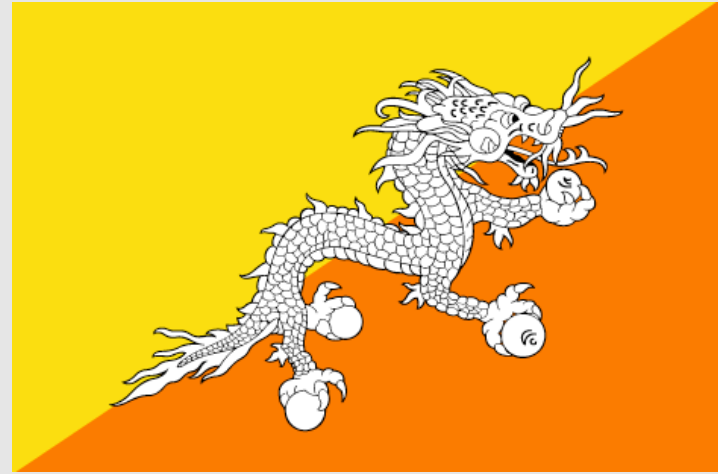


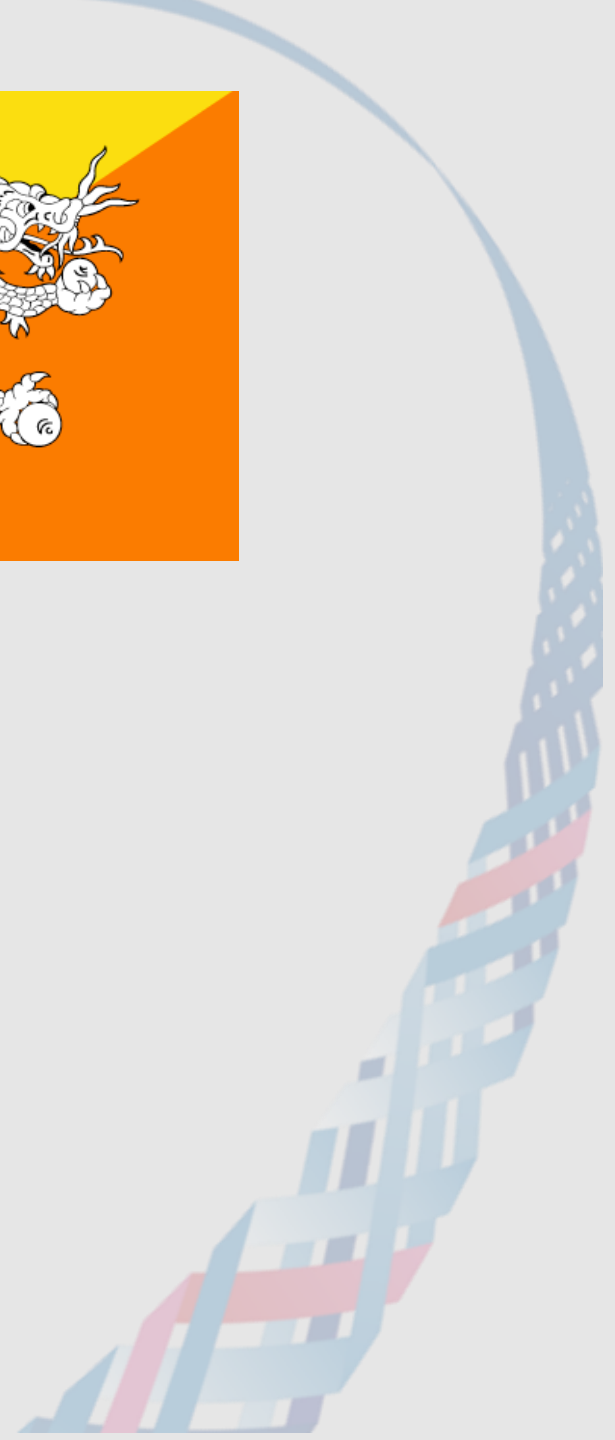


**Digital
transformation**

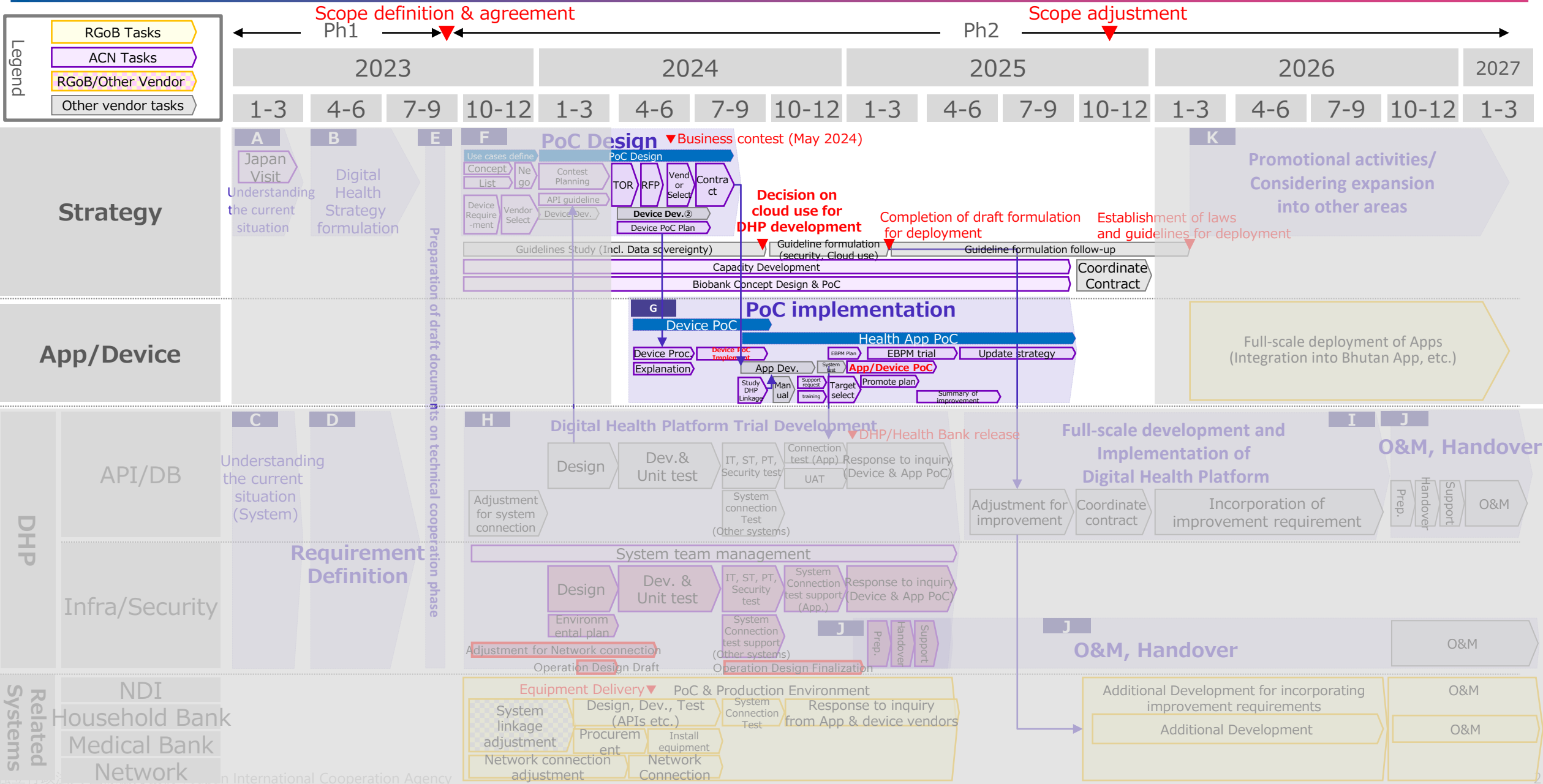


Health App Development TOR overview_ver1.0

April 2024



Master Schedule_ver1.03



This is supplementary document for the APP RFP.

App Business Requirements

(Reference image)- App Function Requirements

Detail on “03_FunctionalList_Draft Data Category of Data Bank_V1.0_(JICA_BhutanDX)”

□ App Business Requirements

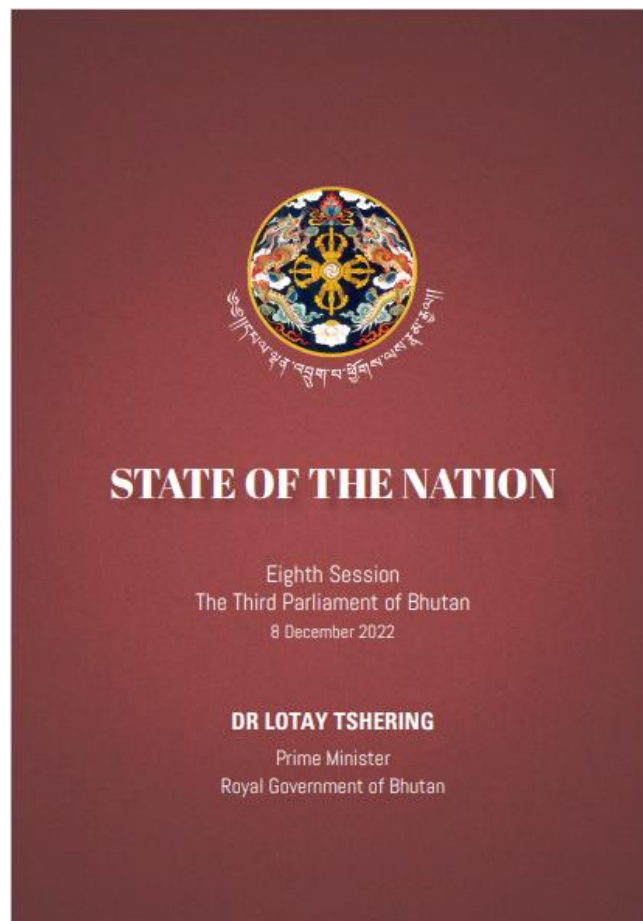
- ① **Role & Responsibility**
- ② **Contract scheme**
- ③ **Evaluation Method**
- ④ **Deliverables**
- ⑤ **Overall Schedule**
- ⑥ **Payment**

