and data analytics services to both the public & private sector in the health sector.

The company was founded in 1954, and today a Fortune 500 company with revenue of \$12 billion, with over 70,000 employees operating in more than 100 countries around the world. We connect knowledge across all aspects of healthcare to help **more than 5,000 healthcare clients globally** to improve patient outcomes and operate more efficiently. IQVIA serves key organizations and decision makers around the world, spanning government agencies, multilateral agencies, policymakers, researchers, and private sector companies, consumer health and medical device manufacturers, as well as distributors, and the financial community.



IQVIA India

- 20 years of operation
- 30 corporate offices 60 field unit offices across India having **14,000+ people**
- Executing projects of national importance such as **NDHM, AB-PMJAY, NHRR, POSHAN ABHIYAAN, TEP KHSDRP APHSSP**
- Advisory to industry associations-OPPI, CII, FICCI etc
- Delivered over **150 Public Health projects** in last 7 years.
- **1,200** in house technology experts
- Largest Public Health Practice with over **175 team members** including MBBS, Health IT Specialists Data Experts, Health Researchers, Policy Experts, Capacity Building Experts, Business Analysts etc

In India, IQVIA has been operational for **20 years now** and have experience of collaborating with **governments, bilateral and multilateral organizations, philanthropic, for-profit, and not-for-profit organizations**. We have 14,000+ employees in 30 registered offices across 16 cities delivering services to the with software development centers in Gurgaon, Bangalore Coimbatore, and Cochin.

We have a strong focus on the **Government and Public sector (GPS) in India**. Our Public Health Government Practice in India works with the key Central Ministries, State Governments and International Donor Agencies across India on significantly large mandates in various areas of **Project Management Unit Support, Health Infrastructure, Health and Hospital Information Systems by IT solutions**, Health Policy & Strategic Planning, Health financing, **Contract Management**, Quality Assurance, Public Private Partnerships and Monitoring & Evaluation, Drug Procurement and Supply Chain System etc.



REQUIREMENTS OF SOUTH ASIAN COUNTRY

Designing, Development and implementation of Emergency medical services for a country in South Asia required following output to be delivered which are:

- Designing, developing, upgrading, and maintaining a digital emergency medical service (EMS) information system software which will instantly find the patient and connect them with the closest ambulance, dispatch the paramedic crew as and when necessary, and offer pre-paramedic guidance.
- The EMS information system should have at least followed functions: computer telephony integration, computer-aided dispatch function, call monitoring and call recording, and real-time ambulance tracking and monitoring.
- The EMS information system should connect EMS call center, health facilities, sea and land ambulances, police departments, fire departments and other stakeholders who are involved in emergency medical health services.
- Procurement, support and installation of required IT software and IT hardware for the digitalization of the EMS and the automation of the call center to improve the efficiency of responding to emergency calls, assessing the situation of patient for better medical triage, locating and dispatch nearby paramedic team and vehicles, and coordinating with recipient health facilities for timely transfer of COVID-19 patients or those with other health emergencies.
- Installation and operationalization support for Global Positioning System (GPS) devices, walkie talkies and tablets in the ambulances.



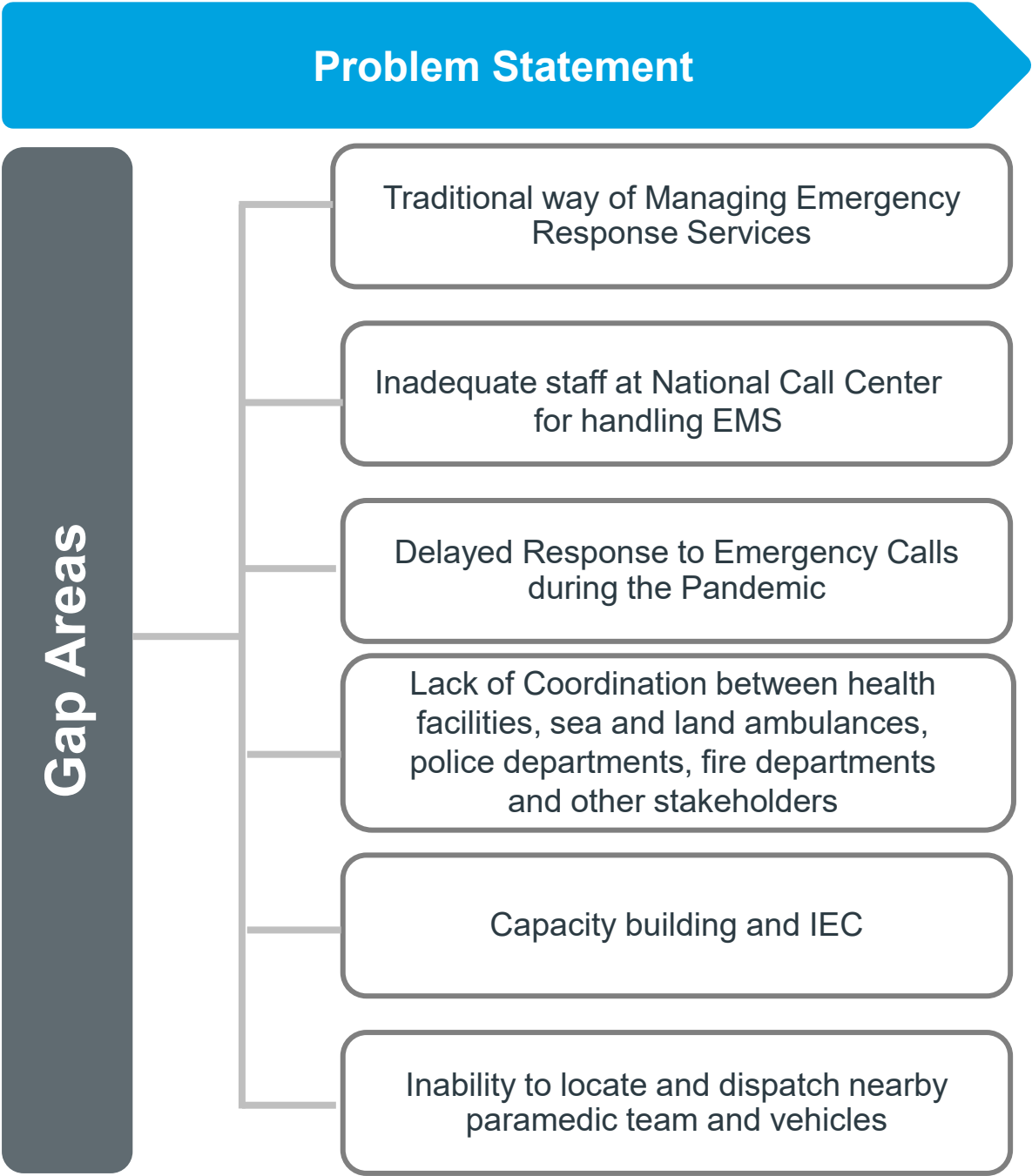
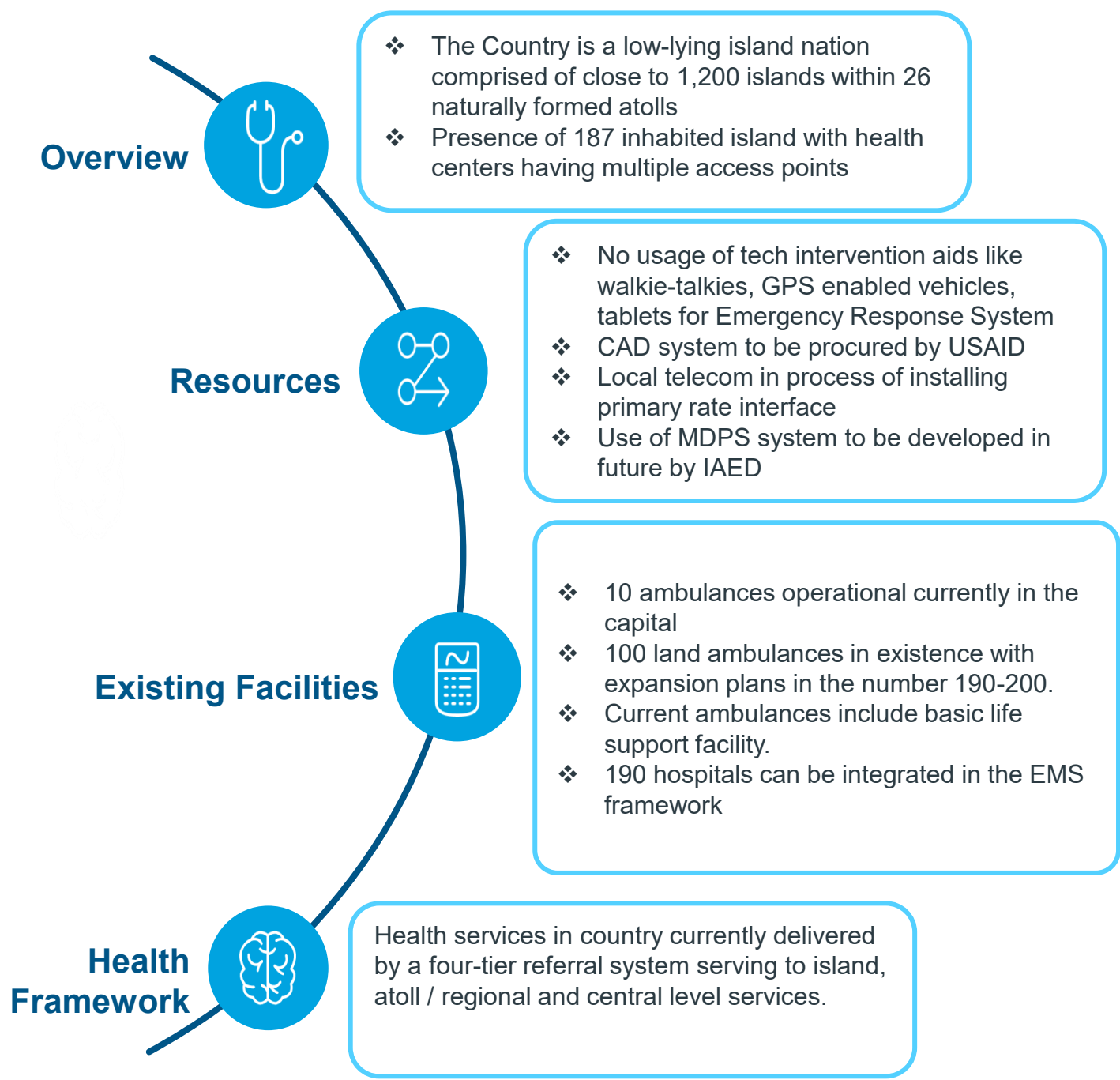
AIMS:

