

Policy And Policy Change For Underground Utility Mapping In Meeting The Challenges Of 4th Industrial Revolution And TN50



Mohd Yunus Mohd Yusoff, PhD
Department of Survey and Mapping Malaysia
mohd.yunus@jupem.gov.my

Nor Ashikin Mohamed Yusof, PhD
UTM Perdana School of Science, Technology, Innovation & Policy
ashikin.kl@utm.my

NEW GOLD

- INFORMATION AND DATA are the new gold



- Those who know how to utilize and optimize them would dominate the world economy

PRESENTATION OUTLINE

- PART 1**
- JUPEM as repository body for survey and mapping data
 - Past and current practices on data management

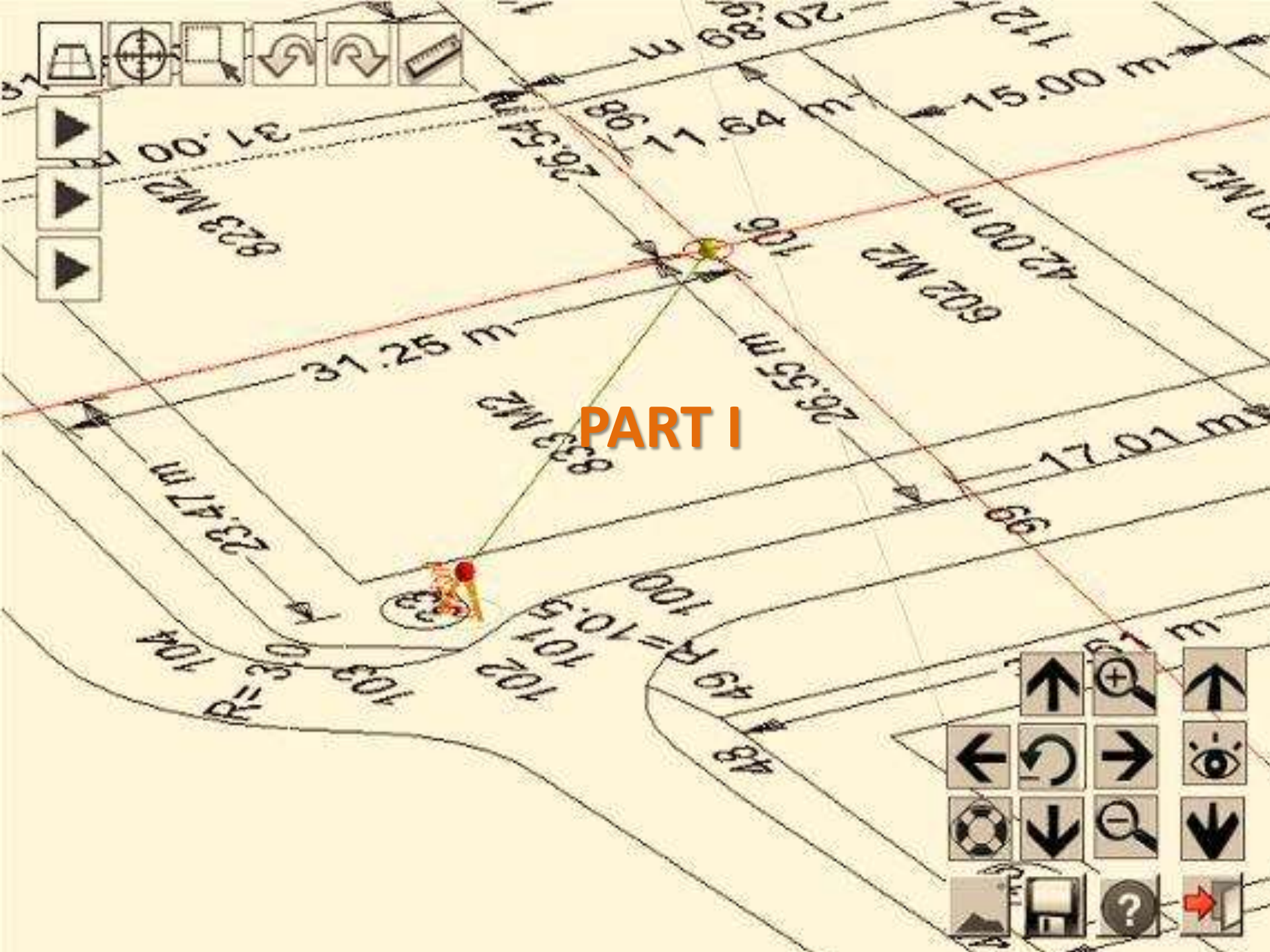
PART 2

- 4th Industrial Revolution
- TN50 an important tool for 4thIR
- Policy & policy change in the roles of JUPEM

PART 3

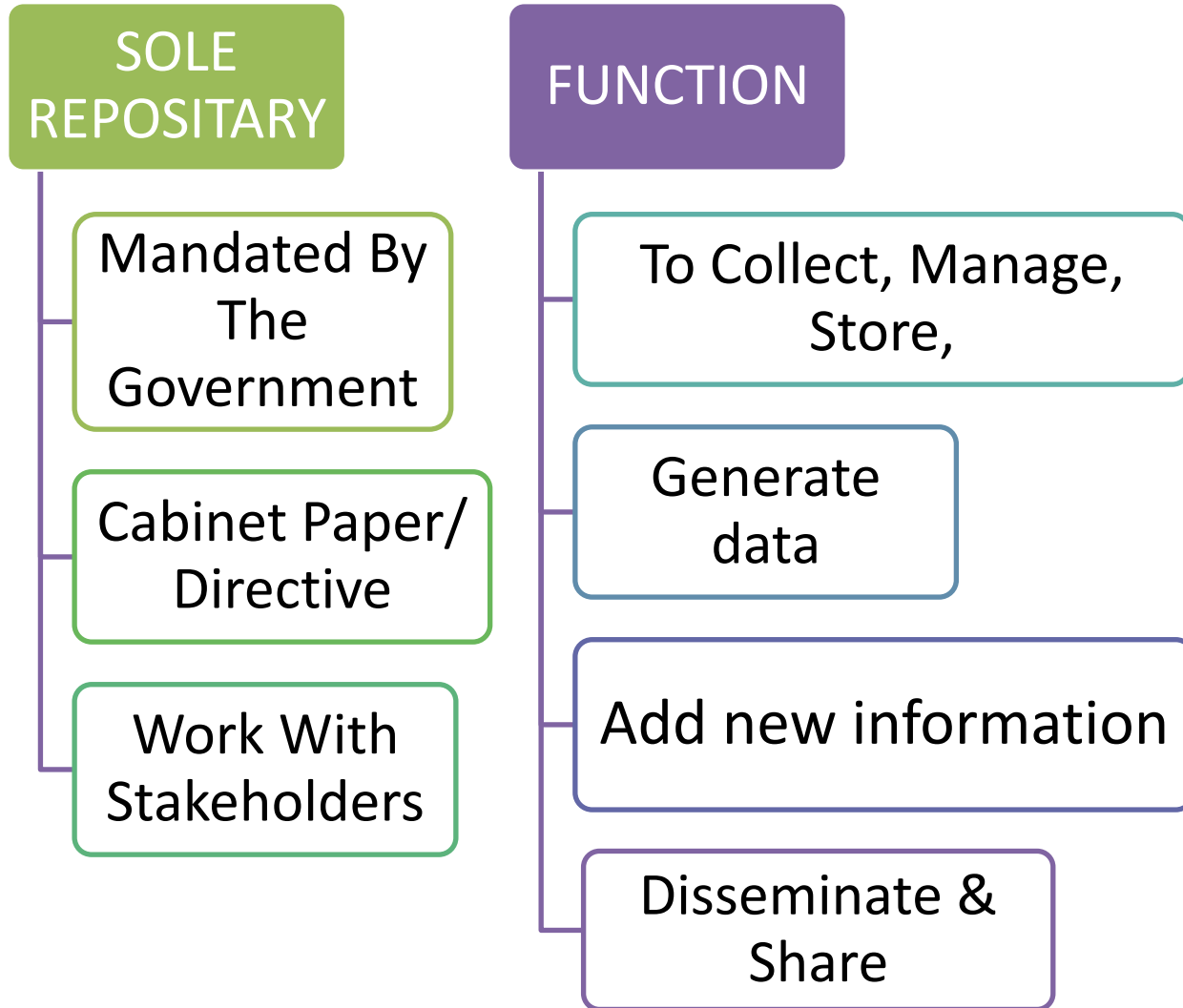
- Meeting the challenges of 4th IR & TN50
- Is JUPEM up to the mark



