

BNDA(Bangladesh National Digital Architecture)

For more Details: <http://bnda.gov.bd/>

National Digital Architecture

The Bangladesh Computer Council (BCC) is one of the apex bodies of the GoB that has been instrumental in carving the path for the development of e-Governance in Bangladesh over the last two decades. At present, the BCC is in the process of determining the potential success of e-Governance in Bangladesh through the establishment of the 'National Digital Architecture and Interoperability Framework' initiative. This initiative shall be the foundation for the successful ICT adoption in the Government.

The transformational potential of technology, especially with reference to the delivery of Government services can only be realized when the efforts towards its adoption, management and subsequent implementation are synchronized among different arms of the Government. A robust enterprise architecture and interoperability framework shall result in the realization of the vision as outlined in 'Digital Bangladesh' vision with ICT and emerging technologies.



National Digital Architecture Components

National Digital Architecture

Establishment of the contours and the broad structure for whole-of-government EA framework

eGovernment Interoperability Framework

Design, development and implementation of interoperability framework across the GoB

Mobile Service Delivery Platform

Preparation of the architecture and standards of MSDP

National e-Service Bus

Development of a middleware application/platform for e-service integration

Capacity Building and Change Management

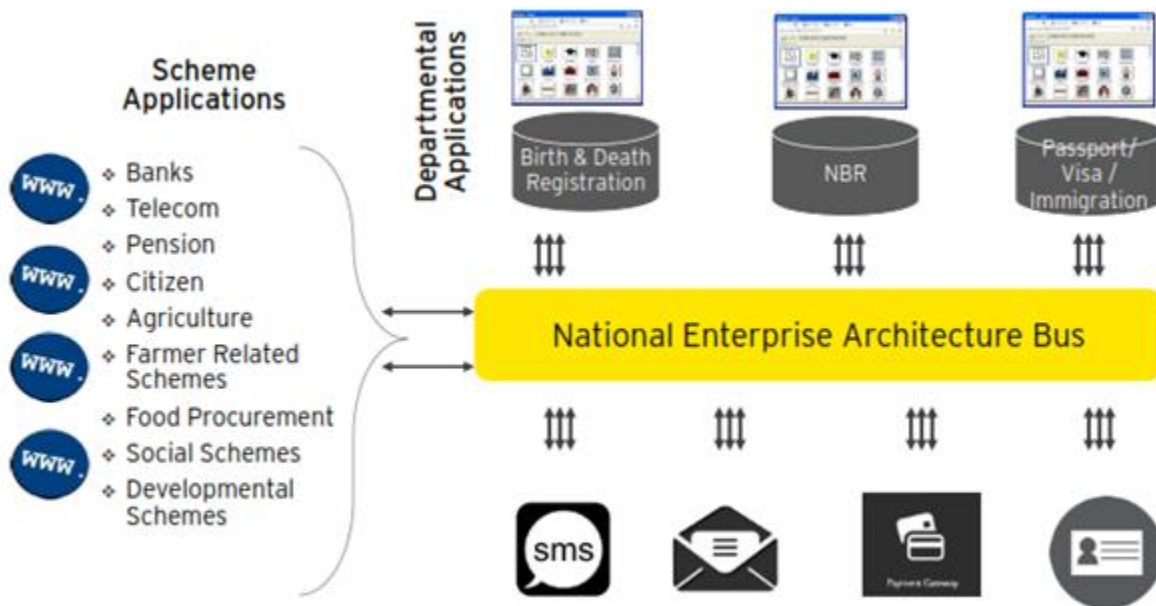
Delineation of broad guidelines for establishing enabling smart e-governance organization for capacity development within government

E-Services:

E-Services are a critical component for establishing e-Government. All government entities under the Digital Bangladesh vision are currently engaged in provided electronic services or e-services to the citizens and business. E-Services are the final outcome from BNDA (Bangladesh National Digital Architecture). The BNDA framework, principles, standards, guidelines, software, tools and infrastructure would be used to develop better, improved, accessible and reusable e-Services by government organizations. E-Services would include government-to-government (G2G) or government-to-citizen (G2C) or government-to-business (G2B) or government-to-employee (G2E).

The Government under BNDA has introduced National Digital Architecture (NDA) Bus (known as National e-Service Bus) under Bangladesh National Digital Architecture (BNDA) framework to ensure interoperability, availability and reusability of government online services, information and data. National e-Service Bus is software driven middleware platform which is being developed keeping a provision to enable online services, sharing of information and data of ministries, departments and directorates to ensure interoperability and end user's easy access to it.

E-service Bus and Different Govt applications/services



NDA bus is a critical component in the interoperability architecture domain and key to ensuring seamless exchange of information and services for Government of Bangladesh. Considering the scope and span of NDA bus, due procedures and guidelines have been established around the governance to ensure robust and standardized controls are being followed by the NDA working team. NDA bus is based on service oriented architecture paradigm. The service definition and deployment lifecycle has been covered and due procedures including the roles and responsibilities defined for the benefit of the SOA team working on NDA bus. As a part of BNDA phase 1 conceptualization, couple of e-services have been developed on the BNDA components (NDA bus, service delivery platform and national data center cloud). The individual software components comprising of these e-services would be made available to other government organizations to enable faster software development time and reduce development costs. E-services that are already integrated with e-service bus:

- e-Pension for Directorate of Primary and Mass Education
- Food procurement system for DG Food office
- Online Recruitment System for ICT Division
- NID verification service
- Govt. Employee verification service
- Alapon Messenger App
- Geospatial Data service

More applications and services are in pipeline to be integrated with national e-service bus shortly. Each of these three e-Services share common platforms and technologies:

- BNDA design and standards have been used to build the foundation architecture for the three E-services
- All of the e-services are registered on the NDA Bus
- The three e-Services uses common technology and programming languages
- They are using the same business automation and workflow engine
- Common reporting engine has been used to meet the backend reporting requirements
- They are hosted on shared cloud infrastructure (BCC national data center)

For example, citizen authentication is a foundation building block used by all these three e-Services. A citizen is required to be authenticated against NID database for job application, a farmer needs to be authenticated to be eligible for selling grains to government and teachers are required to establish their identity through national identity. Hence all the three e-services require authentication of a citizen against the NID database.