APP PoC Business requirement overview

The APP PoC Business requirements highlighted in the RFP are following

Business Requirement Topics		Outline	Page
Business Requirements	1 Role & Responsibility	APP vendor is responsible on "Pilot Activity Report" which is report after conducting the PoC of the created Application. Accenture will check the final report provided by APP vendor. Bhutan government will be responsible on the check of application.	Page 6-11
	2 Contract scheme	Maximum 3 companies will be selected which is one for each use-case have one company. Contract scheme will be discussed with Accenture after the business contest.	Page 12-13
	3 Evaluation Method & Criteria	There are two aspects on evaluation criteria on selecting the APP vendor which is, (1) Proposal which worth 80% and (2) Presentation which worth 20%. For the proposal, 4 categories will be looked at ①Company experience, ②Implementation Approach and Methodology, ③Technical Capabilities ④Experience and capability of members	Page 14-20
	4 Deliverables	Final deliverable on the Pilot Activity Report is due September 2025.	Page 21-23
	5 Schedule	Once the business contest is done, there will be contract discussion in June to July 2024, then App development from August 2024 – January 2025. Finally conducting APP PoC implementation at 3 locations (JDW, 2 sites) from February – May 2025.	Page 24-26
	6 Payment Financial Cap	Lump-Sum final payment at the end of the contract will be the base. However, in case of difficulty, the selected APP vendors could discuss in the contract discussion duration. Financial cap is Per use-case cap of approx. 41,800 USD. If you wish to propose all 3 use case in one app, ≈ 125,400 USD.	Page 27-38

This project was mentioned in “State of the Nation” in December 2022 as “Four Banks Project.”



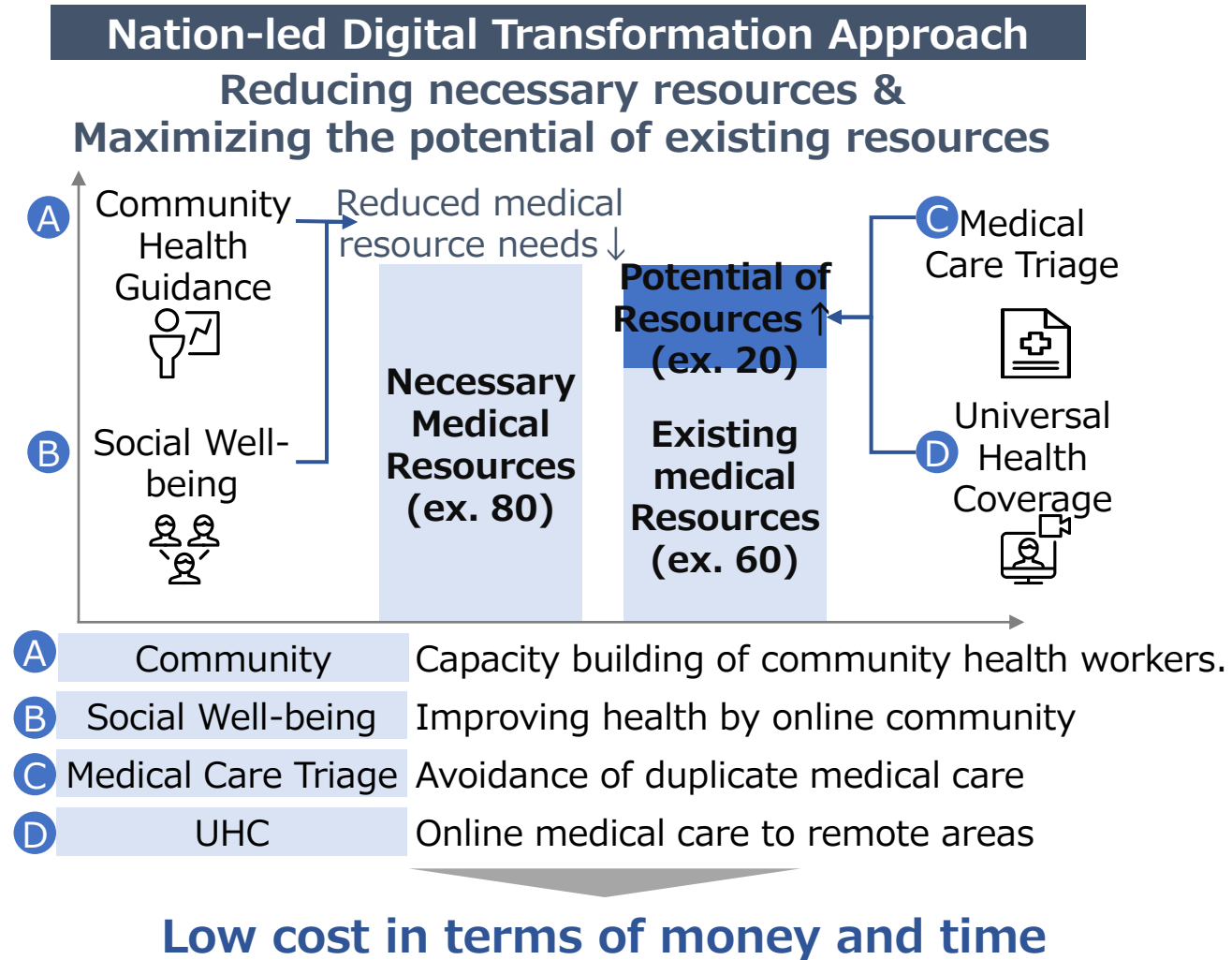
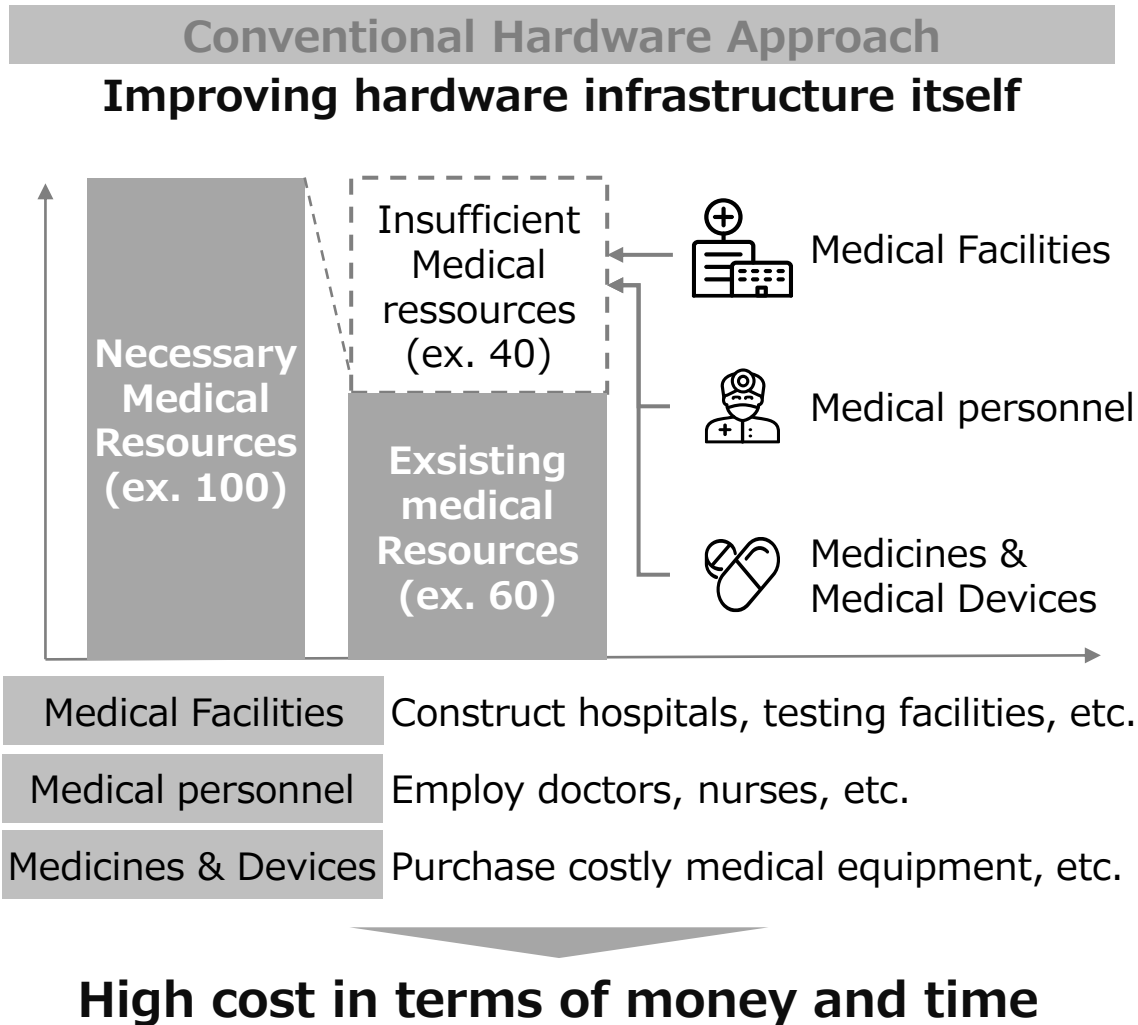
The Four Banks Project

The four banks (medical, health, biobank, and household) project is being jointly initiated by the health and information ministries with support from JICA.