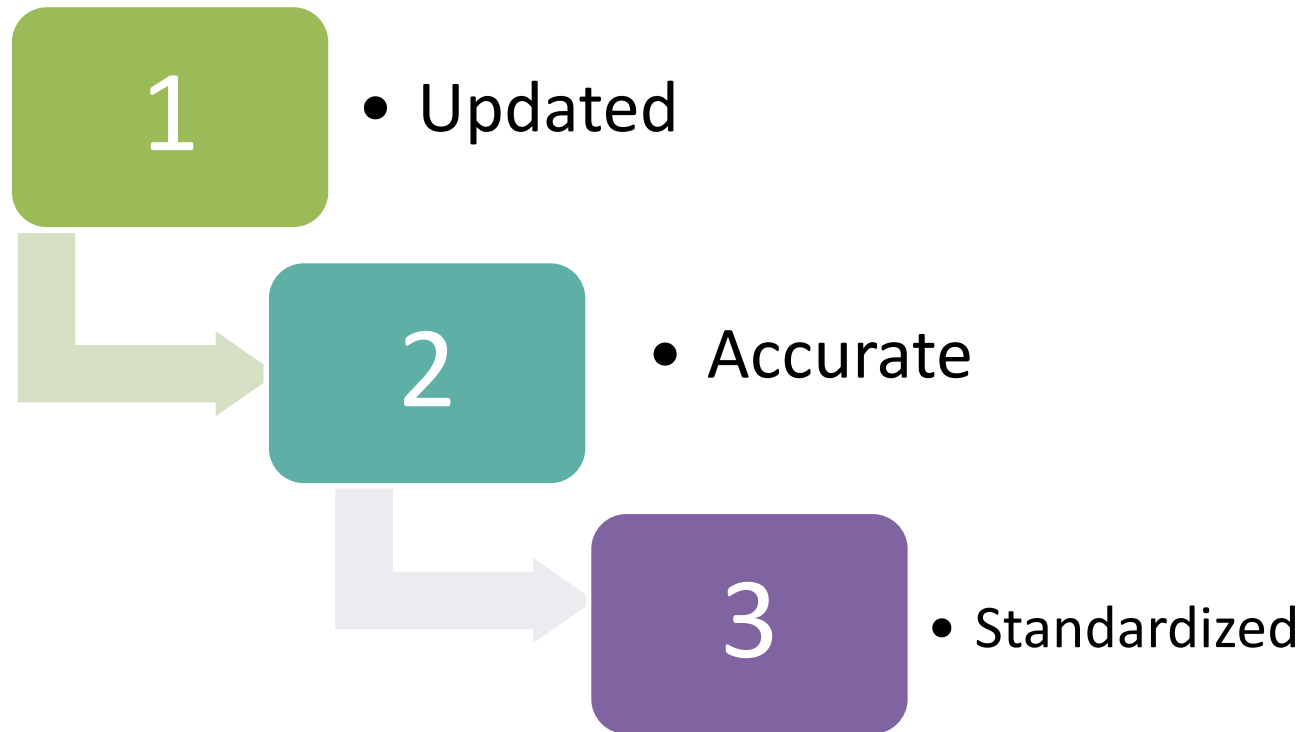


PART I

SOLE SURVEY & MAPPING DATA REPOSITORY



Assurance of Quality In Survey & Mapping Data



Reasons For Quality Data In Underground Utility Mapping



- Increase in cost of project
- Delays to project implementation
- Disruption to consumers and industries
- Avoids trespassing

