

# RPA Prototype for Enhancing Machine-Readability of Procurement Documents

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# AGENDA

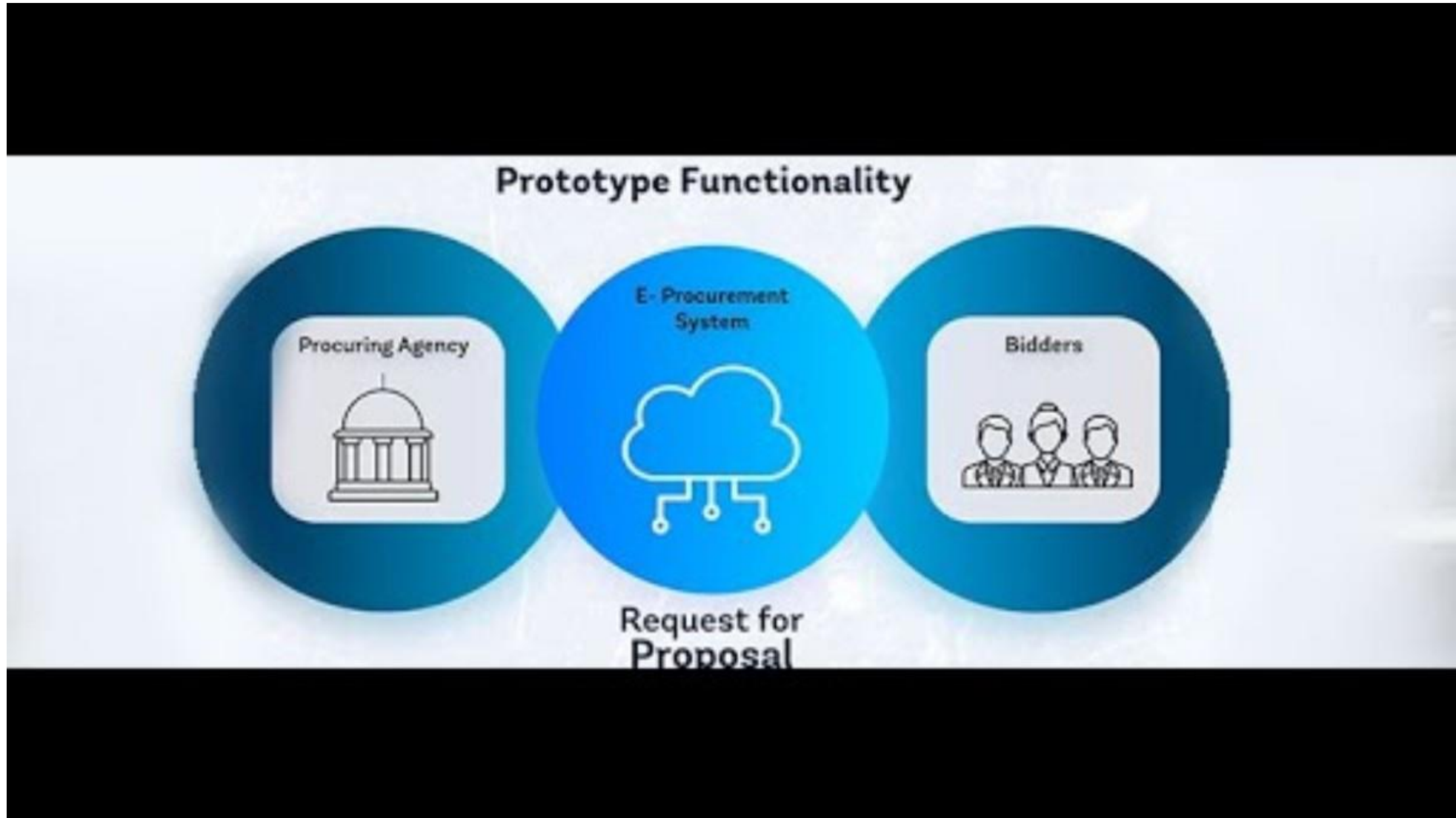
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- 1. Introductory Video**
- 2. Opportunity Statement**
- 3. Proposed Solution & Boundary Conditions**
- 4. Demo Video**
- 5. Testing Results, Limitations and Future Course**