The project is expected to strengthen digital health technology capacity and data to attract medical and pharmaceutical researchers, engage private companies and investors, develop new health-tech services and devices, and accelerate data collection by the business entities and domestic private companies.

How we improve healthcare (Nation-led DX approach)

By creating data linkage mechanism, we aim at realizing low-cost healthcare services to improve healthcare for the citizens and overcome budget deficit.



APP vendor is responsible on final report and development of application, **Accenture will check the final report provided by APP vendor. Bhutan government will be responsible on the check of application.**

Area	Contract owner	Finished product & Responsible for evaluation	Conducting Person
1 Service/ Application	<p>Accenture entitled by JICA HQ</p> <ul style="list-style-type: none"> Contractor with APP vendor Check the APP vendor output on “final deliverable(Pilot activity report)” and submission to JICA 	<p>RGoB</p> <ul style="list-style-type: none"> Check the APP vendor output on “Interim Deliverable (Application)” and is responsible on completion and evaluation of applications consideration for full-scale development of applications in future 	<p>App Vendor</p> <ul style="list-style-type: none"> Interim – Deliverable (Application) <ul style="list-style-type: none"> Development of three use case applications Final Deliverable (Pilot activity report) <ul style="list-style-type: none"> Preparation/delivery of pilot activity report

Roles on three use-case by App vendors

Objective is to highlight the implementation of Use-cases on the App and link them to Digital Health Platform (DHP), developed by NGN Technologies.

- **Use-case A- Community health guidelines:** An app interface for healthcare workers to have access to patient health data during remote visitation from the health devices that should be integrated to the interface.
- **Use-case B – Social well-being:** An app interface for online support within the community to interact and raise health awareness.
- **Use-case C – Medical Care Triage:** An App interface for data integration from patients, health providers to the government for health data analytics and evidence-based policy making

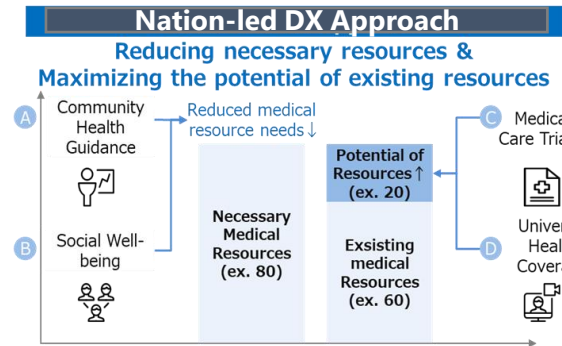
Community Health Guidance

A With the advancement of health guidance from local health workers, it is easier to obtain PHR on a regular basis in rural areas to improve health awareness.

Fig 2. Various services currently being offered by Health Navigators
Service-example: Maya Health (India)

Social Well-being

B Forming online communities between individuals affected by Health Issues, supporting the advancements of health in the social communities.



Medical Care Triage

C Data Integration Platform for personal and professional healthcare that improve gaps and triage, eliminating of unnecessary medical care.

Service Example: Healthcare Passport (Japan)

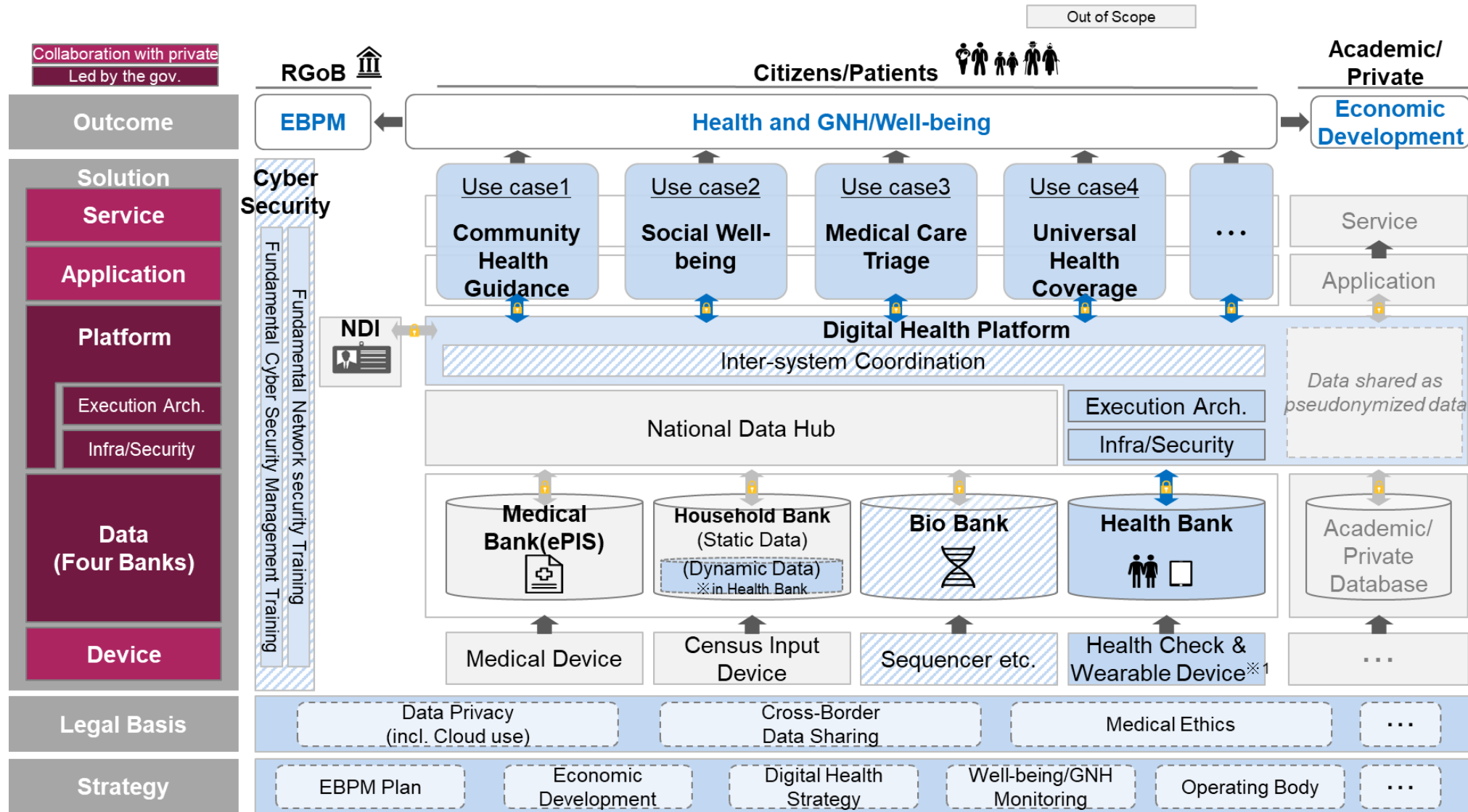
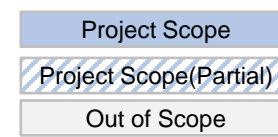
UHC (Universal Health Coverage)

D Provide online remote medical services in areas that were used to be

NOT IN SCOPE

* API Guidelines provided by NGN Technologies (as attached) to be referred to for linking the app use-cases