Current Issues Faced By JUPEM In Regards To Data

1. No Data



2. Available data in the form of design Layout (not as-built)



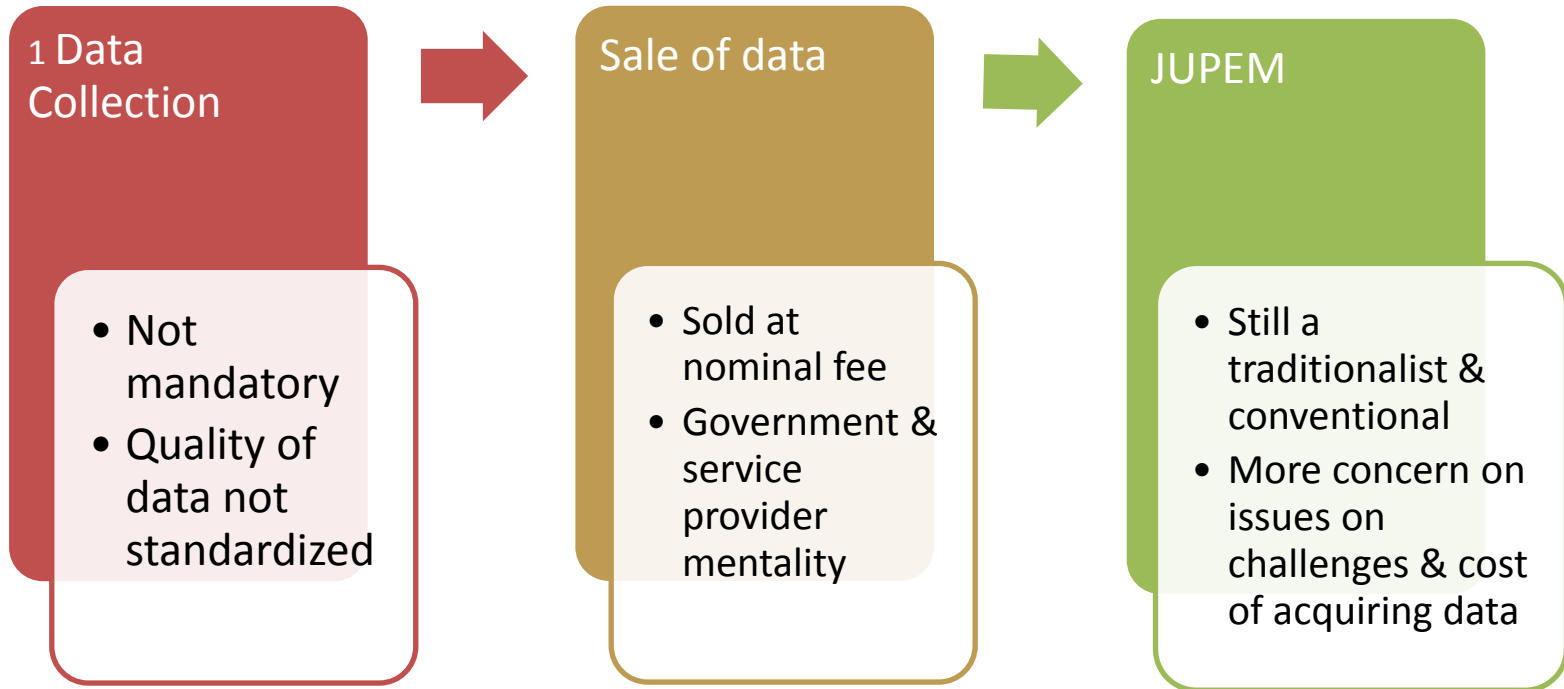
3. Data not up-to-date (existence of gaps)



