



PRESENTATION ON AFIS & PERMANENT VOTER CARD PROJECTS

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Chairman, INEC

Tuesday, 19th March 2013

DEPLOYMENT OF TECHNOLOGIES FOR THE ELECTORAL PROCESS

- Electronic Voter Register
- Automated Fingerprint Identification System (AFIS)
- Permanent Voter Card – Smart Cards
- Smart Card Readers for Voter Authentication (Yet to be executed)



FEDERAL REPUBLIC OF NIGERIA

All Registrants

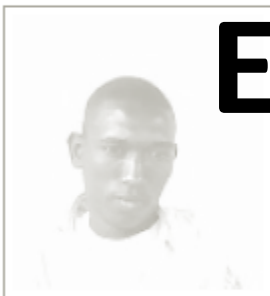
State: **37 - FCT**
Local Govt. Area: **01 - ABAJI**
Registration Area: **01 - ABAJI CENTRAL**
Polling Unit: **001 - UNG. MAIKANO/KOFAR MAI
UNGUWA**

Time Printed: **Wed Dec 19 14:45:16 2017**
Total Records: **1487**

ELECTRONIC VOTER REGISTER

177

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VIN 90F5 AFC7 AA29 5359 515
NAME Adamu Yusufu
OCCUPATION Farming/Fishing
GENDER Male AGE 25

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R VIN 90F5 AFC7 AA29 5359 515
NAME Adamu Yusufu
OCCUPATION Farming/Fishing
GENDER Male AGE 25

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R VIN 90F5 AFC7 AA29 5361 687
NAME Adamu, Salamatu
OCCUPATION House Wife
GENDER Female AGE 48

186

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R VIN 90F5 AFC7 AA29 5361 687
NAME Adamu, Salamatu
OCCUPATION House Wife
GENDER Female AGE 48

179

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R VIN 90F5 AFC7 AA29 5363 066
NAME Adamu, Fatima
OCCUPATION House Wife
GENDER Female AGE 48

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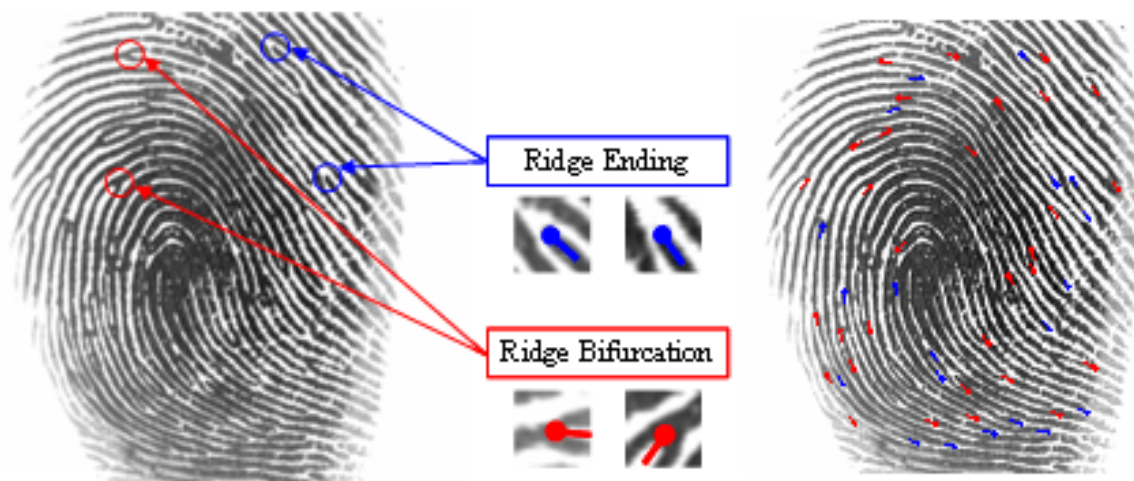


R VIN 90F5 AFC7 AA29 5363 066
NAME Adamu, Fatima
OCCUPATION House Wife
GENDER Female AGE 48