- Development of a holistic EMS model for achieving universal health coverage.
- Implementation of Emergency medical response system for effective prehospital care and training to paramedic's staff.

OBJECTIVES:

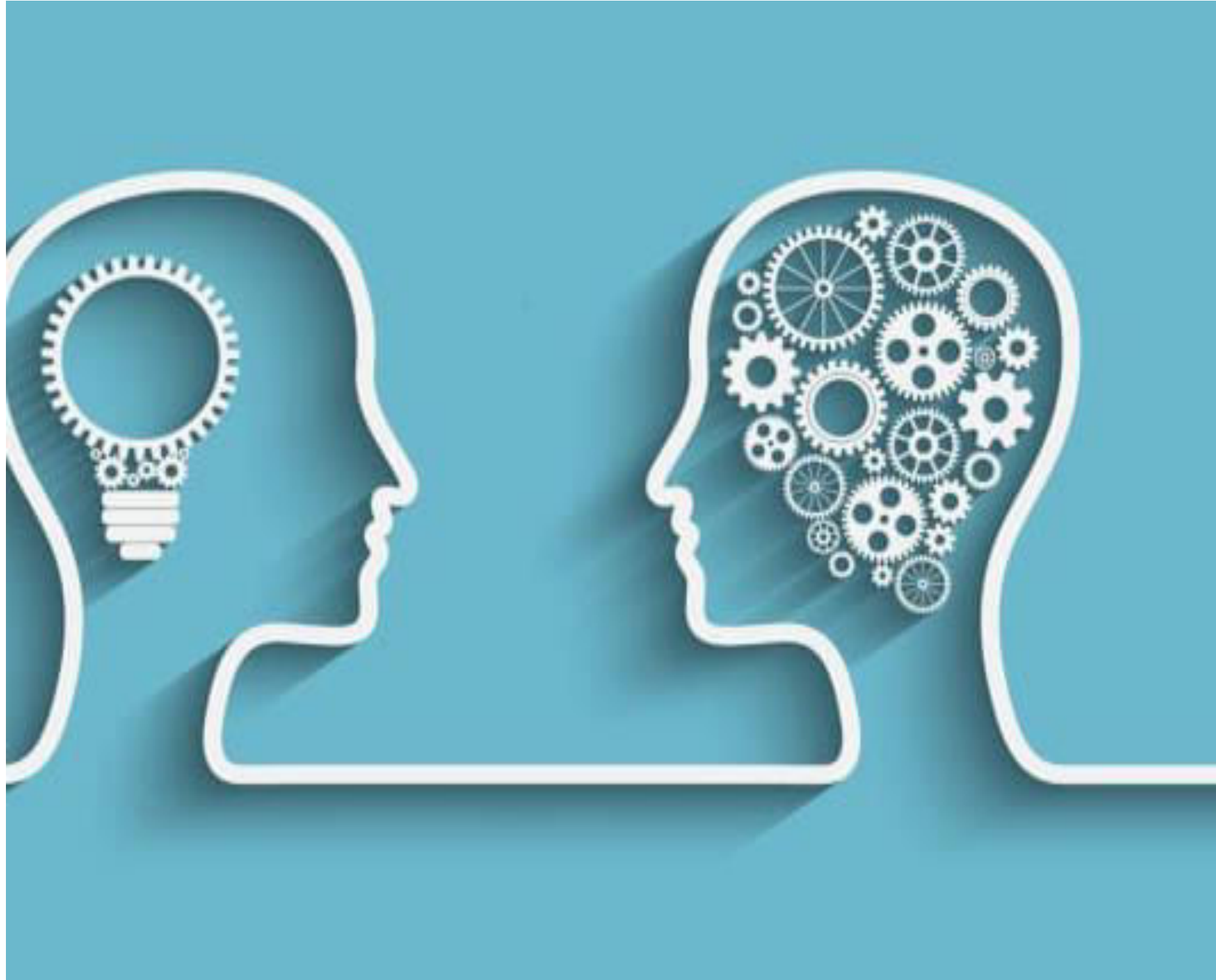
- Detailed strategy and work plan of EMS system development and procurement plan of required software and hardware.
- Development and testing of beta version of the EMS system created.
- Digitalization of the EMS and automation of the call center.
- Procurement and installation of IT Hardware and software.
- Digitalization of EMS information system by installing Global Positioning System (GPS) devices, walkie talkies and tablets for ambulances.