4. Inaccurate data due to detection works not properly done (usually by unqualified parties)

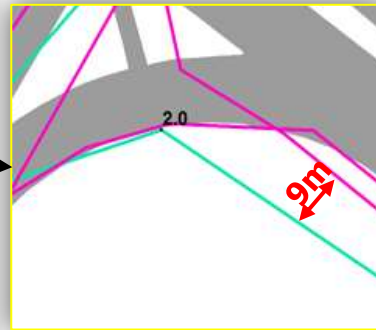
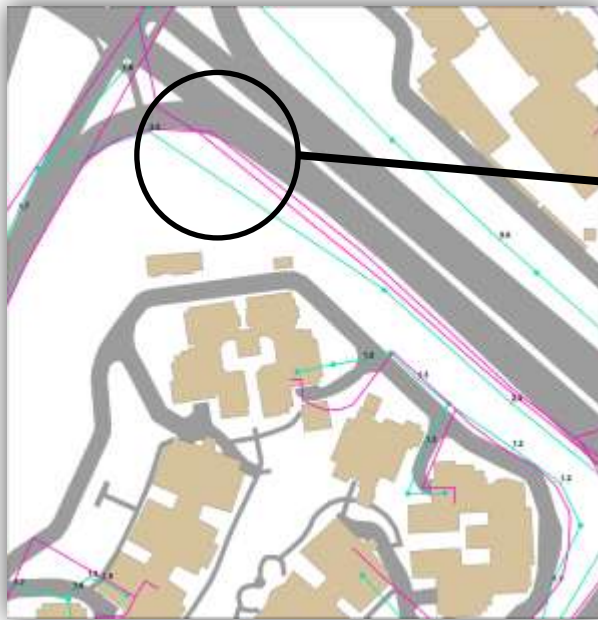


Current Practice On Data Collection & Sharing



Challenges in Data Acquisition

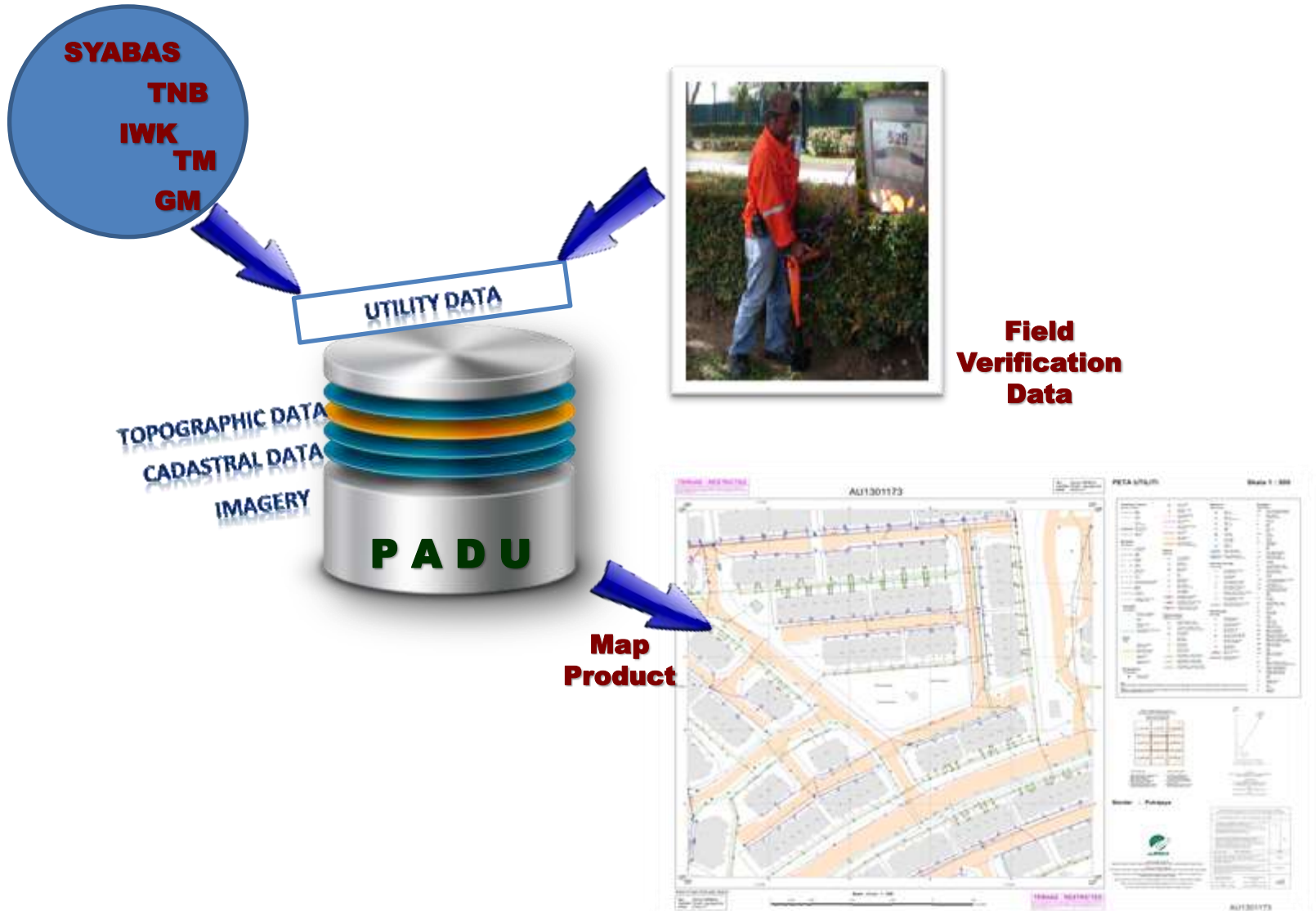
Dealing with Inaccuracy of acquired data from providers