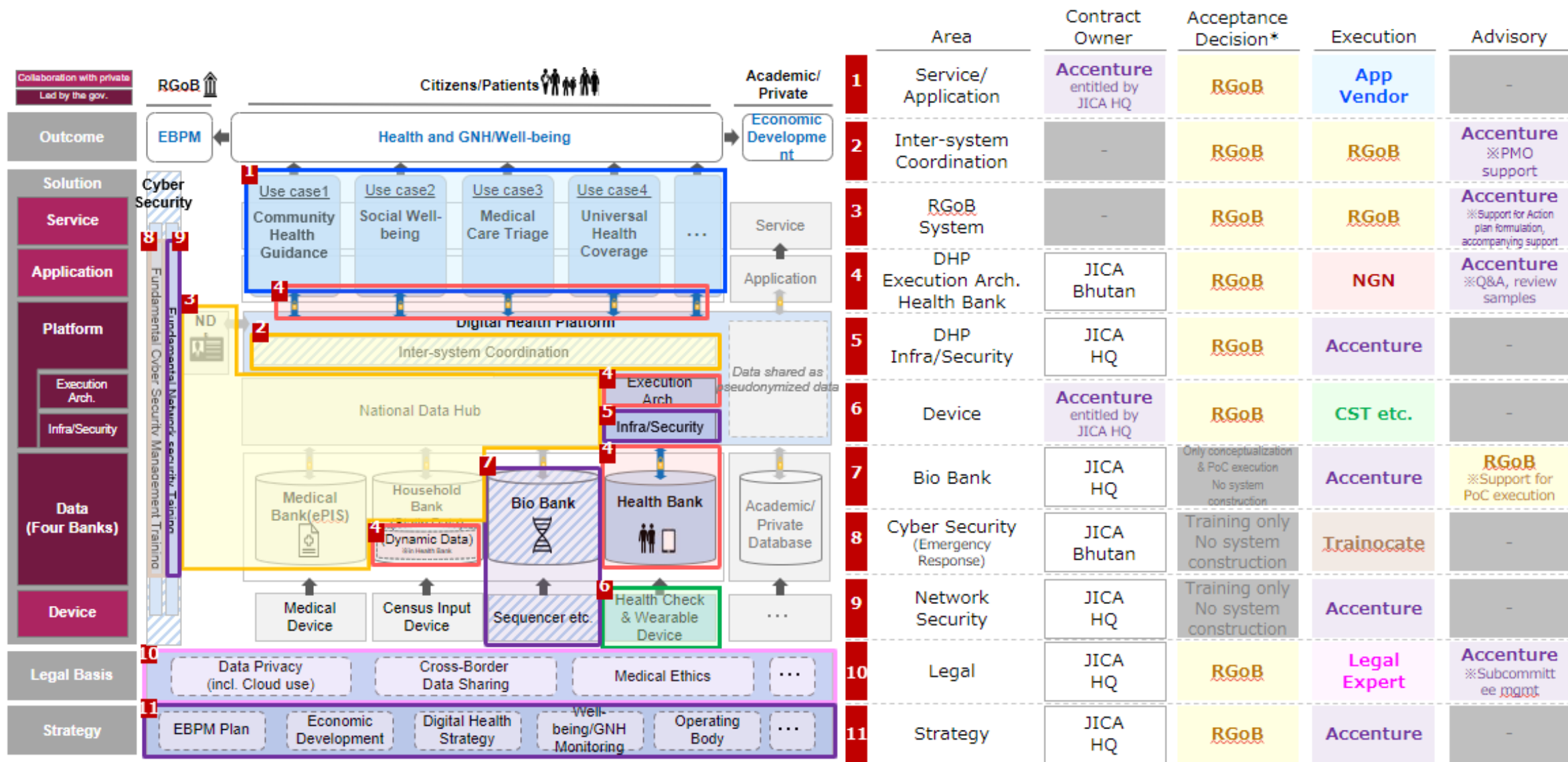
(Background) Project Overview - Architecture



※1. Health Bankへのデータ連携はアプリレイヤーを通じて実施される想定

(Background) The Project contract overview

Project Scope
Project Scope(Partial)

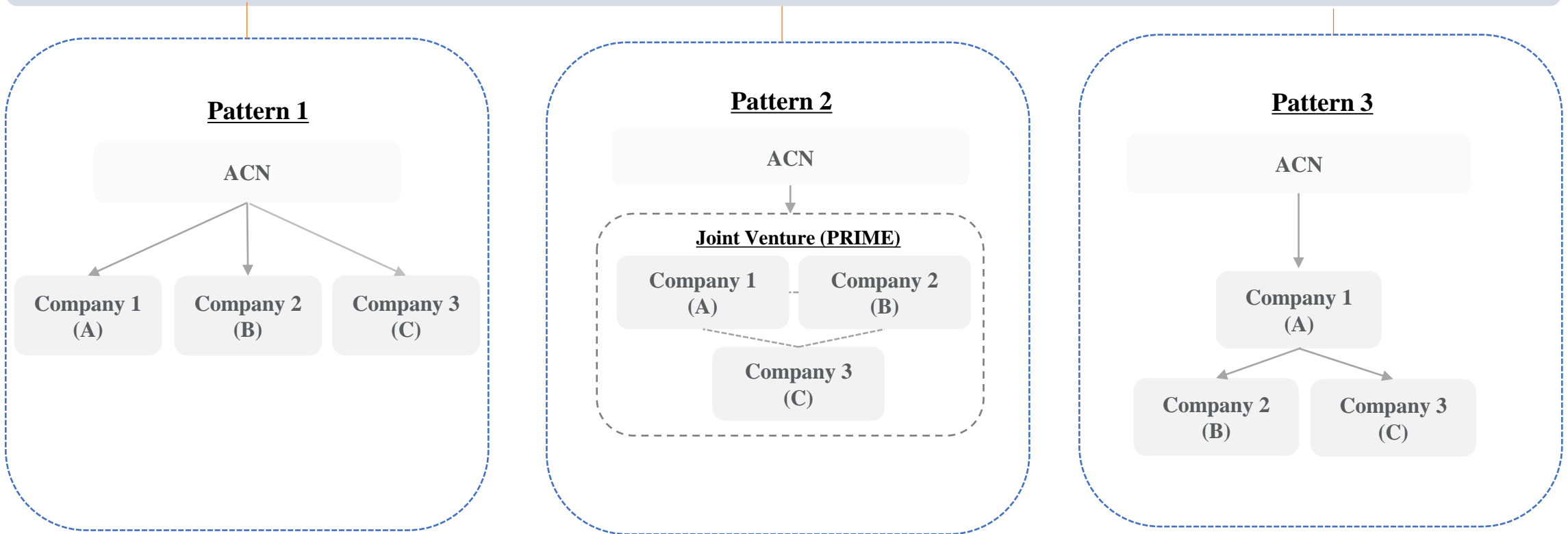


* Responsible for coordination & evaluation for acceptance decision.

Contract scheme with Accenture(1/2)

Maximum 3 companies are selected, which is one for each use-case. We prefer one company can cover all three use-cases (A,B,C) but follow considering the maximum style.

3 Use-cases (A,B,C)



Local company can also be company A,B or C if they have the capabilities to develop.
International company prefer to have a local partner or presence.

Please note that the contract scheme will be discussed with Accenture after the business contest.

Contest Winning and Contract Scheme *(After the winner is announced)*

Winning Schemes example

- **Maximum companies allowed:** up to three companies may be selected.
- **Single company dominance:** if one company excels in all areas it use-case(secures victories in all three use-cases) it could be procured with one company. There maybe a chance second-place option might be considered.

Contacting Scheme

- ❖ If **international vendors are without local coverage** in Bhutan, then **joint venture with Bhutan local vendors** would be recommended
(Vendors do not need to look for local vendors specifically unless they already have a partnership)
- ❖ International vendors: **Local subcontracting and evaluation** (utilizing local human resources to be considered)

There are two aspect on evaluation criteria on selecting the APP vendor which is, (1) Proposal which worth 80% and (2) Presentation which worth 20%.


		<u>Weightage</u>	<u>Result Announcement</u>
1. PROPOSAL DOCUMENT	<ul style="list-style-type: none">✓ Proposal word document	80% weightage for the proposal word document Submit 1 week BEFORE the Business Contest date	Announce later date after the business contest
2. PRESENTATION	<ul style="list-style-type: none">✓ PowerPoint presentation for Live Presentation of applicable use-cases✓ Existing APP DEMO is (OPTIONAL)	20% weightage for the presentation and demo	On the day of Business contest

APP PoC Evaluation Criteria for Proposal

There are 4 categories for evaluation criteria for proposal, (1) Company experience, (2) Implementation Approach and Methodology, (3) Technical Capabilities (4) Experience and capability of members

Topics	Outline of Criteria for proposal	Points
1 Company Experience	<ul style="list-style-type: none">① A record of projects and its adequacy for the assignment by the firm② Volume of Relevant Information③ Experience of Vendor (Global and in Bhutan)	• 10 points
2 Implementation Approach and Methodology	<ul style="list-style-type: none">① Basic Requirements /understanding on use-case by presenting what APP can do② Study of Policy & Plan (know Bhutan government's policy that is relevant)③ Adequacy of Step-by-Step plans / methodology presented in flow of APP & Plan of PoC④ Concreteness of Schedule & deliverables stated clearly⑤ Handover details of method timeline, will be considered as added value⑥ Has Customization to local Bhutan context such as language⑦ Evaluation consideration of use-case AI and supportive EBPM (Evidence Based Policy Making) analysis capability is included on as plus aspect	• 50 points
3 Technical Capabilities as Company	<ul style="list-style-type: none">① Proficiency in Technology(AWS cloud setup, API connection)② Development Platform Compliance③ Regulation & Security Standards Compliance④ Platform Scalability (Data management size is considered?)⑤ Testing & Quality Assurance Procedures & Schedule⑥ Support & Maintenance	• 20 points
4 Experience and Capability of Members	<ul style="list-style-type: none">① Relevant Skills and Professional Credentials (Creating APP & conducting PoC)② Evaluation of vendor's approach to adequately manage resource and assignment of personnels③ Educational Qualifications	• 20 points

We hope to ask APP vendor to make sure to select 1 project manager as the main communication person in charge of their team and progress report.



APP Vendor Team Requirement

Description

For each of the three use cases, best suited team structure to be suggested.

Suggestion

- ❖ Accenture prefers at least **1 Project Management & Communications Representative**
- ❖ Other team members as suited (for example, 1 Technical APP, 1 Maintenance, 1 Industry Expert, 1 Health Data & Security expert)

Proposal document will be evaluated by Proposal 80% and Presentation 20%.

Proposal
(80% weightage)

Panel Judges – 8 people

- **Government of Bhutan:** 3 Members in total (Govtech Office and MoH)
- **JICA:** 2 Members in total (JICA Headquarters and JICA Bhutan Office)
- **Accenture:** 3 Members in total (Strategy & Business, Technical)



**Presentation on
the day of
business contest**
(20% weightage)

Special Invitee

- **Government of Bhutan:** 3 Members in total (Govtech Office and MoH)
- **JICA:** 1 Members in total (JICA Bhutan Office)
- **Accenture:** 2 Members in total

Voters 50 people

- Govtech & MoH (Healthcare workers, MoH Officials)
- International Organization Workers (WHO, UNDP, UNFPA, UNICEF)
- Medical Staff (Doctors, Nurses, Health Assistance)

Online Voters

- Citizens (Online voting)
- Medical Staff (Doctors, Nurses, Health Assistance)

Limit of page number for proposal

Total page limit for content for #3 is 25 pages and total number of #1-5 should be less than 50 pages.