VR PROCESS

- The data collected for each registrant are:
 - Bio- Data
 - Facial Image
 - 10 finger prints (Template & Image)
 - optional fields for those that possess National ID card and telephone numbers
- The size of data captured is approx. 1MB/voter
- Registered over 73M Nigerians
- Each registrant has a unique identifier- Voter Identification Number (VIN)

AFIS Technology



AFIS PROCESS

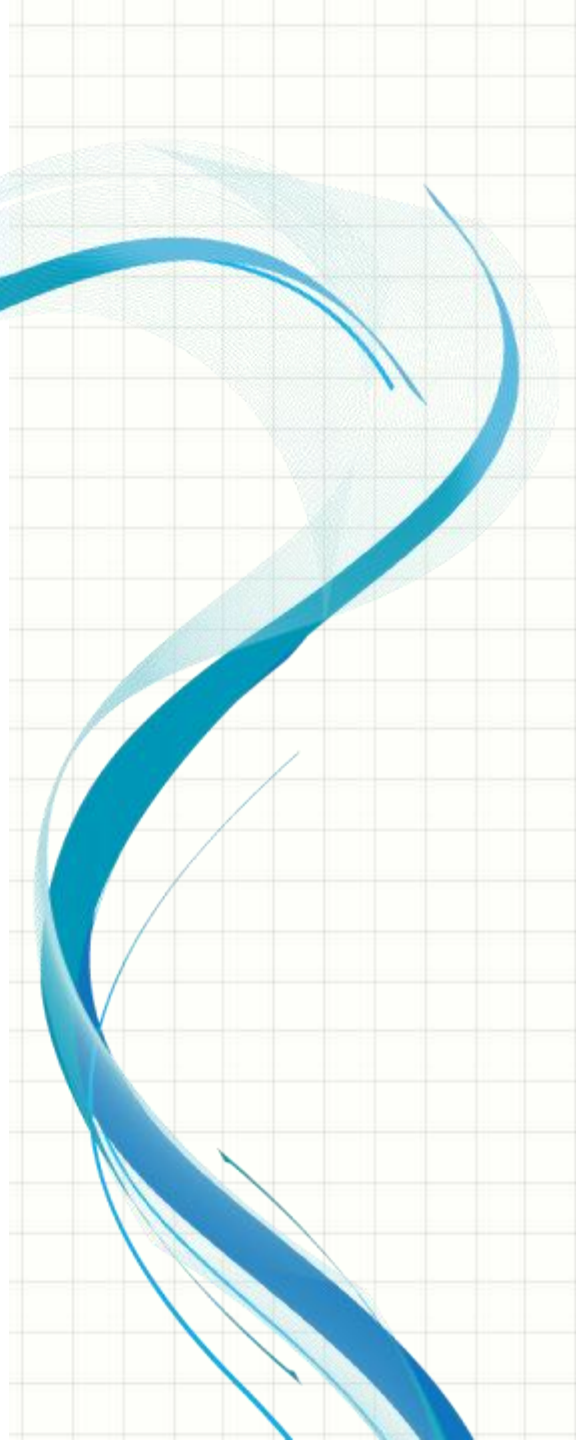
- AFIS software allows the Commission execute a de-duplication process on its database of registered voters;
 - This de-duplication process is expected to identify multiple registrations and appropriately flag such.
 - It must also minimize the number of individuals wrongly flagged as duplicates
- The de-duplication process eliminates confirmed multiple registrations;

CURRENT STATUS

- Standardized Biometric solution developed by National Institute of Standards and Technology (NIST) for the Federal Bureau of Investigation (FBI);
- Implemented a clustering solution in the National Data Center – ClusterSix, of fifty-five (55) dedicated machines constantly running the AFIS process over a network;
- Exercise has revealed between 6% and 20% of duplicates in each State, about 23 States have been run successfully;
- Process to complete within the second quarter of the year.



CRITERIA FOR DETECTING DUPLICATES

- If the threshold of similarity score between two (2) or more registrants is above 200;
- EAM – Equivalence Attribute Matching
 - Detection of Duplicate based on duplicate last name + first name + middle name + date of birth + polling unit + gender + special status
- If the threshold of similarity score is between 170 and 200 implies suspected duplicate (but the registrants are not removed from the register because the certainty of being duplicates is not great).