Current Scenario



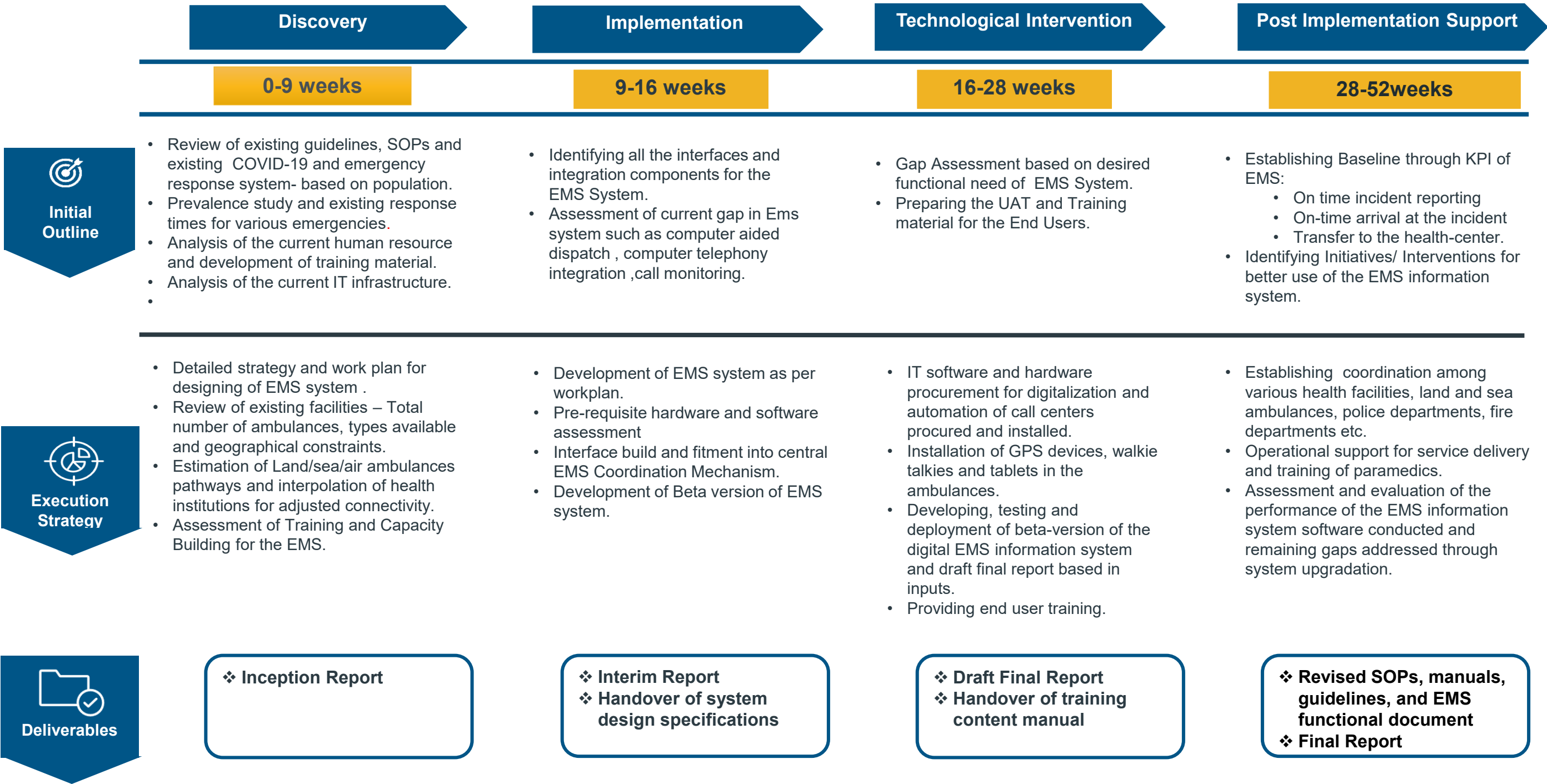
Need for Automated EMS Response System

Challenges	Delay in establishing location of help and additional data	Availability estimation and dispatch of ambulance in the vicinity	Continuum of responses	Understanding patient criticality	Lack of information of ETA	Pre-help patient care	Connecting remote areas
Need	Computer Telephony Integration	Computer Aided Dispatch Function	Call Monitoring and Recording	Medical Triage	Real Time Ambulance Tracking & Monitoring	Dissemination of medical advice until paramedics arrive	Integrated framework for patient transfer
Response	Records Management System (RMS) provides data relevant to incident call and caller ID verifies location of caller	GIS provides requisite geospatial data and AVL function pinpoints location of response vehicle	Patient Information System (PIS) provides the telemetry functions for consultation to patients until transfer to facility	Structured questionnaires, SOPs for patient evaluation based on MPDS determinants by IEAD and dispatch of most qualified responders appropriate to the criticality	GPS enabled ambulances transmitting data to the incident reporters/ callers through UCAD system	Organized, preempted medical advice until help arrives	Reaching remote areas with protocol for land/air/ sea ambulance and ro-ro ferries for land ambulances
Shifts	Hassle-free, informed and accurate incident establishment	Conservation of the golden hour of the patient	Value based continual patient monitoring	Situation credited response figures	Better triaging of emergency responses	Life saving measures until paramedics arrive	Unhindered patient transfer



Our understanding
& approach for
Emergency
Medical Service
Information System

Approach and Methodology



The background of the slide features a dynamic, abstract composition of flowing, translucent blue and white lines. These lines swirl and curve across the frame, creating a sense of movement and depth. A bright, glowing point of light is visible near the center, where several lines converge, emitting a soft, ethereal glow. The overall color palette is dominated by various shades of blue, ranging from deep navy to light sky blue, with white highlights that emphasize the fluid, ribbon-like nature of the lines.