Content	Description	Page Limit
1	Technical Proposal Submission Form	N/A
2	Company Organization and Experience	N/A
3	Description <ul style="list-style-type: none">- Implementation Approach, Methodology- Work Plan for Performing the Assignment- Technical Capabilities	25 pages
4	Work Schedule and Planning for Deliverables	N/A
5	Experience and Capability of <u>members</u> Curriculum Vitae (CV) for Key Experts	N/A
Total		50 pages

Evaluation: Business Contest Details

The presentation will be done on business contest, on 22nd May, 2024. This schedule will change depending on the number of proposal given.



Venue

MoH Conference Hall



Date

May 22nd, 2024



Time

8:30 AM onwards



Result Announcement

16:30 on the day of Business Contest For winner for presentation



Contract Negotiations

Post Business Contest , a meeting will be scheduled with the winner to discuss further proceedings (June-Aug 2024)

Tentative Itinerary

Activity	Time	Location
Reception and registration	8:30 AM onwards	
Introduction	9:30 AM	
Use-case A Presentation	10:00 AM-11:40 PM	MoH Conference Hall
Lunch Buffet	11:40 PM - 12:40	Conference hall
Use-case B Presentation	12:40-14:20	MoH Conference Hall
Use-case C Presentation	14:20-16:00	MoH Conference Hall
Games/Speech (TBD)	16:00-16:30	MoH Conference Hall
Result Announcement for presentation	16:30-17:00	MoH Conference Hall

This schedule is tentative as it will be finalized once it is defined how many company apply. We are assuming per use-case 5 companies, 10min presentation and 5min QA per company

3. Page Limit for Presentation content

Presentation page limit is 15 slides in PPT.

- Presentation Content

Business Contest Details:

- **Date: 22nd May, Wednesday (8:30 AM-17:00 PM)**
- **Location:** MoH Conference Hall, 3rd Floor, Thimphu, Bhutan
- **Presentation style:**
 - ✓ Presentation Time – 10 Min per use-case
 - If your company is proposing for all three use-cases**, its total of 30min of presentation. You can choose if you want to present all together or divide your presentation into three sections. Please make sure to note how you would like to present on your proposal.
 - The winners will be selected for each use case individually)
 - ✓ Presentation material
- Live Presentation (less than **15 slides of PPT**)
- Existing APP DEMO is (OPTIONAL)

Presentation content:

- ✓ Content
- Company Overview (1 slide)
- Content of proposal (less than 10 slides)
 - The main Content within the proposal should focus on “Implementation Approach and Methodology” (explaining how your application can realize the use-case, flow of application, time schedule and PoC Plan)
- Technical Capabilities (1-2 slides)
- Capabilities of members showing team structure (1 -2 slides)

Note: In the presentation, please ensure to emphasize the following points:

- (1) How can application **contribute to pain-points** for health professionals?
 - (2) How does the application **improve well-being and health** of people in Bhutan?
 - (3) How is your proposed application **unique**?
 - (4) Show your consent forms you hope to design to ensure the data will be used on right manner
 - (5) It is beneficial to mention following capability or experience
 - ① Experience with AWS, as the DHP that you're connecting though API is built in AWS
 - ② How you plan to support and conduct maintenance plan
 - ③ Supporting Evidence-Based Policy Making (EBPM)
 - ④ Customization to local Bhutan context such as language (Base has to be English but additional such as Dzongkha as option)
 - ⑤ Additional AI features
- For **international vendor**, kindly share how you plan to collaborate with the local vendor. What parts will be assigned to local and what parts will be handled by the international entity.

Deliverables & Payment outline

Contract duration is expected to be August 2024 to September 2025. Payment can be done once the final deliverable “Pilot Activity Report” is submitted, and payment completed next month.

Contract duration

- **August 2024- September 2025**

Rough Schedule

- **May 2024** : Proposal and Final presentation at business contest
- **June-July 2024**: Contract Procedures with winners
- **Aug 2024-Dec 2024**: APP development
- **January- May 2025**:PoC of App
- **September 2025** : Analysis on the improvement of APP and Reporting documentation & maintenance of APP

Payment condition

- **Submit of Final Deliverable (September 2025) which is “Pilot Activity Report”. Then it can be paid in 30days after the invoice is given. Accenture will have certain type of report format and provide along with that report format**

On the attach of report includes (examples):

- (1) Details on how Health Bank application (Interim –Deliverables) is used (manual)
- (2) What was result during PoC (Conducted in Jan 2025-April 2025)
- (3) Summary of improvement needed (to consider integration with Bhutan government APP as next steps)

(Reference) Schedules and Deliverables

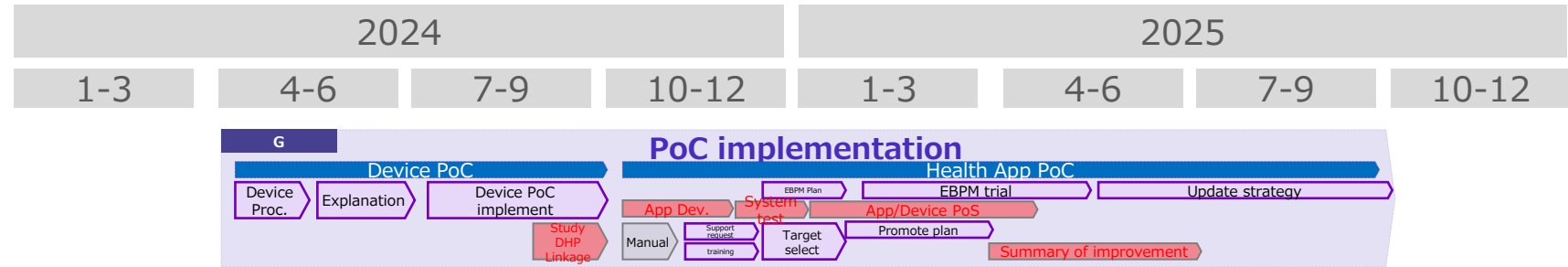
Final deliverable on the Pilot Activity Report is due September 2025.

1. Timeline

2. Type of Deliverables

3. Deliverable Outcome

4. Evaluator



Interim Deliverable (by Nov 2024)

Complete Application with all the use-case functionalities should be done by Nov 2024

RGoB – Evaluate the App Functionality relevance for Bhutan

Final Deliverable (by September 2025)

Pilot Activity Report

1. APP Pilot Activity Result & Analysis
2. Details on the EBPM trial result
3. Summary of improvement needed
4. Handover documents
 - Accenture – Evaluate the report document. Accenture will have certain type of report format and provide along with that report format
 - RGoB – Evaluate the improvement needed

Application Handover:

The App as a final deliverable to the government to be handed over to Government of Bhutan

Handover

- ❖ Based on agreement between JICA, Bhutan Government, Accenture and Application Vendor, **the Ownership and use rights transferred to the Government of Bhutan**

IP Rights

- ❖ This Intellectual property (IP) rights of Applications developed for implementation shall be treated as “Interim – Deliverable (Application)”.
- ❖ The ownership, copyright, usage rights, and the scope of transfer to the Government of Bhutan shall be organized for each use case, and shall be discussed and agreed upon with the Government of Bhutan, JICA, Accenture and the selected APP vendor (subcontractor) prior to application development. Thus during the contract negotiation phase.

Overall Schedule

Once the business contest is done, there will be contract discussion in June to July 2024, then App development from August 2024 – January 2025. Finally conducting APP PoC implementation at 3 locations (JDW, 2 sites) from February – May 2025.



Business Contest

- Hold business contests and select app vendors (assume final decision with the first document and the second presentation)

Contract Procedures

- Implementation of necessary contract procedures such as contract negotiation, agreement content, credit management checks, etc.

App Development

- Develop apps that realize use cases through selected app vendors done by Nov 2024
- Test with DHP will be conducted in Dec 2024

APP user Manual

- Create APP user manual for Bhutan Government on how to use APP.

App PoC Implementation

- Jan 2025
 - ①Conducted as a small-scale trial for fewer than 100 people to identify areas to improve apps, etc. for actual PoC in Feb
 - Feb- May 2025
 - ②Conducted PoC with 3000 people

Reporting

- **Pilot Activity Report**
 - APP Pilot Activity Result & Analysis
 - Details on the EBPM trial result
 - Summary of improvement needed
 - Handover documents

- Try out the created APP in the PoC

Objectives

- The primary goal of this project is to execute a pilot implementation within the healthcare settings. Healthcare professionals such as doctors, nurses, and health assistants will be trained by candidates to use the Citizen Health Application to gather data from pre-selected and consented patients. The candidate will have to be responsible to orchestrate the end-to-end pilot implementation, managing the on-ground monitoring and support activities, and conducting surveys at the conclusion of the pilot.