# 01. Introductory Video



# INTRODUCTORY VIDEO



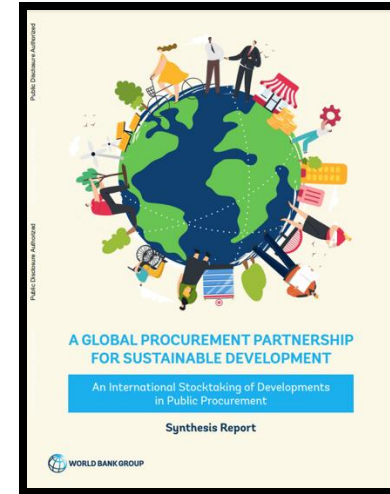
# 02. Opportunity Statement



# OPPORTUNITY STATEMENT



2021 World Bank Study titled **“Disruptive-Technologies-in-Public-Procurement”** has analyzed various disruptive technologies and their growing adoption in public procurement function. **Availability of good quality data is prerequisite for successful adoption of some of these technologies** e.g. AI, Big Data and Data Analytics.



2022 published World Bank report titled **“An International Stocktaking of Developments in Public Procurement”**, it is argued, *“The true value of e-GP is not simply in managing the procurement process, but also in the data collected. Taking advantage of data for monitoring transactions and measuring results can help governments better understand procurement and develop new initiatives to improve their economic and GRID goals”*. This report has also highlighted the lack of data as a challenge while mentioning, *“In many procurement frameworks, the underlying dimensions of these policies are difficult to assess, with a lack of data being the most likely culprit.”*



2023 OECD Report tile **“Public Procurement Performance”** notes,

*“In some e-procurement systems, available data consists of uploaded PDF scans of records, which are not easily machine-readable. As such, **data usability and access is compromised for further analysis and processing.**”*