Implementation Methodology for EMS

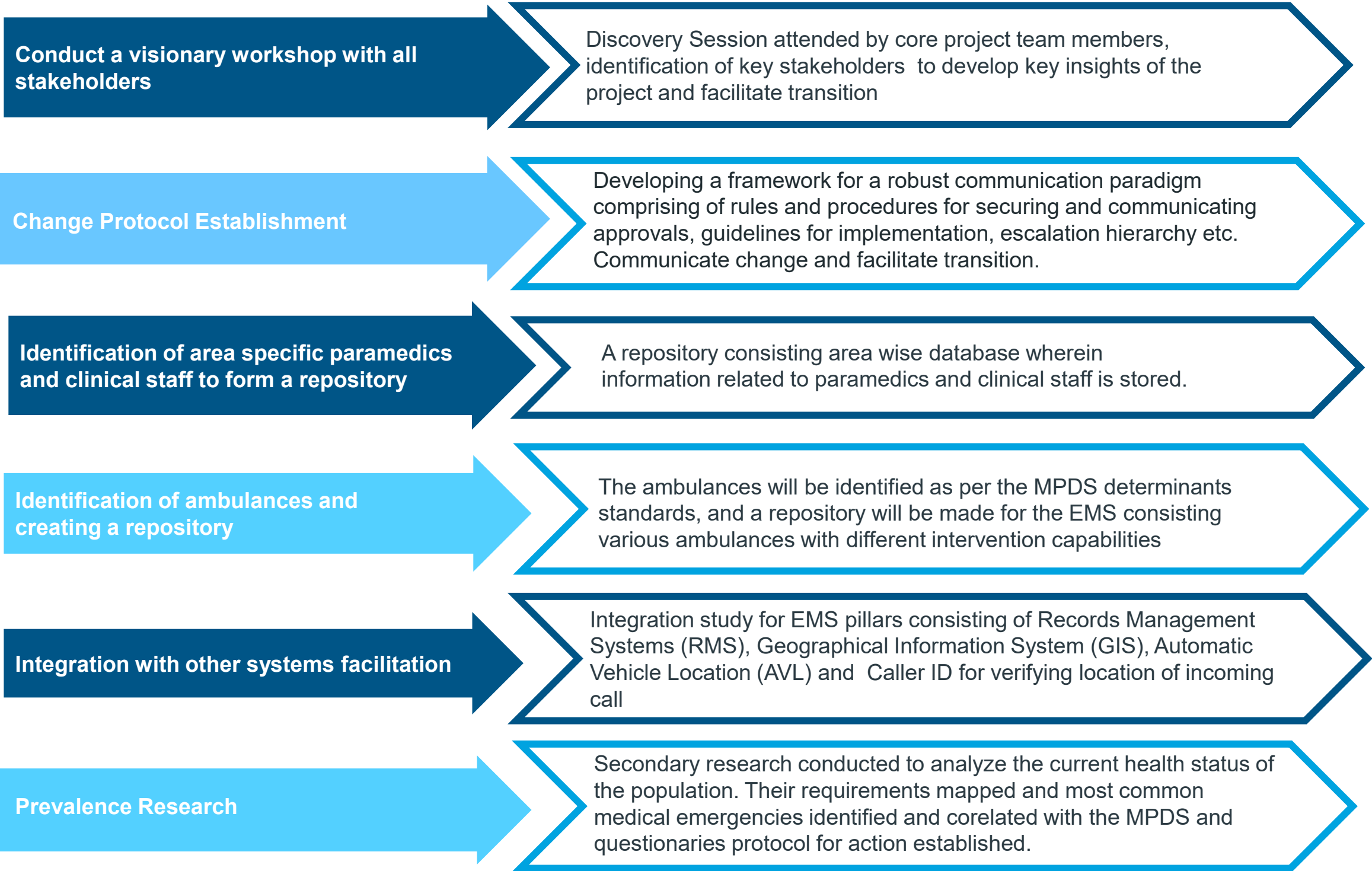
Project Snapshot

S. No.	Area of Work	Deliverables	Timeline
1.	Project Initiation and Discovery Session	- Discovery Session attended by core project team members, identification of key stakeholders to develop key insights of the project and facilitate transition - Developing a framework for a robust communication paradigm comprising of rules and procedures for securing and communicating approvals, guidelines for implementation, escalation hierarchy etc.	5 WEEKS
2.	Development of EMS System	Designing and Development of EMS System	4 WEEKS
3.	Pre-Requisite Software and Hardware Installation	- Awarding of contract for procurement - Placement of components in place - Collection of configuration data and installation of base software - Sequential installation and review of satisfactory domain performance	6 WEEKS
4.	Interface Build and Fitment into central EMS Coordination Mechanism	- Procurement of Hardware and software according to SRS documents - Installation and operationalization of EMS digital system - Procurement of hardware and software for automation of call center	4 WEEKS
5.	Beta testing of the EMS System	- Smooth roll-out of EMS system with well-established and well-connected system module - Assessment and evaluation of the performance of the EMS information system software and identification of the remaining gaps - Performing stress testing of the developed EMS system	3 WEEKS

Project Snapshot (contd.)

S.No.	Area of Work	Deliverables	Timeline
6.	Super User Training	• Training of super user personnel in the configuration and administration aspects of the application • Workflow training of super –users for gap analysis • Compilation of training schedules and course material for future reference	5 WEEKS
7.	User acceptance Testing	• Testing , piloting and upgradation of EMS as per government request. • Integration of EMS with other HMIS system • Workflow of EMS system is properly established on field	5 WEEKS
8.	Pre-Go Live System & Operational Readiness	• Review ,Update , support strategy and communication process during Rollout with stakeholders • Distribute the support resources over required locations • Manage Support calls, logs and issues tracking • Daily system rounds for monitoring users and their feedback • Install fixes as per the EMS system requirement	6 WEEKS
9.	Post Implementation Review and Support	• Project monitoring and maintenance report • Document handover to stakeholders • Knowledge transfer and successful sign off	14 WEEKS

Stage 1: Project Initiation and Discovery Session



Stage 1: Project Initiation and Discovery Session (contd.)

Assessing current state evaluation of FRS documents and defining KPIs



Timely identification of ambulance



On Time Arrival of Paramedics



Dissemination of appropriate medical advice



Timely transfer to health facility

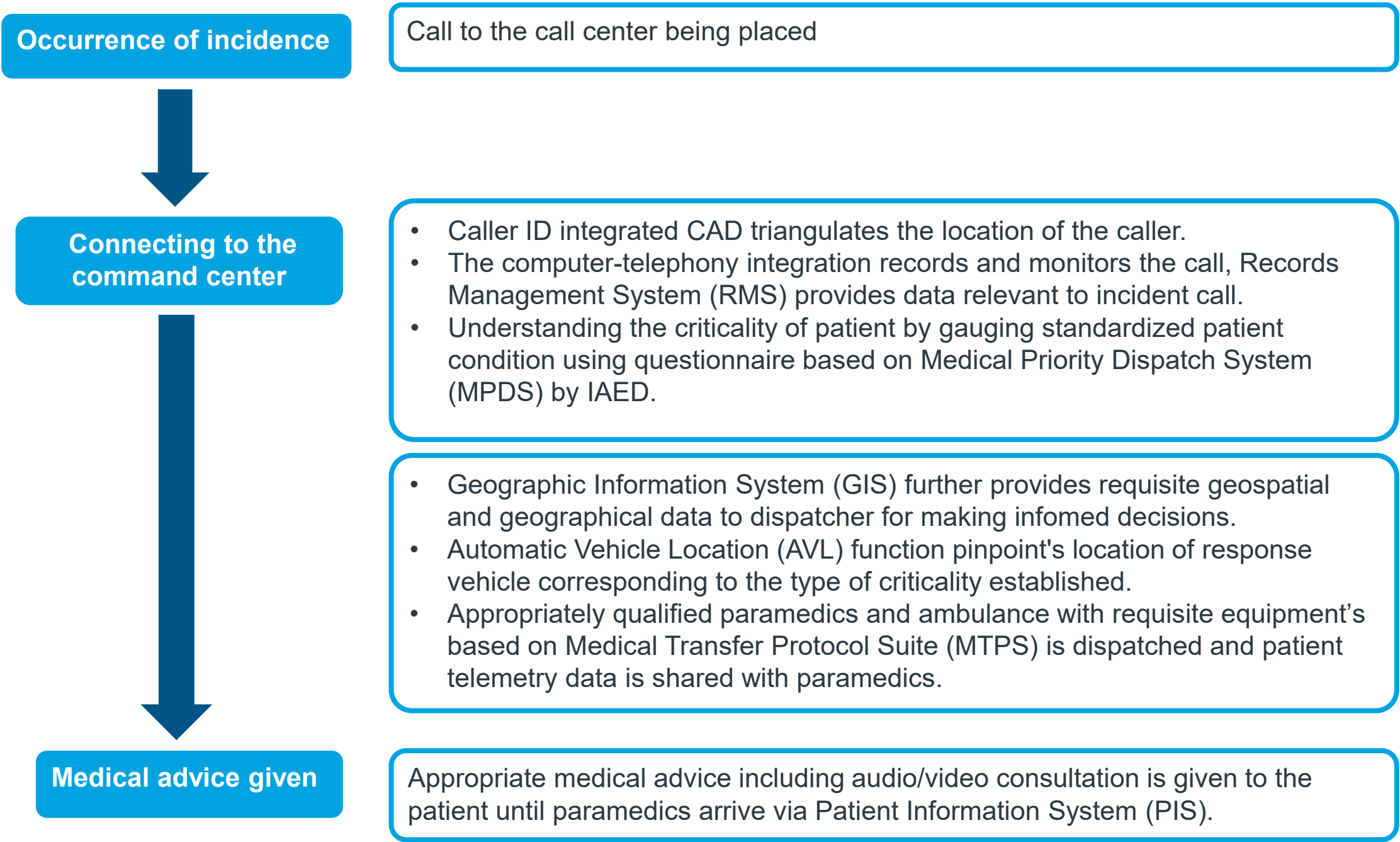
	Functional requirement specification (FRS)					
	Computer telephony integration	Computer-aided dispatch function	Call monitoring and call recording	Real-time ambulance tracking and monitoring.	Digitalization of the EMS	The automation of the call center
Current state analysis for pain areas	✓	✓	✓	✓	✓	✓
Requisite analysis for SRS	✓	✓	✓	✓	✓	✓
Beta- testing for functionality	✓	✓	✓	Illustrative ✓	✓	✓
Super User and User Acceptance Testing	✓	✓	✓	✓	✓	✓
Training and Capacity Building	✓	✓	✓	✓	✓	✓