Scope of Project

- The selected candidate will be required to facilitate the orchestration of the pilot implementation to handle on-ground monitoring and support activities as follows:
 - **Cooperative Installation of Pilot Target Hospitals:** Conduct PoC outline, application device description, on-site training method, and request for cooperation in disseminating to monitoring targets to PoC stakeholders (MoH, Hospitals, etc.)
 - **Field Training to NCD Focal Point (HAs, Nurses, etc.):** Conduct an explanation of the expected use case and how to use app/device (assuming a training / briefing session)
 - **Selection of Target Audience and Explanation of Cooperation:** Agreement and explanation of monitoring targeted participants (citizens) and hospitals for approval and cooperation (i.e. consent, etc.)
 - **Application PoC Implementation:**
 - Conduct Small-scale and Large-scale PoC Implementation
 - Small Scale PoC:
 - Duration: few weeks in Jan 2025
 - Target: 100 people (or less)
 - Location: all in Thimphu 3 locations (JDWNRH, THC, PHC (ORCs Included))
 - Large Scale PoC:
 - Duration: 2- 3 Months (Feb- May, 2025)
 - Target: 3,000 people collection data of Blood pressures and general data
 - Location: all in Thimphu 3 locations (JDWNRH, THC, PHC (ORCs Included))
 - **Data Analysis and Findings:** Conduct patient satisfaction survey, and analyze outcomes with improvement points from survey

Starting in June xx Accenture hope to set online meeting with winner of Application developers.

Post Contest Activities	Timeline	Description
Final Announcement of proposal and presentation	End of May 2024	
Meeting with Winning team(s)	Starting of June 2024	Online meeting
Contract Negotiations	July – August 2024 (roughly two months or so)	Type of contract to be decided. Whether single company or joint venture of international and local company
Contract Signing	2 weeks after the negotiations	Detailed schedule to be shared by the winning companies
Weekly meetings with Accenture	To be scheduled	Conducted in online style and weekly progress report by the project manager , based on the work breakdown structure(WBS) excel report

Lump-Sum final payment at the end of the contract will be the base. However, in case of difficulty, the selected APP vendors could discuss in the contract discussion duration.



**Payment
Method**

Lump-Sum (paid all together) at the final payment at the end of the contract

If the above is difficult, payment method could be negotiated during the contract phase. Split the payment into phases of deliverables. Possibly, depending on the use-case deliverable

Per use-case is with a cap of approx. 41,800 USD. The financial document of the vendor's proposal will be opened after the technical proposal review.

Step 1 – Technical Proposal

- Judgement and Evaluation of Technical Proposal after the business contest and before checking the financial proposal

Step 2 – Financial Proposal

- Specification 1 (use-case) ≈41,800 USD**
In other words,
- 1 use case *≈41,800 USD
 - 3 use case ≈ 125,400 USD

Step 3 – Next Steps

- If proposal within the budget:
- Further Contractual discussions
 - Technical Discussions
 - Setting up of regular review meetings

*1 Use case (\$41,800) in Figure 14 includes the development of any one of use-case A/B/C (details on TOR Section 3.1, 3.5 and 4).

For the 3 use-case bundle means those who wish to do development all three use-cases A/B/C at once (details on TOR Section 3.1, 3.5 and 4).

Proposal Submission Timelines

Business Contest will be held on 22nd May and Pre-explanation of TOR will be done by Accenture post the launch of TOR

19th April 2024

24th April 2024

26th April 2024

8th May 2024

15th May 2024

22nd May 2024

1st Week of June 2024

June – July 2024

Launch of TOR

Submission of Questions by Participants

Pre-explanation by Accenture (Answer on questions)

Answer about the questions (Govtech website)

Submission of Proposal

Business Contest

Final Judgement Announcement

Contract Negotiation

****As all the invited company is aware of the Terms and Condition, we have set two weeks for submission of quotation.***

Please submit by email

1. Submission, Sealing, and Marking of Proposals

1.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms. The submission can be **done by E-mail**

1.2 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

Soft copy of proposals can be emailed or uploaded on the safe URL provided

1. Submission, Sealing, and Marking of Proposals

B. Submission of the Proposal by e-mail:

1.9 The signed Proposal shall be sent to the address **Accenture contact person (JICA-Bhutan-Project-for-APP-Business-Contest2024@accenture.com)** in following three steps:

Step 1. Submission of Technical and Financial Proposal, in separate files in PDF format protected with a different password for each document.

In case the data size of the Proposals are large, and E-mails are not being accepted, please email us. We will provide you with the link.

Step 2. The consultant shall send a password for the Technical Proposal in a separate e-mail. The password only for the Technical Proposal shall be submitted.

Step 3. After the evaluation of the Technical Proposal, which is planned to be conducted after the Business contest, Accenture will then request a password to access the Financial Proposal, only to the Consultant(s) that pass the technical phase.

1.10 The Proposal must be sent to the address and received by Accenture **no later than 15th May 2024**, or any extension to this deadline. Any Proposal received after the deadline may be declared late and rejected, and promptly returned unopened.

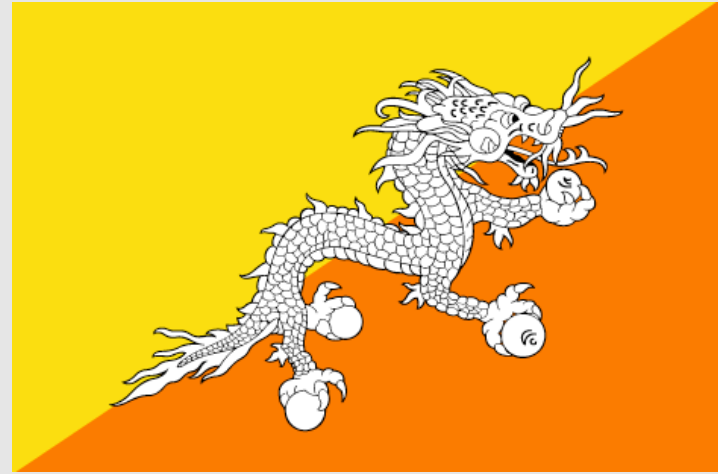
Participating organizations or consultants to refrain from interacting with Accenture after the Proposal submission to maintain confidentiality

2. Confidentiality

- From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact **Accenture** on any matter related to its Technical and/or Financial Proposal.
- Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.

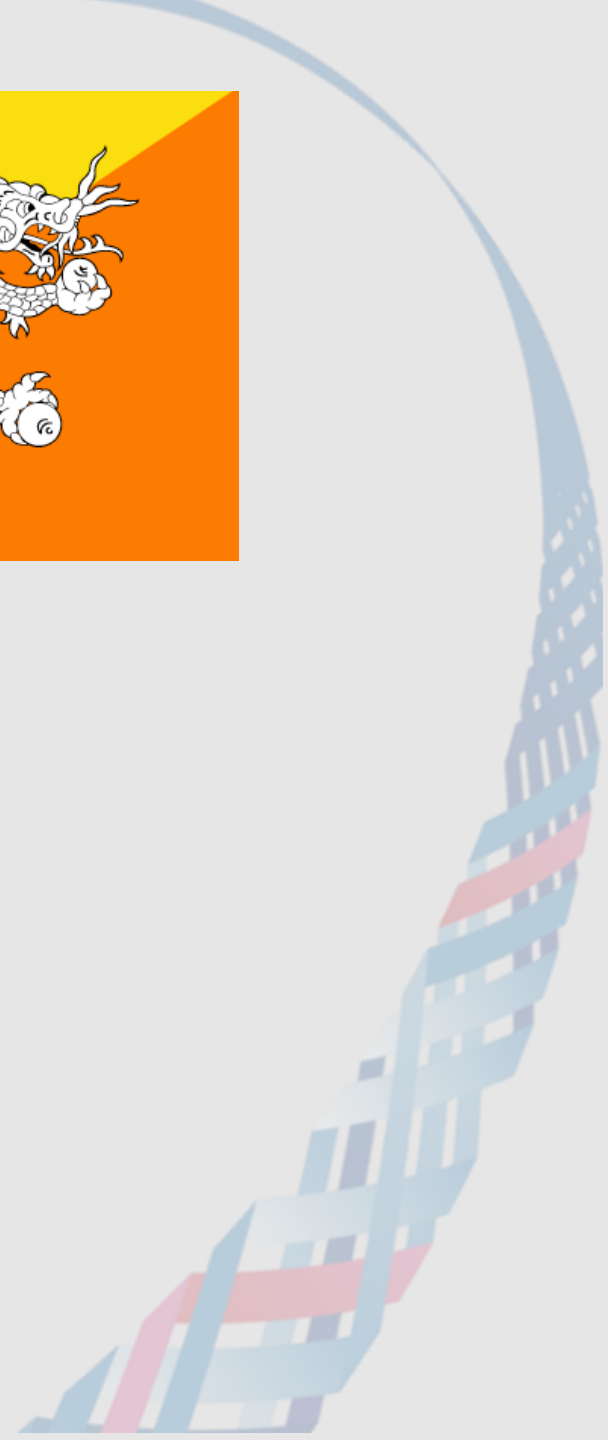


**Digital
transformation**



Health App Development (Reference) Functional Requirements

April 2024



Today's agenda is to provide overall TOR information

Introduction and Overview

App Business Requirements

(Reference image)- App Function Requirements (data details on excel

03_Functionallist_Draft Data Category of Data Bank_V1.0_(JICA_BhutanDX)

(Reference image)- App Non-Function Requirements

App Function Requirements (data details on excel)

Objective is to share the minimum data and functional requirements for App Development

Function it must meet is on the excel sheet

03_FunctionalList_Draft Data Category of Data Bank_V1.0_(JICA_BhutanDX)
Sheet "03_02_Step and Function list"(as attached) to be referred to for details on data requirements