A decorative graphic on the left side of the slide, consisting of several overlapping, flowing blue lines that curve upwards and then downwards, creating a sense of motion. The lines are in various shades of blue, from light to dark, and have a soft, ethereal quality.

Sample AFIS reports



AFIS Results

		
ID	90F5AFE395296040140	90F5B1A2E4295790156
ASSET TAG		
POLLING UNIT ID	74513	74514
OPERATOR CODE	138192	138192
VIN	90F5AFE395296040140	90F5B1A2E4295790156
DELIMITATION	22/19/10/002	22/19/10/003
IDENTIFIER	89fa4217e27488e9aa28ee7ee0de8130	85b0b48475304e51dc402adb6a3f7c45
LAST NAME	Ugdede	Sule
FIRST NAME	Glory	Mabe
OTHER NAMES		
DOB DAY	06	19
DOB MONTH	09	07
DOB YEAR	1987	1987
MOBILE NUMBER		
GENDER	Female	Female
HOME ADDRESS	LGEA SCHOOL OJI-AJI	Near aduku's house oji-aji
OCCUPATION	Student	Student

Sample
AFIS
report

- Same person, registered in two different Polling Units.

- Multiple registration in different Polling Units with different names

AFIS Results		
		
ID	90F5AFE395295884856	90F5B1A2E4296050576
ASSET TAG		
POLLING UNIT ID	74513	74514
OPERATOR CODE	138192	138192
VIN	90F5AFE395295884856	90F5B1A2E4296050576
DELIMITATION	22/19/10/002	22/19/10/003
IDENTIFIER	c621982323e6f6fcad43159f067af038	e1c935a732f9f63907a9c878ee8ffe2f
LAST NAME	Haruna	Salifu
FIRST NAME	Musa	Siaka
OTHER NAMES		
DOB DAY	07	15
DOB MONTH	09	01
DOB YEAR	1974	1975
MOBILE NUMBER		08063805254
GENDER	Male	Male
HOME ADDRESS	LGEA SCHOOL OJI-AJI1	Near aduku's house oji-aji
OCCUPATION	Business	Business

**Sample
AFIS
report**

TARABA STATE STATISTICS

Server Records	1,358,671
Announced Registrations	1,336,221
Announced Duplicates	41,069
No Fingerprints	91,017
Fewer than 2 Fingerprints	111,281
AFIS & EAM	81,609
AFIS & EAM with fewer than 2 Fingerprints	35,909
Final Invalid	156,981
Valid for PVC	1,201,690

% Duplicates (AFIS & EAM) - 6%

% Invalid for PVC Printing (AFIS, EAM & < 2 Fingerprints) – 11.6%

EKITI STATE STATISTICS

Server Records	766,560
Announced Registrations	764,726
Announced Duplicates	2,868
Special Registrations	49,812
No Fingerprints	37,377
Fewer than 2 Fingerprints	40,461
AFIS & EAM	78,046
AFIS & EAM with fewer than 2 Fingerprints	14,294
Final Invalid	104,213
Valid for PVC	662,347

% Duplicates (AFIS & EAM) - 10.2%

% Invalid for PVC Printing (AFIS, EAM & < 2 Fingerprints) – 13.6%

ANAMBRA STATE STATISTICS

Server Records	1,811,530
Announced Registrations	2,011,746
Announced Duplicates	33,747
Special Registrations	69,475
No Fingerprints	48,276
AFIS & EAM	115,884
Final Invalid	89,868
Valid	1,721,662