Firms Learnings


Designed and developed FRS document based on current pain areas, required functionalities, intervention plan, interoperability testing and capacity training

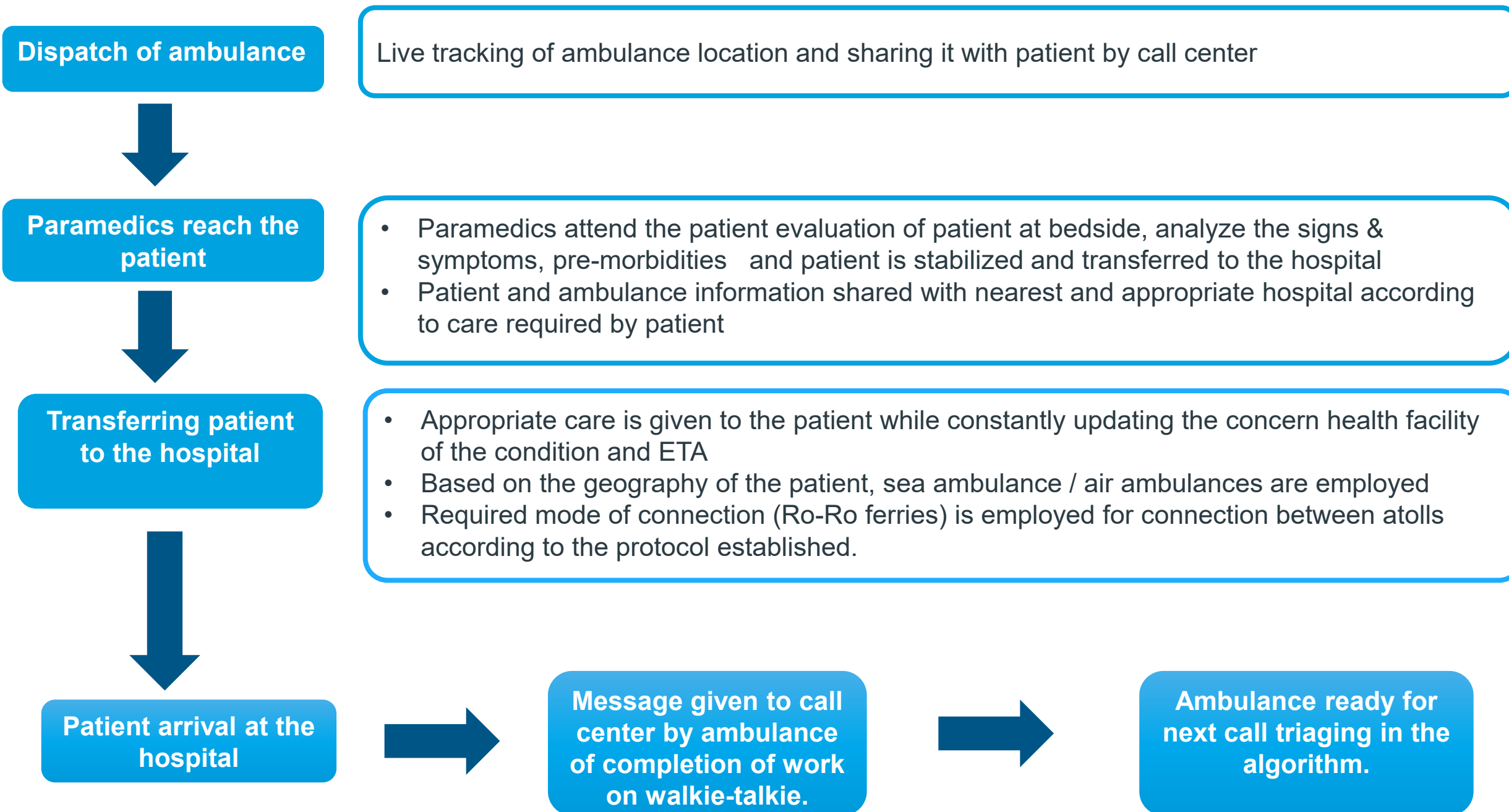
Stage 1: Project Initiation and Discovery Session (contd.)

Design of EMS Workflow System

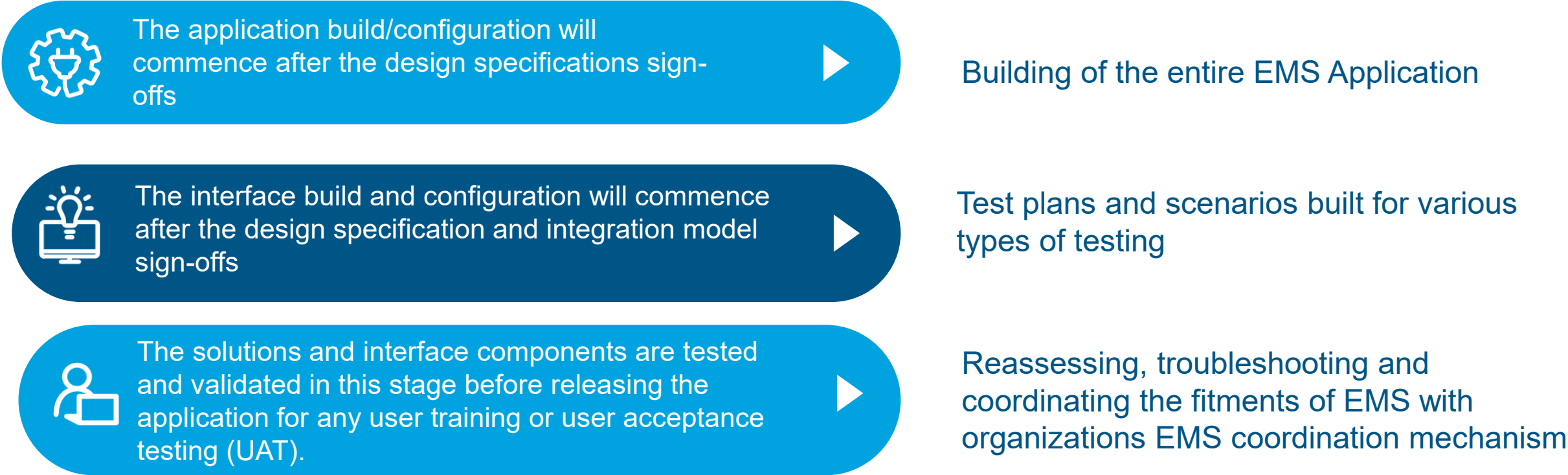


Stage 1: Project Initiation and Discovery Session (contd.)