# OPPORTUNITY & ITS IMPORTANCE

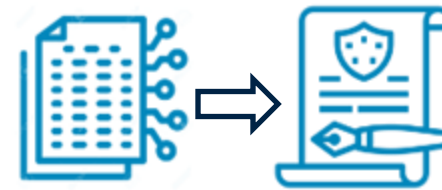
## Opportunity

Limited availability of Bid Level Information in Machine-Readable Format



Availability of “Quality” Data at bid level would be a game changer

## Why it is Important ?



Data-Driven Policy Making



Data Analytics



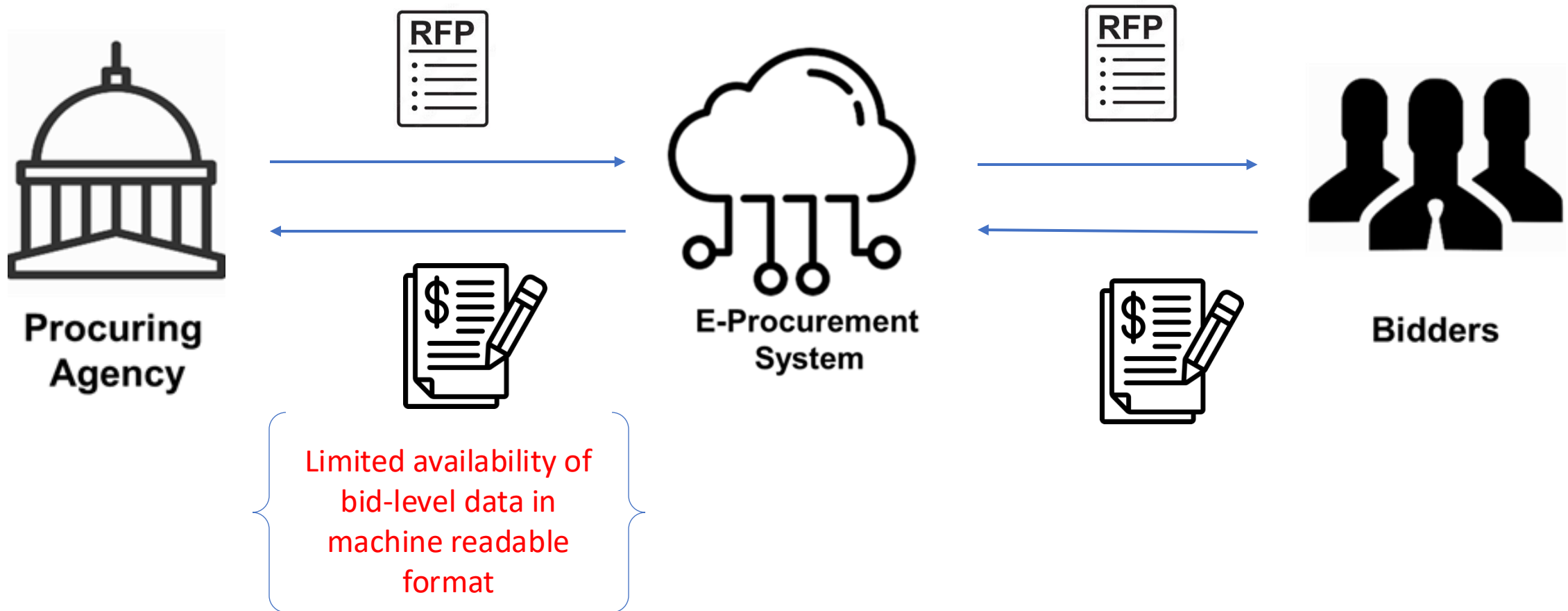
Disruptive Technologies like AI/ML, Big Data etc.