% Invalid for PVC Printing (AFIS, EAM & < 2 Fingerprints) – 5.2%

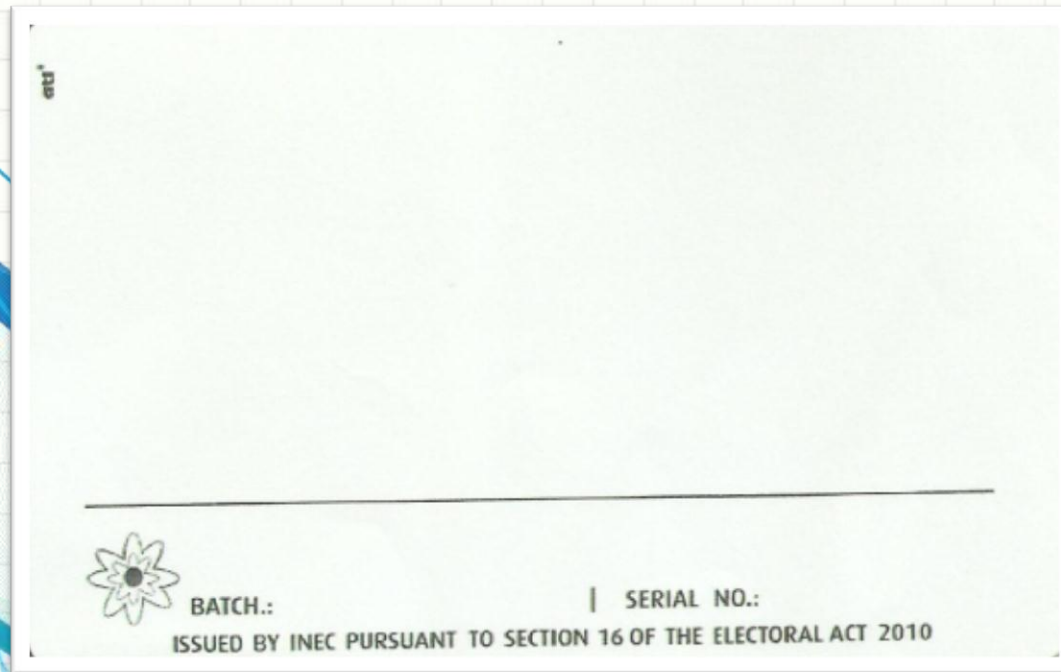
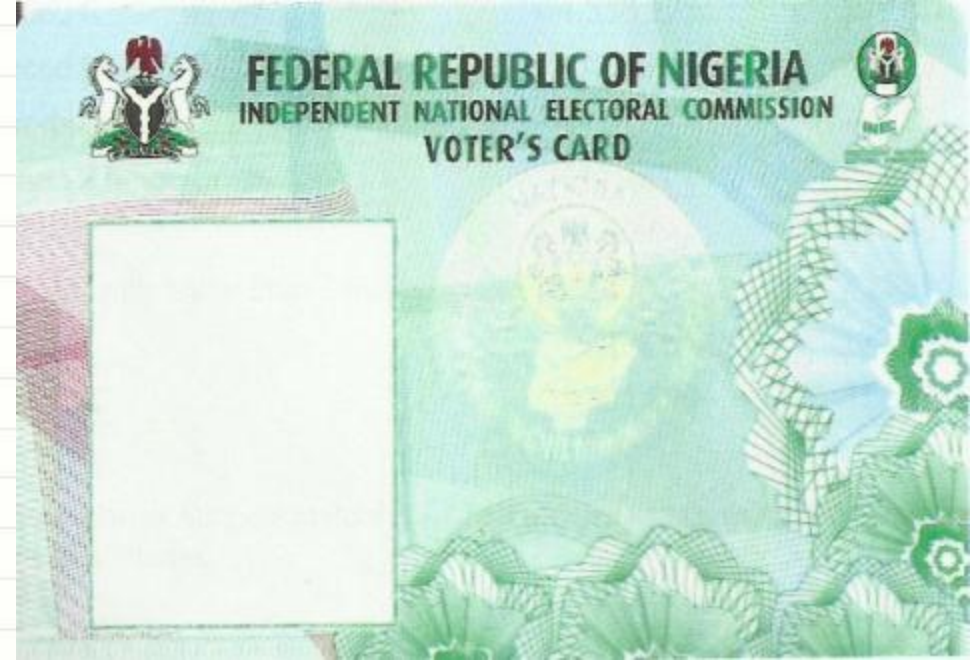
INDICATORS

- From the AFIS run, and from the data delivered for the printing of Permanent Voters Cards, between 10 – 20% of voters would not be issued cards.