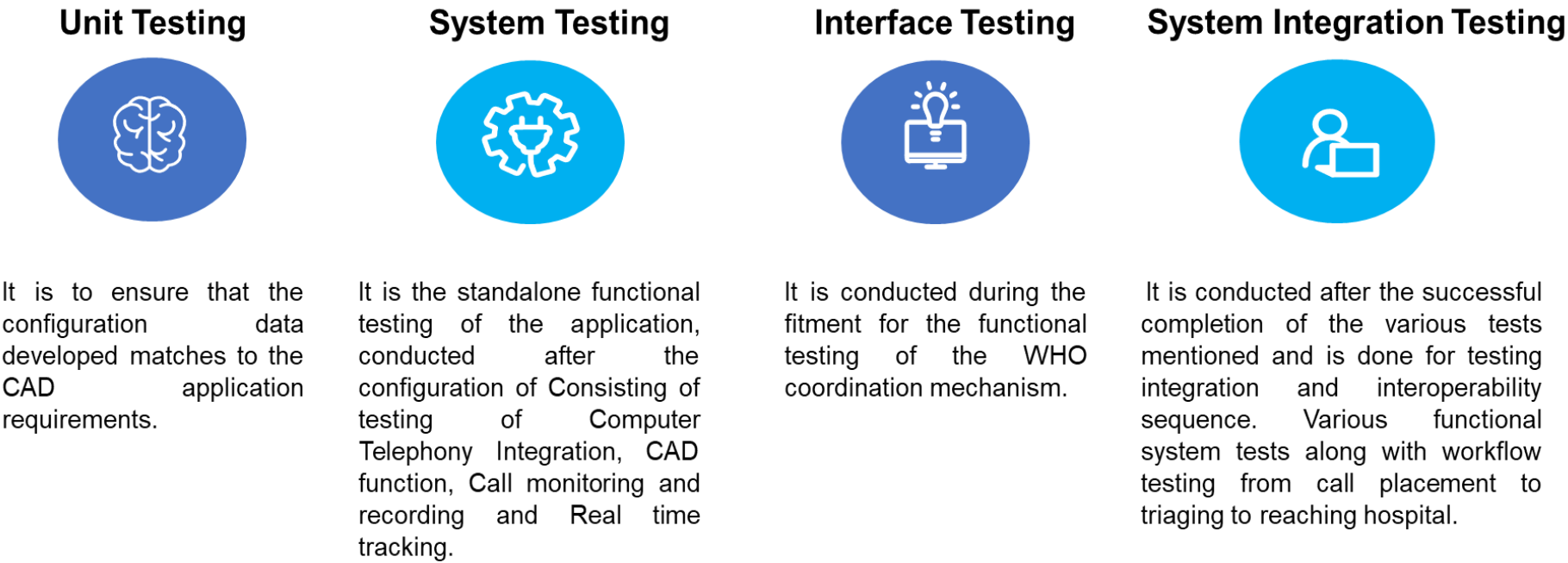
Design of EMS Workflow System



Stage 2: Development of EMS System



Tests for development of EMS include:

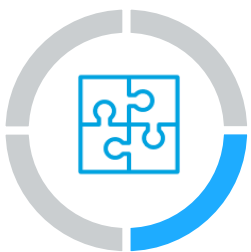


Stage 3: Pre-Requisite Software and Hardware Installation

Approval from stakeholders for the Procurement of Hardware



Installation and Configuration of Hardware Components



Integration and Testing of Installed Hardware Components



Review of Performance of Installed Components



Procurement will be done after the approval has been taken from stakeholders

Technical team will begin the hardware installation and the necessary configurations once the hardware and the necessary components are installed in Command Center and GPS Devices, Walkie Talkies and Tablets installed in Ambulances

Once the Hardware Components have been installed, their Integration must be validated against other components in the System such as Mobile Devices, Mobile Terminals, Pagers etc.

The Installed System will be monitored for the performance as any Emergency Response System have to be reviewed in all the real scenarios as well as building various Simulations and Mock Drill exercises.

Stage 4: Interface Build and Fitment into central EMS Coordination Mechanism

Hardware and software procurement according to SRS documents



The procured software will fulfill following goals:

- Automatically locate the patient and match them with the nearest ambulance;
- Dispatch the paramedic team as and when needed; and
- Provide medical advice that can be taken until paramedics arrive

Digital EMS information system installed and start operating



Establishment of interoperability between the EMS information system and other relevant health information systems to ensure the seamless patient information sharing and referral services

Installation and operation of GPS, walkie talkie and tablets for ambulances



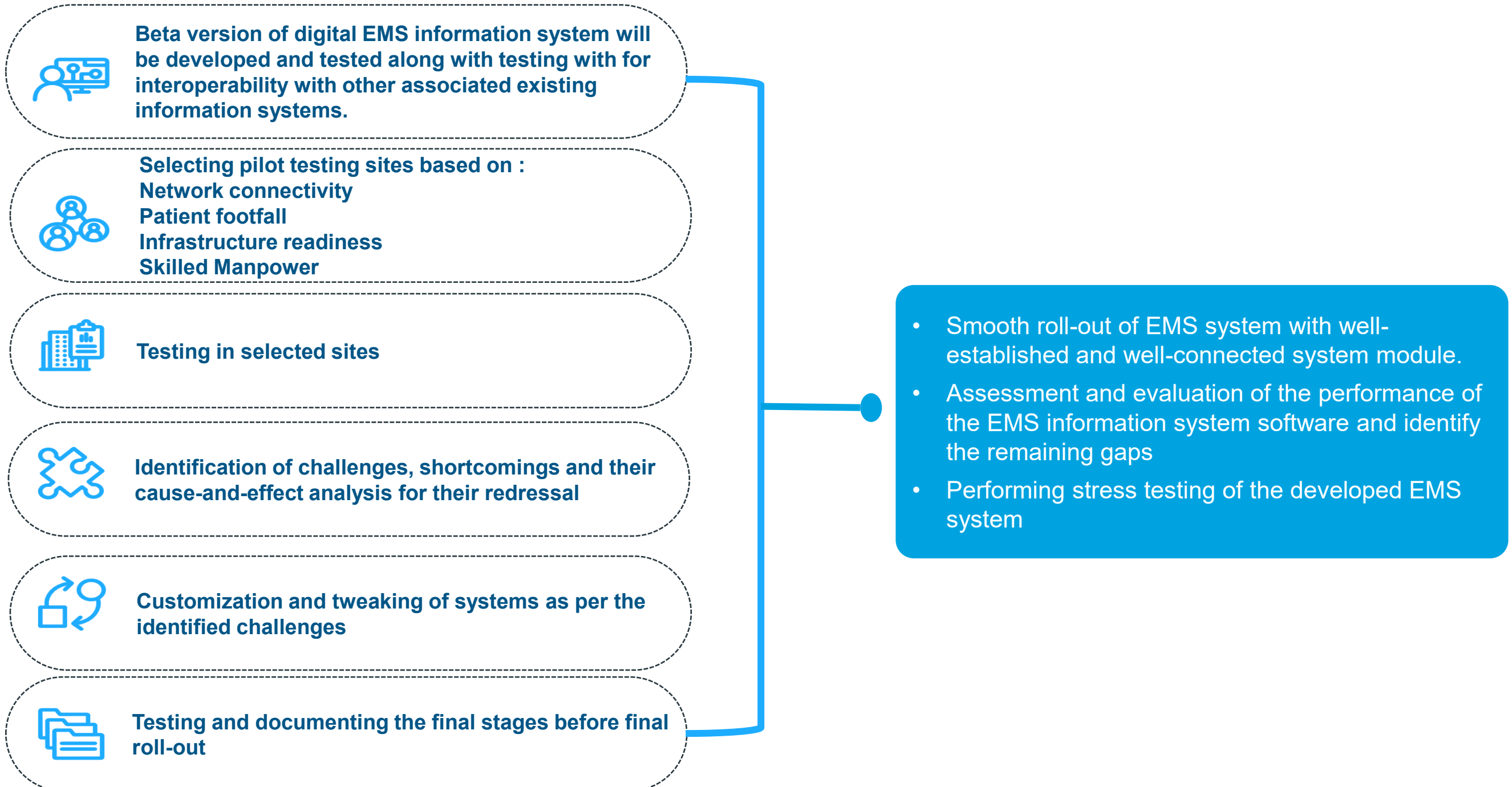
Proper communication through GPS , walkie –talkie established among different stakeholders of EMS system

Automation of call center procured and installed



Coordinated EMS system as per stakeholder's guidelines

Stage 5: Beta testing of the EMS System

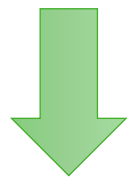


Stage 6: Super User Training

- Super user personnel are trained in the configuration and administration aspects of the application
- Workflow training for super –users for gap analysis
- Compilation of training schedules and course material for future reference



Adopting Train-the-Trainer
training approach



Super user personnel trained in
the configuration and
administration aspects of the
application



Application Administration
training is provided to those
trainees who are identified by
stakeholder as super-users /
application administrators