Sample snapshot from excel

Steps	Journey	Function	Description	Sample Data	Use-case Application
Step2	APP REGISTRATION (BY HEALTHCARE STAFF)	Registration	User takes photo of citizen's ID Card and enter registration attributes on behalf of the citizen. The OCR Reader prefills information to the registration, and system verifies if the information matches to the National Digital ID Platform.	Input Registration Attributes: Name Health Bank ID Sex Date of Birth National Digital ID No. Phone Number	Usecase A

Objective is to share the minimum data and functional requirements for App Development

Data Collected from Healthcare facilities:

- Time needed to screen a patient.
- No. of patients screened.
- Telemedicine access rates for patients in remote areas
- Data utilization for health workers: Report Generating

Data Collected from Citizens:

- Hypertension
- Blood Sugar
- Cholesterol
- CVD Risk
- Overweight
- Tobacco Consumption
- Alcohol Consumption
- Salt Intake
- Vegetable intake
- Betel use
- Physical inactivity

Sample snapshot from excel

03_01_StepandData_ToBe					
Updated April 17					
Availability of data	Number in Table list & Data volume (will be used for the DHP connection test in Dec 2024)	Data Category	Data Points	Location (Please note that following "Digital Health App" data source has to be saved in Health Bank)	Note
✓		ID	CID	NDI Wallet	
	1	ID	DHP ID	DHP	Created newly once register
✓	15	ID	HB ID	Health Bank	Created newly once register
✓		ID	UHID	Medical Bank	ePIS ID
✓		ID	HHID	Household Bank	Household bank ID or CID (To be checked later)
		ID	BBID (Out of scope)	Biobank	Biobank ID. Out of scope
	2	App Information	Consent Management	DHP	Opt-in (Primary), Opt-in (secondary) or Modified Opt-out (Secondary) To App vendor: Percentage of target population agree to the secondary use of data should be reported to Accenture.
		App Information	Number of registered app users	Digital Health App	Number of users enrolled (Citizens/Professionals(Healthcare provider)) To App vendor: Number of users enrolled should be calculated and reported to Accenture.

03_FunctionalList_Draft Data Category of Data Bank_V1.0_(JICA_BhutanDX)

Sheet "03_02_Step and Function list"(as attached) to be referred to for details on data requirements

Citizens will have the flexibility to choose opt-in or opt-out according to their preferences for secondary data utilization

Citizens' Opt-in Consent Procedure

1

Terms and Conditions

Terms and Conditions for Data Opt-in Consent

Primary Usage (Required)

Secondary Usage (Optional)

For Research

For Third-Party

Agree to the T&C

Register

Secondary Use Opt-in will be asked during registration

1. User can select which data to be shared to which organizations:
 - Research (Non-Commercial)
 - Third-Party (Commercial)
2. User can select the options on which health data they choose to share*

2

Settings

Settings

Personal Information >

Link Apps & Device >

Switch Language >

Set Password / PIN >

Terms & Conditions >

Log Out >

Manage Consent

Personal Information

Allow Secondary Use

For Research

For Third-Party

Opt-in/out choice can be changed after registration in Settings under toggle feature

Citizens will have the flexibility to choose whether to do opt-in or opt-out according to their preferences from these two entry points

Company's Procedure of Obtaining Data for Secondary Use

1



Government Authorization: Company asks for permission to Bhutan Ethics Review Board, while specifying the purpose on why and which secondary data will be used to ensure transparency.

2



Reviewing of Permission: The Bhutan Ethics Review Board reviews the company's application form submitted to ensure privacy safeguards, data compliance, ethical considerations, etc. If the company's application is approved, they will be granted authorization to access the platform for secondary data use. However, if the application is not approved, the company will be required to make revisions to align the comments provided by the review board.

3

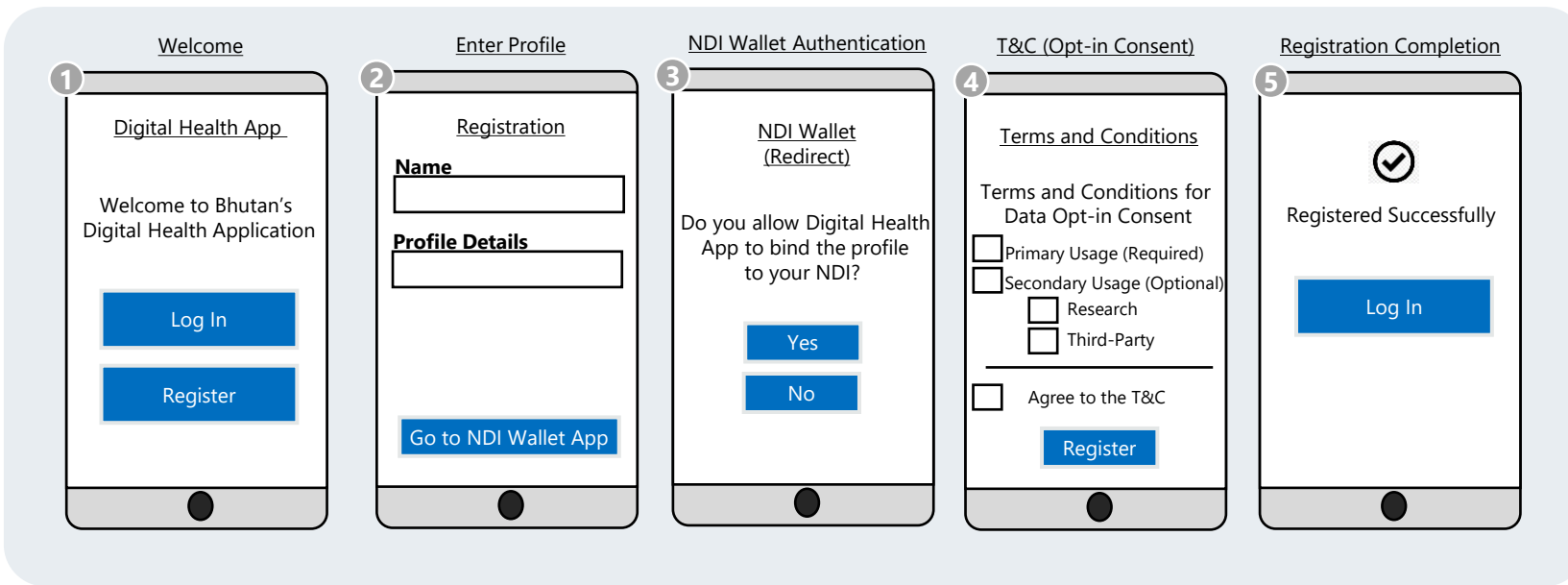


Secondary Data Use from Consented Citizens: Based on citizens' opt-in procedures, the company can use the consented data within the secondary data platform. The Bhutan Ethics Review Board monitor companies' data usage to maintain ongoing compliance.

*Due to the interconnection of the health data, careful consideration is required to maintain the integrity and usefulness of interconnected data

Consent Process of Data for Primary Use

For primary care purposes, consent of primary use is mandatory. If citizen does not allow consent for primary use during registration, they will not be able to create Digital Health App account.



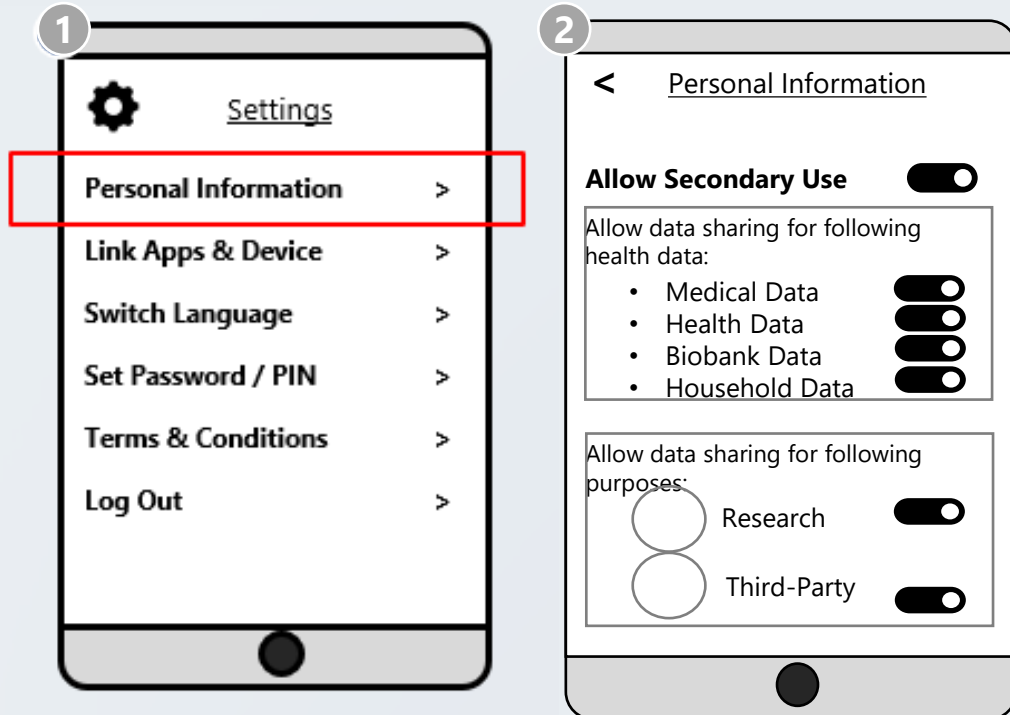
Primary Data Collection is Required (Mandatory Field), while Secondary Data is Optional. If user did not check on the box on primary field, the button will be disabled, and they will not be able to proceed the registration process.