ISSUES WITH AFIS RUN

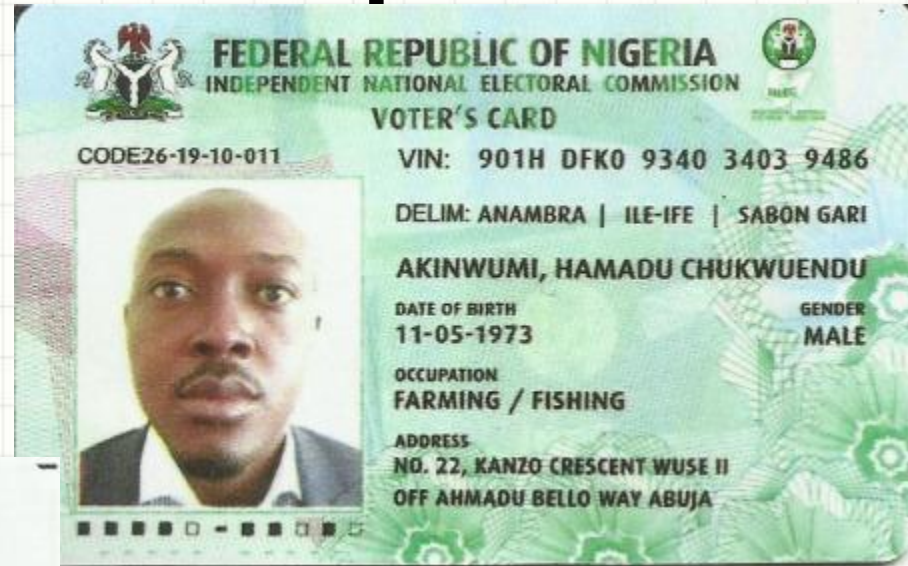
- **POWER** – being the major challenge to the successful execution of the project;
- Power surges recently pulled down the cooling systems at the National Data Centre (NDC)
- **Impact on the Project:**
 - Time
 - Cost

PERMANENT VOTER CARD (PVC)



Sample
Base Card

Personalised Card Sample



AKINWUMI: 901HDFK0 9340 3403 9486

DATE OF REG. MAY 17, 2012

BATCH.: A/37/04107/001/01 | SERIAL NO.: 00000012

ISSUED BY INEC PURSUANT TO SECTION 16 OF THE ELECTORAL ACT 2010

ABOUT THE PROJECT

- Smart card-based Voter ID;
- Stores voter's information such as bio-data, biometrics and facial image;
- The card technology protects the stored information (physical and logical security) to reduce vulnerability to counterfeiting;
- Has a read & write chip;
- Ten years durability; and
- To be used for electronic identification and authentication of voters during general elections

CHARACTERISTICS OF THE CARD

- **Card Substrate** - Polyvinyl Chloride Card (PVC) due to the limited rate of use, resistance to heat, flexing and ultra violet.
- **Visual Security on the Card**
- Custom-designed holographic over laminates, pre-printed microtext, Guilloche Graphics and barcodes
- **Technology of the card** - Smart Card – Contactless (ISO 14443A standard) with a straight memory chip. The memory chip will store voters Bio-data and the Finger print template
- **Card Orientation** - Landscape orientation because of the chip and photograph
- **Graphics and Type face** - Bright colours, Texture Background, card holder photograph and good type face
- **Print, Encode and Laminate** - High definition printing because of the embedded electronics and quality image

PVC PROJECT STATUS

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- PVC first phase has commenced, to print forty million (40,000,000) voters' cards

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- Delivery of these cards to the Commission is on-going

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- INEC has employed the services of an Independent Card Assessor to confirm that card quality meets specifications