# 03. Proposed Solution & Boundary Conditions





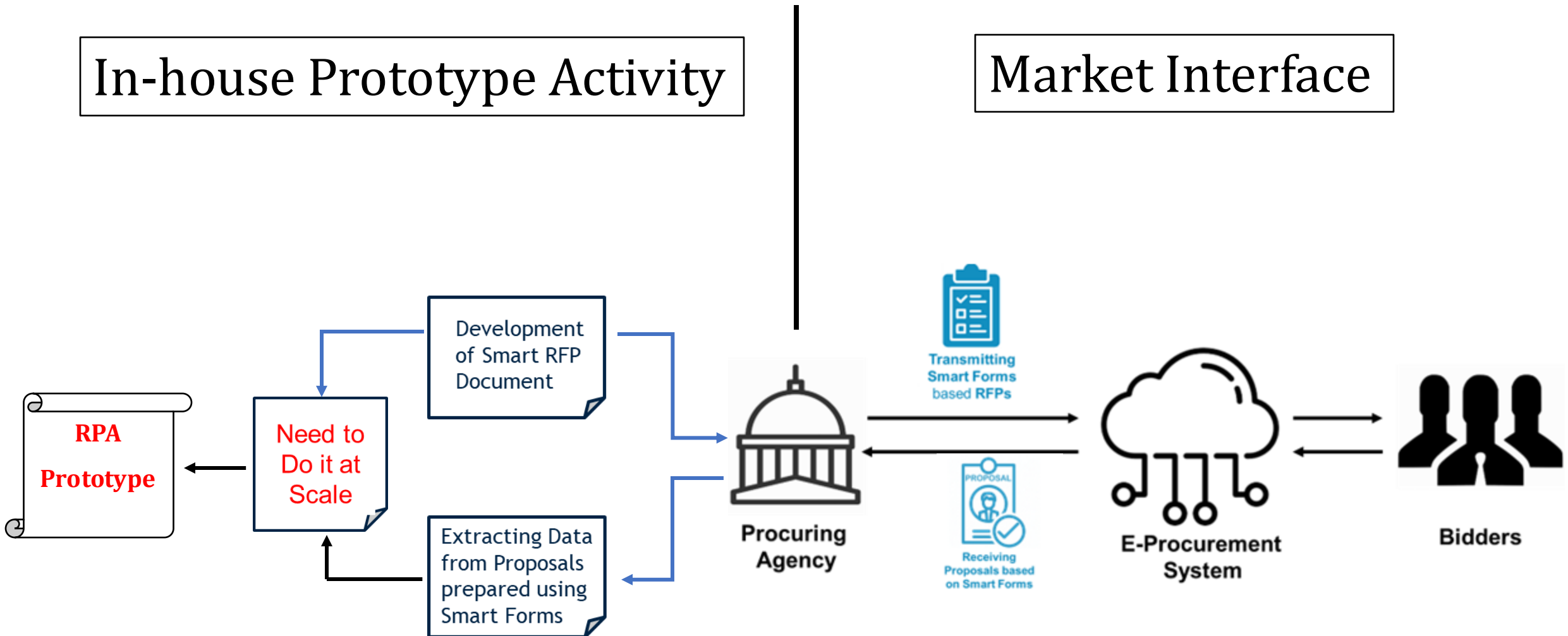
# Current – “As IS” State



# Solution & Technology – “ TO BE” STATE

In-house Prototype Activity

Market Interface



# WHY RPA?



RPA Bot's ability to simultaneously operate multiple computer applications

Doing Onerous Tasks at Scale

Technology Maturity is HIGH

Bots can be configured by non-developers using a graphical user interface

# BOUNDARY CONDITIONS

## Switching Cost

- Technology tools should be either open source freely available or affordable