Consent Process of Data for Secondary Use Opt-out

In the personal information citizen can modify which data could be used on secondary use

Data Opt-out in User Settings

2



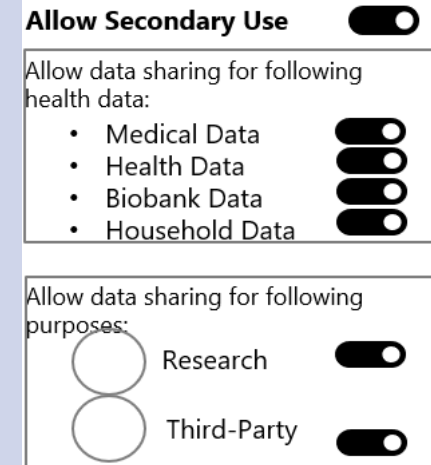
Discussion Point

Secondary Consent Grouping*:

User will be able to choose which data to share and also to whom the data is being shared within the user settings.

The grouping of type of data will be based on the four banks, and to whom which data to be shared will be generalized for sustainability and streamlined purpose.

Sample Mock-up

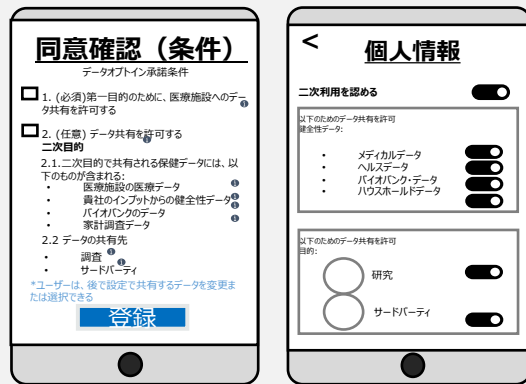


*Due to the interconnection of the health data, careful consideration is required for selective information to maintain the integrity and usefulness of interconnected data

Overview for Secondary Data Usage

The flow below explains the process of secondary use data from input, process, to output. The process involves citizens registering and providing opt-in consent for secondary data sharing. Upon registration, a unique ID will be generated to keep personal information pseudonymized. Secondary data users must go through an approval process and can access the data via government-secured data sharing platform.

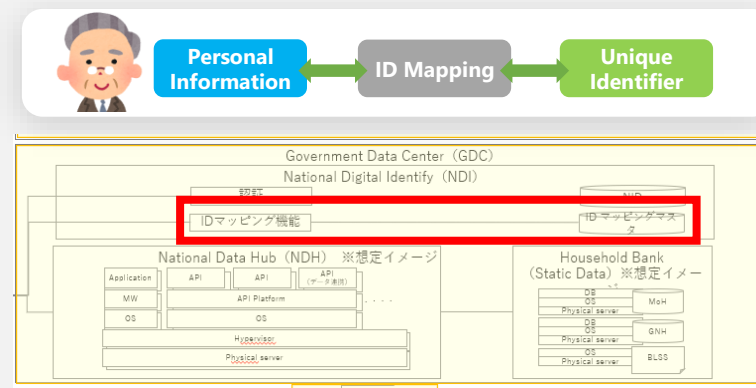
1 Input



During registration, citizens will be asked to give permission for their data to be used in both primary (mandatory) and secondary (optional) setting. In case of secondary use, citizens can specify the type of data they want to share as well as the stakeholders they want to share the information with. If the user chooses to opt-in their data may be utilized for secondary purpose. They will also have the option to opt-out any time through their settings.

Once registered, both citizens and healthcare providers can input the personal health record of the individual. The health data will be associated with that particular unique ID.

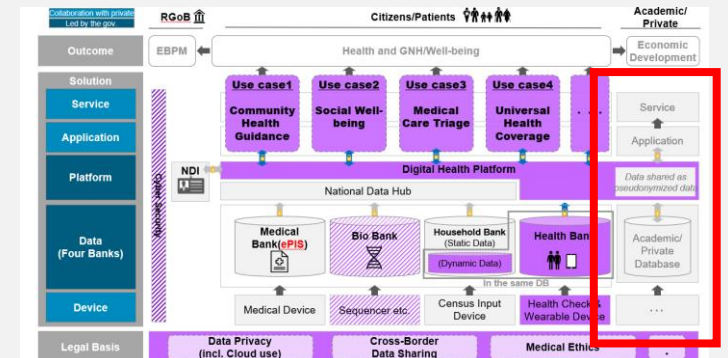
2 Process



After registration, a unique ID will be generated as an identifier without disclosing any personally identifiable information (PII)—specifically name, sex, date of birth, age (interpreted), permanent address.

The data can be kept pseudonymized using the unique ID identifier. It is also possible for re-identification through ID Mapping table that links the unique identifier and National Digital ID together. The centralized and encrypted ID Mapping table is retained separately on-premise in Government Data Center




3 Output



To request for pseudonymized data use, secondary data users such as private organizations and university institutions will have to go through an extensive approval process that requires stating the objectives for data use to the data governing committee (government).

After approval, approved data users can access the consented opt-in data through a government-secured data sharing platform (not within the current scope)

The following are possible device for Blood Pressure that maybe asked to be connected. The product will be bought by Accenture for the PoC. Please suggest if any one is feasible on your proposal.

Model (Clinically Validated)	OMRON Automatic Blood Pressure Monitor HEM-7120 (link)	A&D Medical electronic blood pressure monitor UM-212BLE (link)	Welch Allyn ProBP™ 2000 Digital Blood Pressure Monitor (link)
Image			
Quality	<ul style="list-style-type: none"> • Portable devices • Cuff pressure • Oscillometric/auscultation • Measurement parameter: Systolic or diastolic pressure, Heartbeat • Battery life: 300 measurement conditions • Memory 2 people x 100 times 	<ul style="list-style-type: none"> • Portable devices • Cuff pressure • Osillometric • Measurement parameter: Systolic or diastolic pressure, Heartbeat • Battery life: 300 measurements • Memory: 99 data 	<ul style="list-style-type: none"> • Portable devices • Cuff pressure • Osillometric • Measurement parameter: Systolic or diastolic pressure, Heartbeat
Price	\$109.00 Additional Cuffs size: ¥3300	\$185 Additional Cuffs size: ¥2200-5000	\$153 Additional Cuffs size: ¥3000-5000
Data Management	<ul style="list-style-type: none"> • OMRON connect app and OMRON connect compatible devices (https://datahealthcare.omron.co.jp/hms_b) 	<ul style="list-style-type: none"> • Bluetooth Low Energy Ver.4.1 • SDK is available for system integrator (link) 	<ul style="list-style-type: none"> • Data transfer to PC/smartphone/tablet with USB cable or Bluetooth 4.2

Devices (Wearable Device)

The following are possible wearable device to collect the Steps count, sleep hours, and physical activity calories. That maybe asked to be connected. The product will be bought by Accenture for the PoC. Please suggest if any one is feasible on your proposal.

Model	Samsung GalaxyS4 Classic (link)	Fitbit Charge 6 (link)	Amazfit Active (link)	J-Style JC 2301B Smart Health Ring (link)	Smartwatch developed by CST
Image					
Quality	<ul style="list-style-type: none"> ✓ Physical activities • Steps count • Sport and Fitness (group challenge) ✓ Sleep Score ✓ Heart Rate ✓ Others: • Blood oxygen(SpO2) • Blood Pressure • ECG • Stress Management • Food (calories), Water consumption • Battery life:10-20 days 	<ul style="list-style-type: none"> ✓ Physical activities • Steps count • Sport and Fitness ✓ Sleep Score ✓ Heart Rate ✓ Others: • Blood Oxygen(SpO2) • Stress management • Skin temperature ✓ Battery life: 7-10 days 	<ul style="list-style-type: none"> ✓ Physical activities • Steps count • Sport and Fitness ✓ Sleep Score ✓ Heart Rate ✓ Others: • Blood Oxygen(SpO2) • Stress Monitoring ✓ Battery life: 10-30 days. Continuous GPS Usage 16 hours 	<ul style="list-style-type: none"> ✓ Physical activities • Steps count • All day activities ✓ Sleep Score ✓ Heart Rate ✓ Others: • Oxygen (SpO2). • Calories • Non-invasive Blood glucose • Skin Temperature • HRV Stress • Battery life: 7-10 days 	<ul style="list-style-type: none"> ✓ Physical activities • Steps count ✓ Sleep Pattern detection ✓ Heart Rate ✓ Others: • Multiple watch faces. • Calorie count. Battery life: 24 hours
Price	Original price: 458\$ Discounted Price: 121\$ (Feb 2024)	Original Price: 159\$	Original price: 241\$ Discounted Price: 157\$ (Feb 2024)	Original price: \$185	-
Data Integration	<ul style="list-style-type: none"> • Android SDK support. Health Connect API. Or API works on both Wear OS and Android OS 	<ul style="list-style-type: none"> • Android SDK support. Health Connect API. Or API works on both Wear OS and Android OS 	<ul style="list-style-type: none"> • Android SDK support. Health Connect API. Or API works on both Wear OS and Android OS 	<ul style="list-style-type: none"> • JC Ring App – Cloud-based Service - API work for OS and Android but only for original app 	<ul style="list-style-type: none"> • Data Transfer to App for logging and analysis