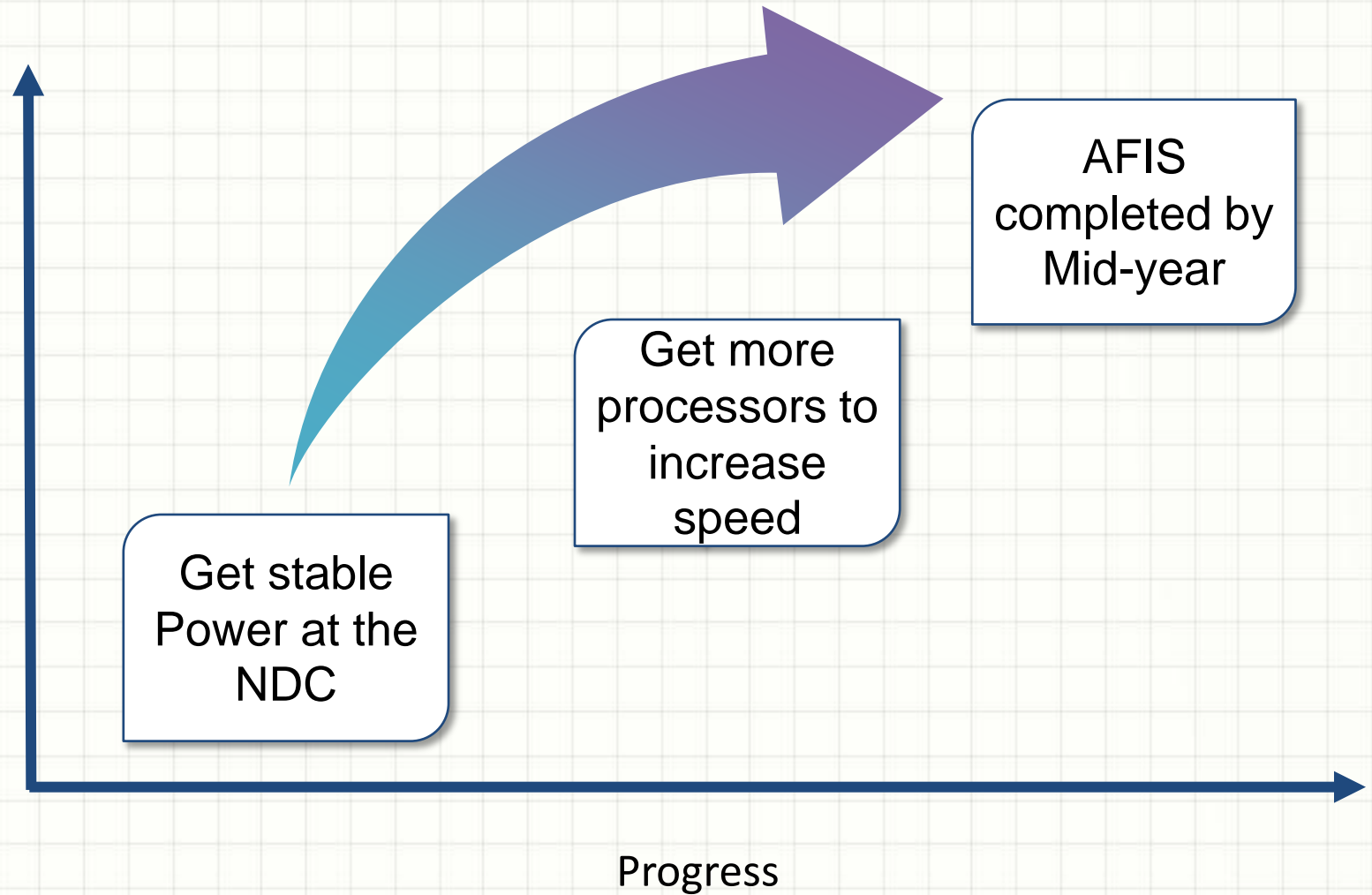
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- The memo for the award of the concluding phase of the project is before the Federal Executive Council (FEC)

ISSUES WITH PVC PROJECT

- Late commencement of the project;
- The need to complete AFIS run on the data for each State before printing the PVC;
- State AFIS takes a while – continuous process run for weeks non-stop.

ACTIONS ...





CONCLUSION?

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Thank you