## Switching Effort

- Prototype should be based on or compatible with popular word processing applications

## No additional role for bidders

- Prototype activities to be managed completely in-house by Purchaser

## Data Privacy

- No storing of information on third party servers/online before bid submission deadline, and
- Data Integrity should not be compromised

# PROTOTYPE FUNCTIONALITIES

## Part- 1 (Creation of Smart RFP)

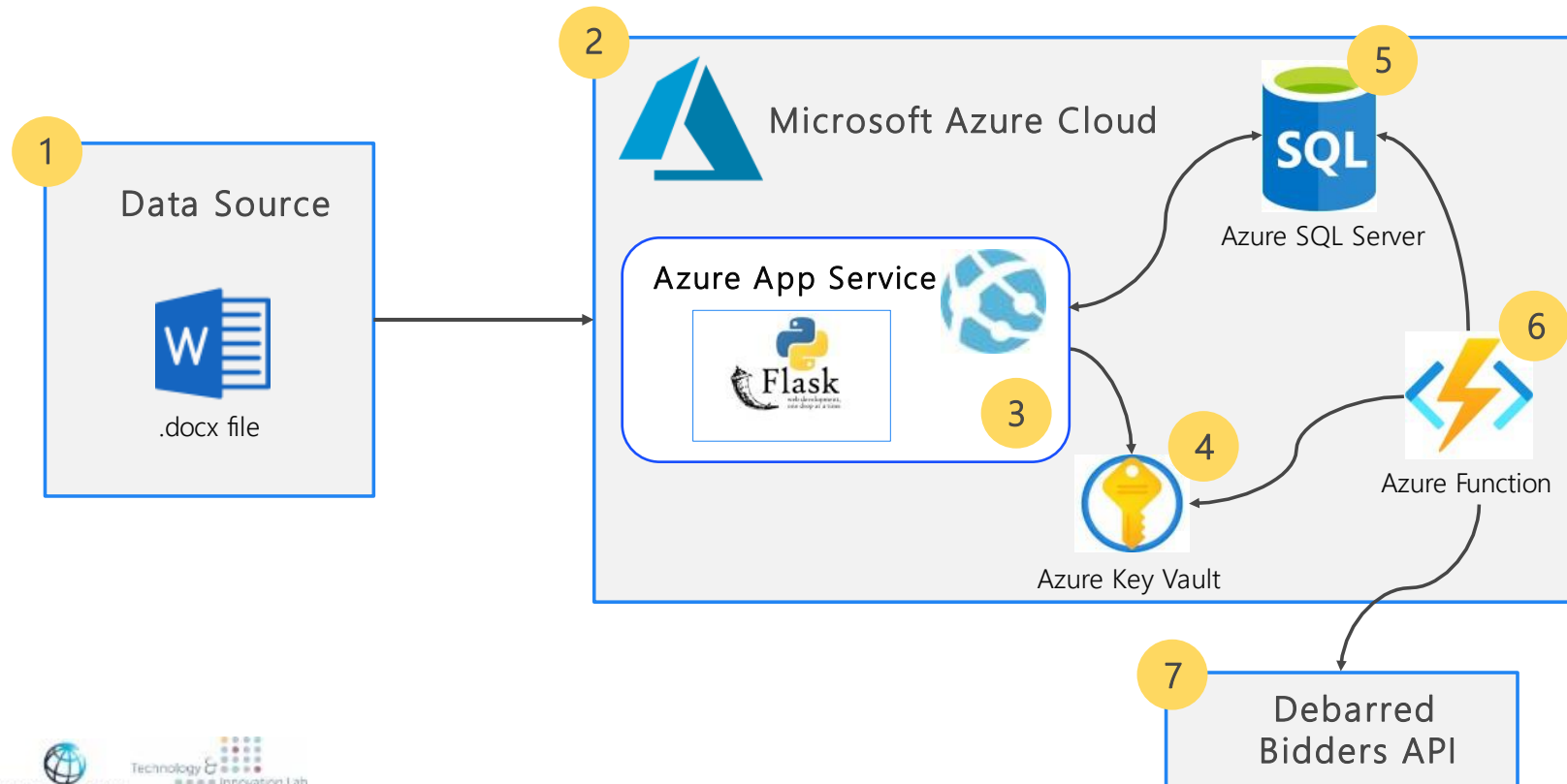
- Auto-filling of RFP template using Excel inputs
- Smart Fields in Proposal Forms