Workflow training for super –
users for gap analysis

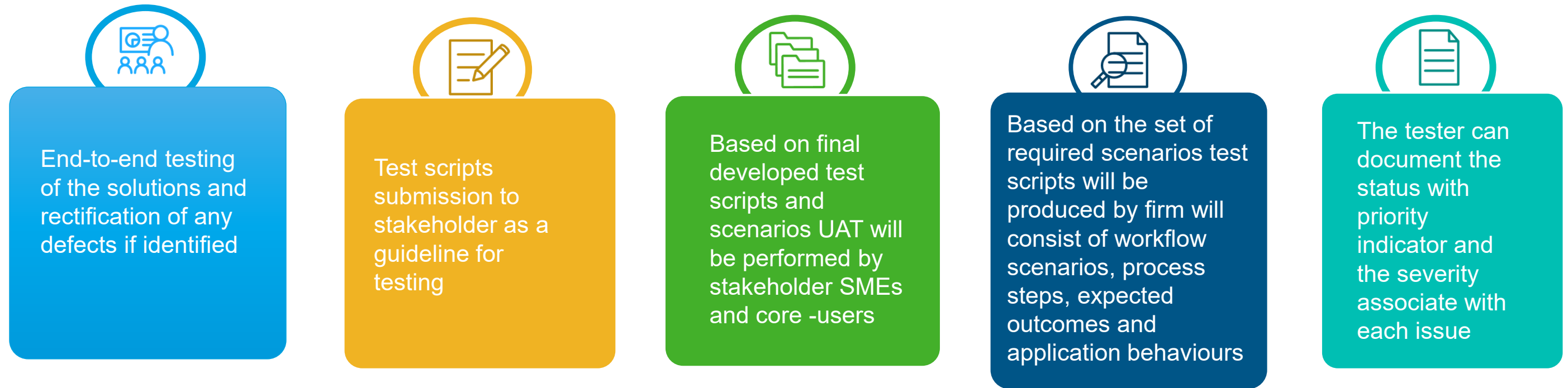


Application Functionality
training provided to ensure
trainees are fully educated in
the functional aspects of the
application



Compilation of training
schedules and course material
for future reference

Stage 7: User Acceptance Testing



Outcome

- Testing , piloting and upgradation of EMS as per government request.
- EMS system is working in accordance to test script
- Integration of EMS with other HMIS system
- Workflow of EMS system are properly established on field

Training Need assessment & Capacity Building

Ongoing keeping in view evolution in EMS system & expected attrition and on-boarding of new human capital

Capacity building plan

- Training need assessment – Develop tools to assess knowledge levels
- Develop training material – Training content as per latest guidelines
- Capacity building of key stakeholders – Introductory & refresher trainings to all National Call Center Staff, Paramedics Staff, Ambulance Drivers and other Stakeholders involved in the System

Details of training content

- Specific training content to be developed for National Call Center Staff, Paramedics Staff, Ambulance Drivers
- Training content as per latest national/ international guidelines to be developed for Healthcare professionals
- Draft training content to be shared before final development for review & feedback

Training methodology and handholding support

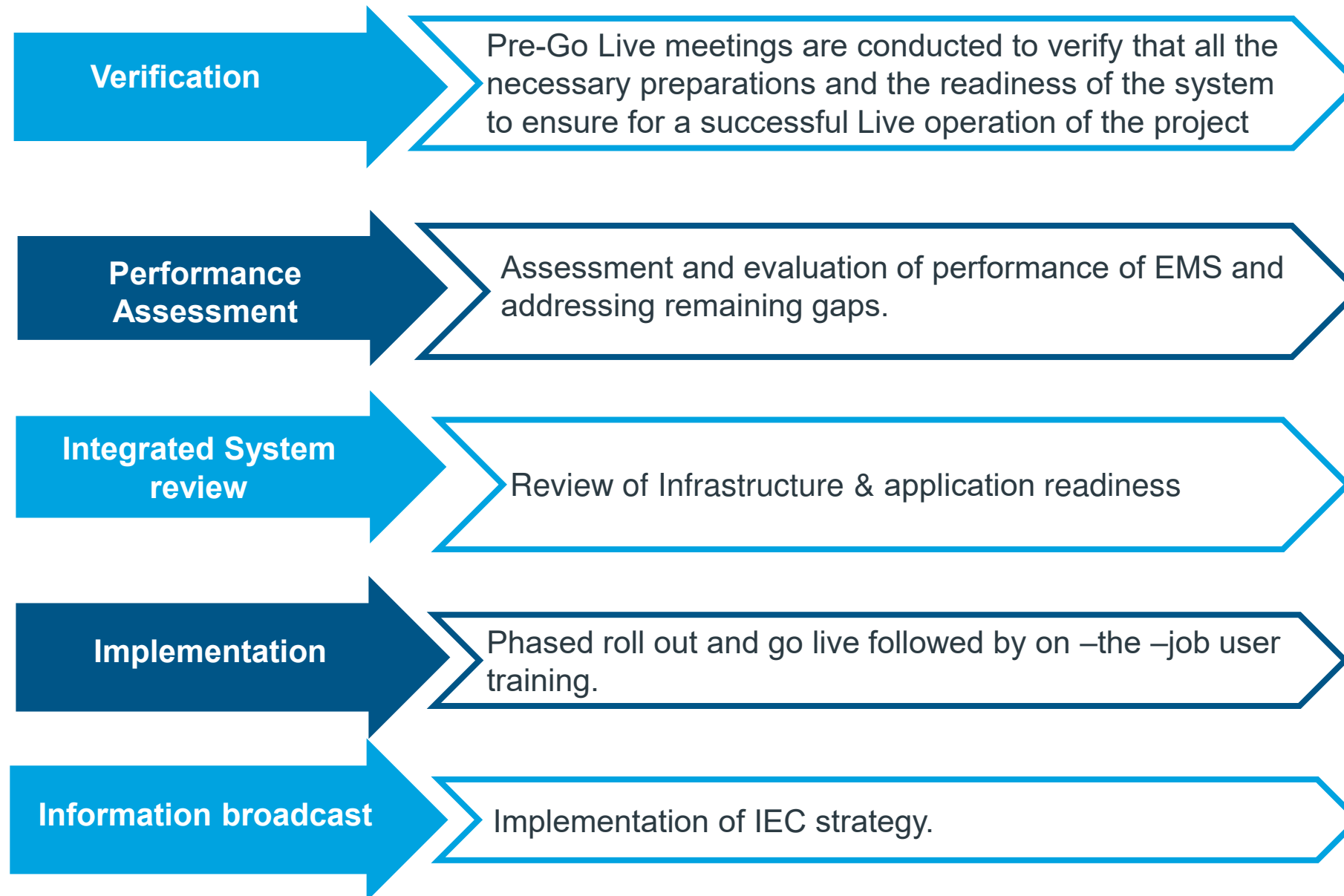
- Training Handbook
- Facilitator Guide
- Audio-Visual Content
- Presentation and Operational Training

- Training Handouts
- Group Discussion on Case Studies

- Pre & Post Training Assessment
- Training Schedule
- Support in Training Activity