## Part-2 (Extraction of Data from Proposals)

- Extraction of Data from Proposal Forms
- Development of Comparative tables
- Auto-compliance check

# PROTOTYPE - TECHNICAL ARCHITECTURE

## Technical Architecture



# TEST CASE FOR PROTOTYPE

## Information of High Importance

### Bidder Information

### Pricing Information

### Compliance Check Information

- Debarred firm check
- Debarred Individual check
- Computation Errors
- Error across forms

## Target document for Prototype

### WB Standard Procurement Document for Consulting Services

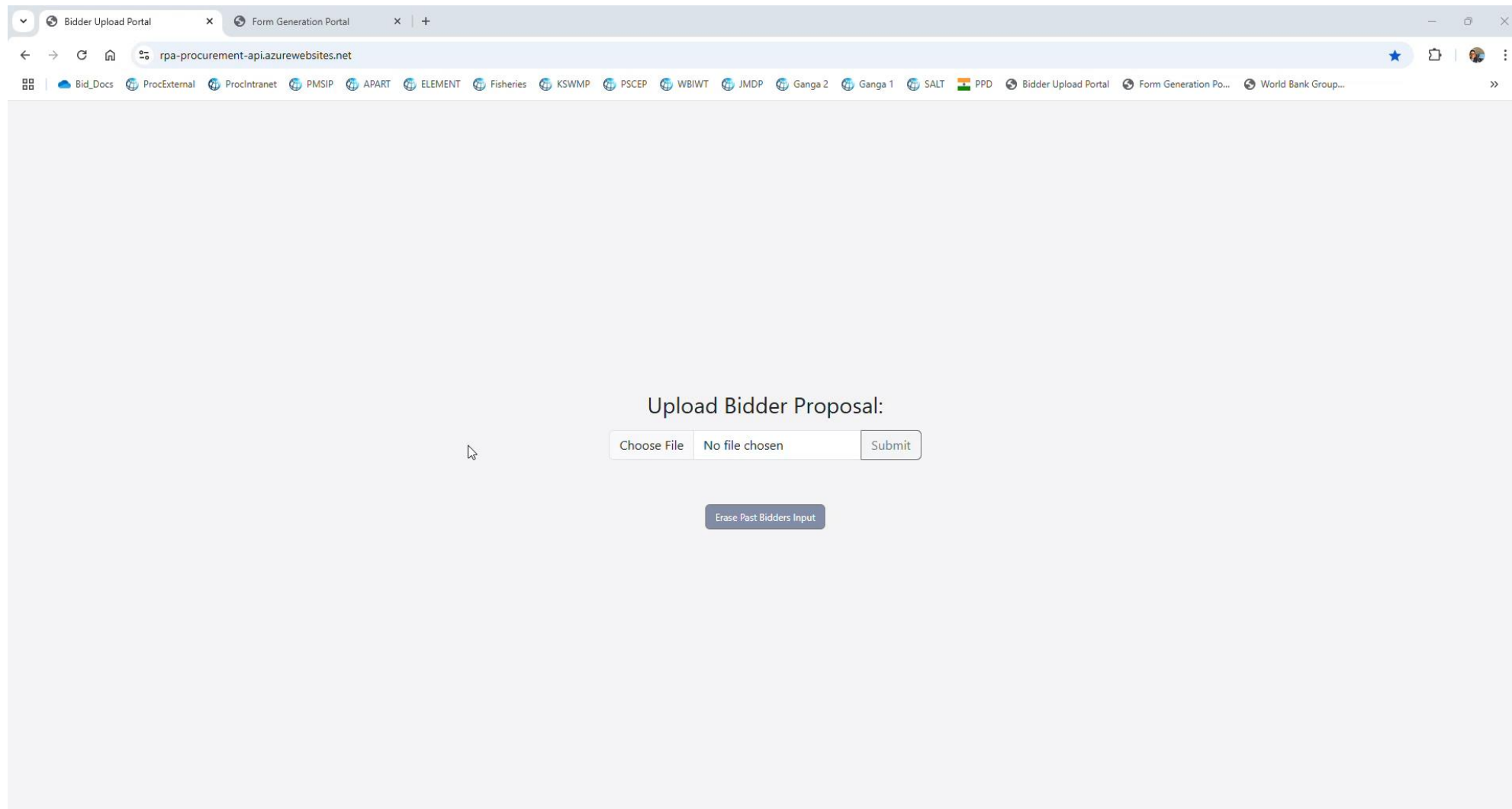
- One of the most frequently used SPD
- Variety of TECH and FIN forms
- Fin-3 offers opportunity to test dynamic rows across different proposals
- FIN-4 offers opportunity to test variability in row headers
- FIN forms share information among them
- TECH-6 provides an opportunity to test dynamic columns across different proposals
- Captures the information of individuals, in addition to firms, for purpose of screening
- Prototype is limited to TECH-01, 06, FIN-01, 02, 03, 04

# 04. VIDEO DEMO





# VIDEO DEMO

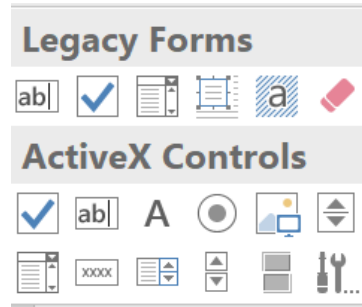


# 05. LIMITATIONS AND FUTURE COURSE



# CONSTRAINTS

Finite Types of Building Blocks



Tool is showing promising results for the target document which has high degree of standardization



Tools struggles to produce effective results when configuration of building blocks changes significantly i. e. document has low degree of standardization.

AI/ML can presumably produce effective results in such situations. A potential case of future study

# NEXT STEPS

## Real World Pilot

- RFQ:
- Low Value/Risk, High Volume Environment
- Scalable & Expandable

## Integration with eGP system

- Customized Integration with eGP system can increase the benefits many fold

## Integration with AI/ML

- Eliminate the identified limitations
- Ability to manage complex documents

## Integration with OCR Tools

- To further enhance machine-readability by covering scanned documents

## Material Code tagging

- For efficient data segregation , automation of material code tagging process



Thank You !