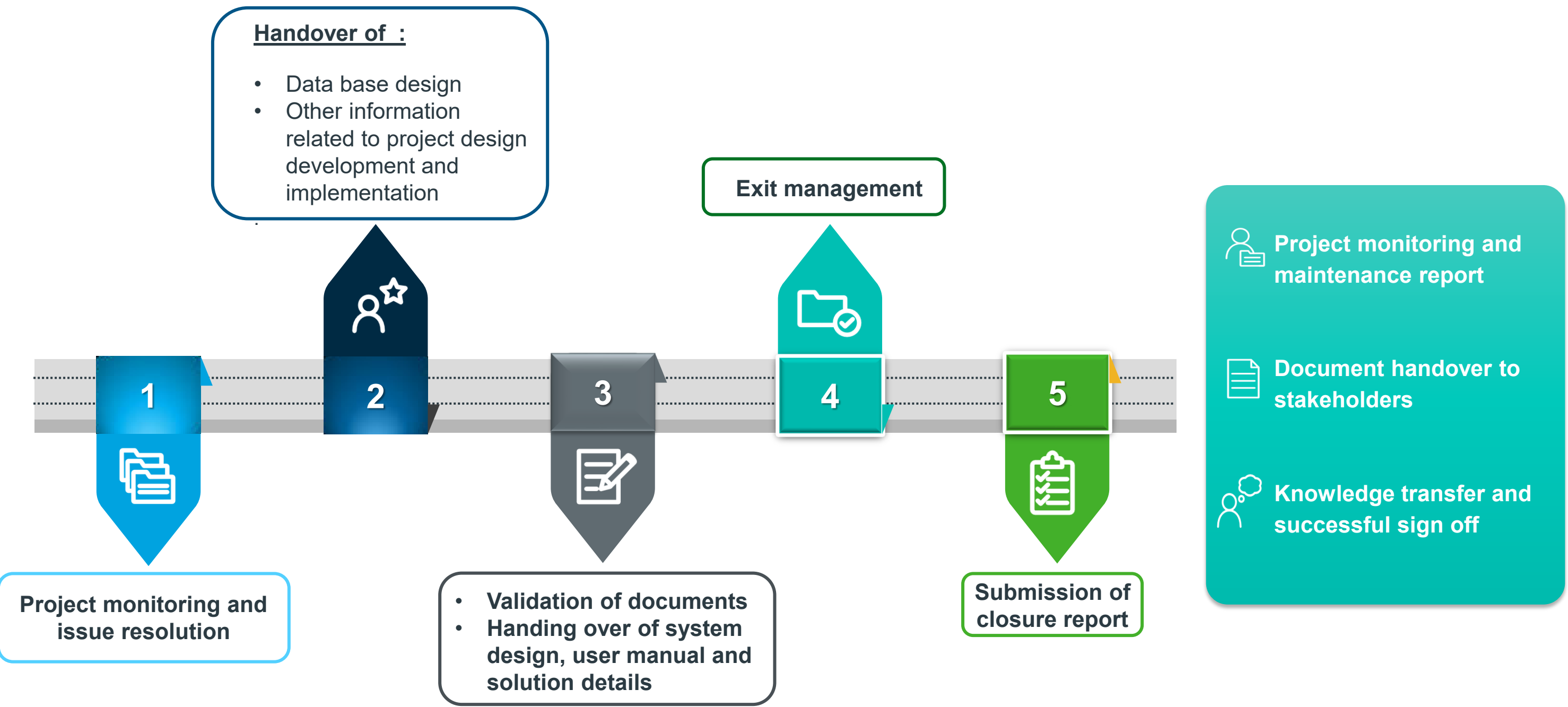
- Setting up the new EMS Infra
- Monitoring Day to Day Operations
- Conducting Assessments
- Providing Feedback & Guidance

Stage 8: Pre-Go Live System & Operational Readiness

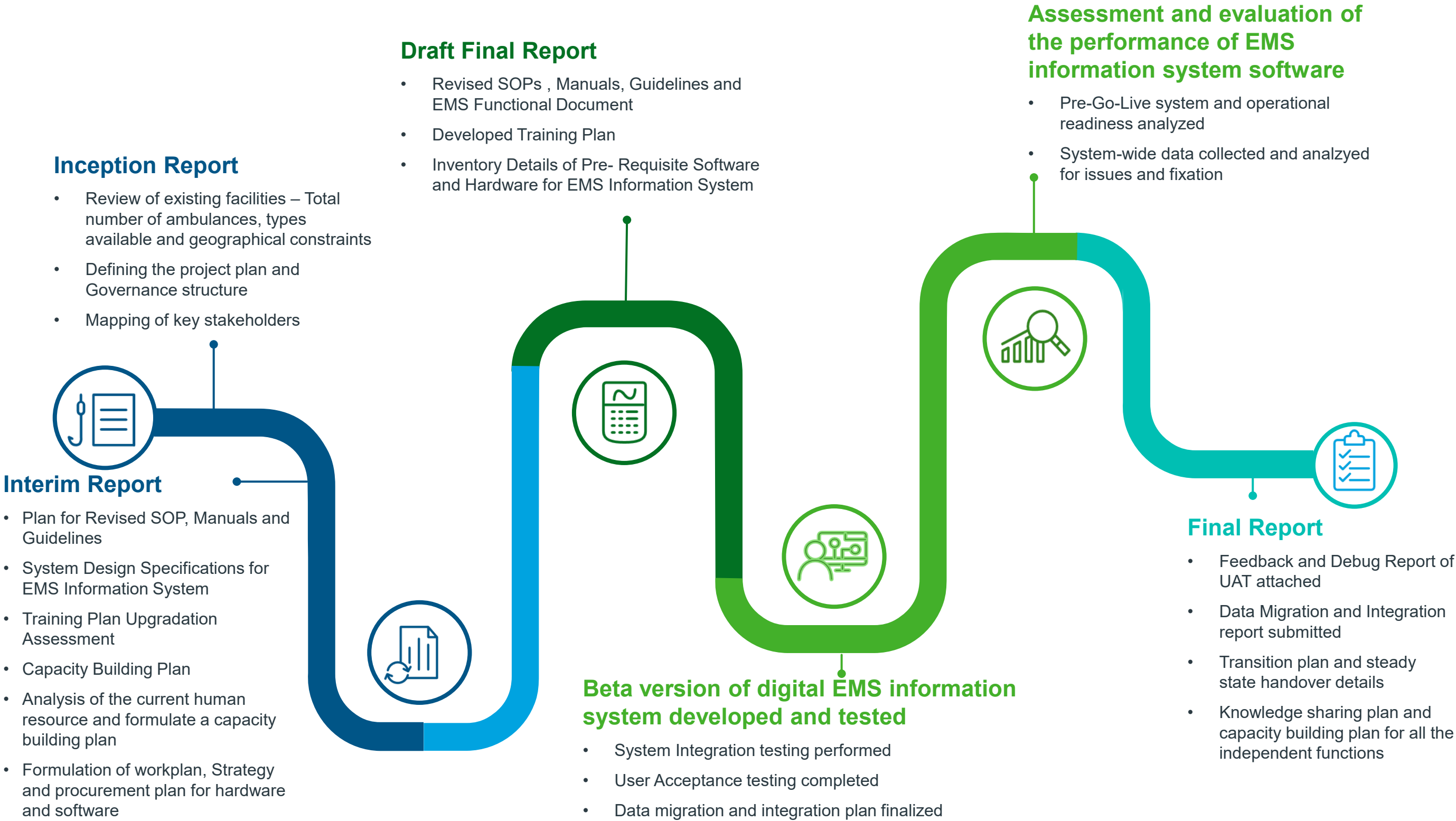


- Review and Update support strategy and communication process during Rollout with stakeholders
- Distribute the support resources over required locations
- Manage Support calls, logs and issues tracking
- Daily system round for monitoring users and their feedback
- Install fixes as per the EMS system requirement

Stage 9: Post Implementation Review and Support



Deliverables



KEY LEARNINGS

- To Understand the healthcare system of the country and how to do secondary research to understand the ground reality of the country.
- To know how to write proposals, various components required to write a request for proposal.
- To develop a holistic approach for EMS system in which the project must be started from ground intel to procurement of hardware and software and to install them .
- To develop training schemes for a particular country.
- To understand various stages such as User acceptance testing , beta testing ,etc which are helpful for testing and educating the stakeholders for specific type of software and how to use and implement them.
- Developed an approach of how a project is delivered and how to respond to an RFP.
- Developing a phase wise proposal which can be utilized for other countries having same geographical ,economic constraints.

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THANK YOU !