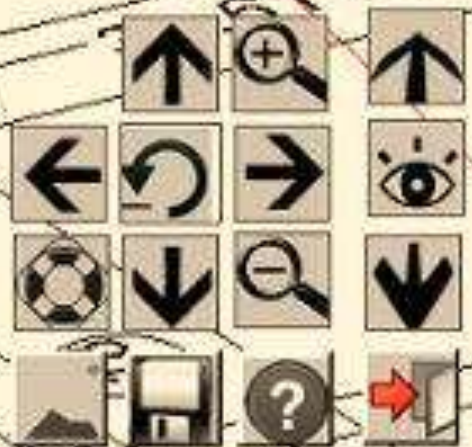
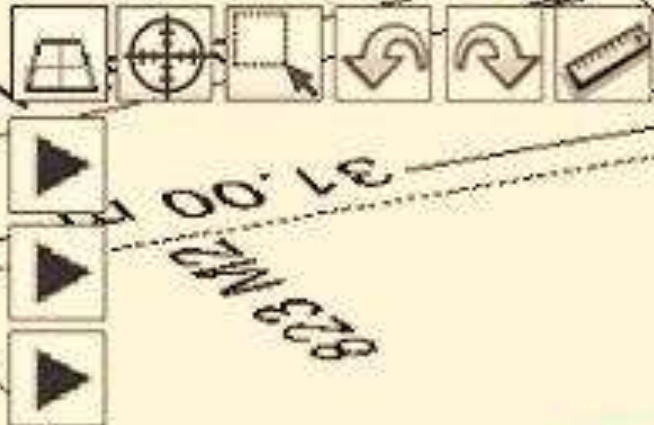
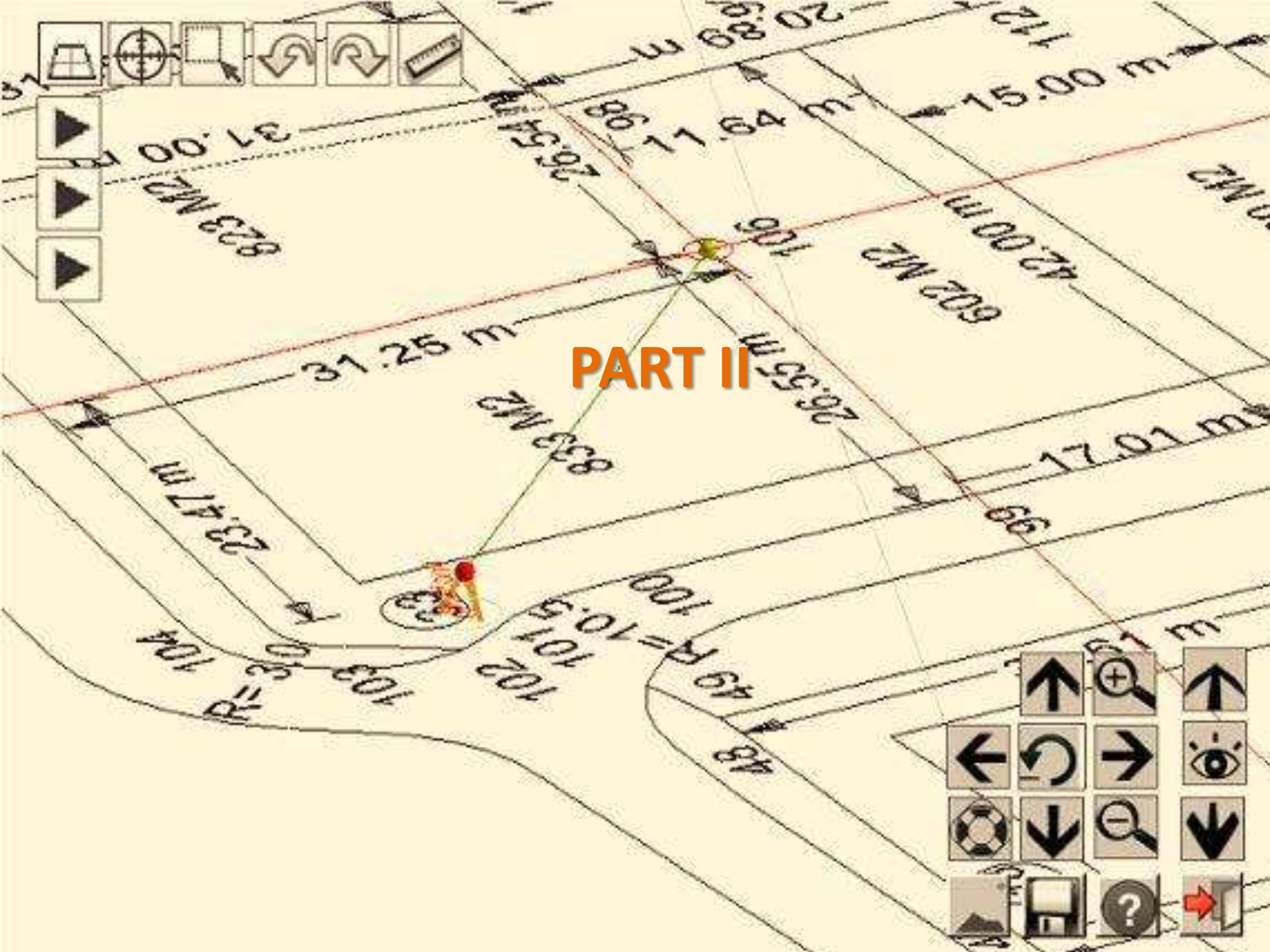


- Data from utility provider
- Data verified by JUPEM

Comparison made between utility provider's data and JUPEM verified data on a 1:500 scale topographic map indicates a positioning differences of up to 9 meters in certain places

Data Collection and Verification





4th Industrial Revolution [IR4.0]



It is no longer a
mere buzz word

It no longer happens in
3D Hollywood movies



It is happening

It is coming

It is going to take over

What is 4th Industrial Revolution

- The advent of “cyber-physical systems” involving entirely new capabilities for people and machines.
- Represents entirely new ways in which technology becomes embedded within societies and a “whole new way of work”.



- Technology, ICT, artificial intelligence & digitization would be used more aggressively



HOW TO SURVIVE AND SUCCEED IN 4TH INDUSTRIAL REVOLUTION?

what to expect

What to do

How to meet the challenges

What to expect in the 4th IR era?

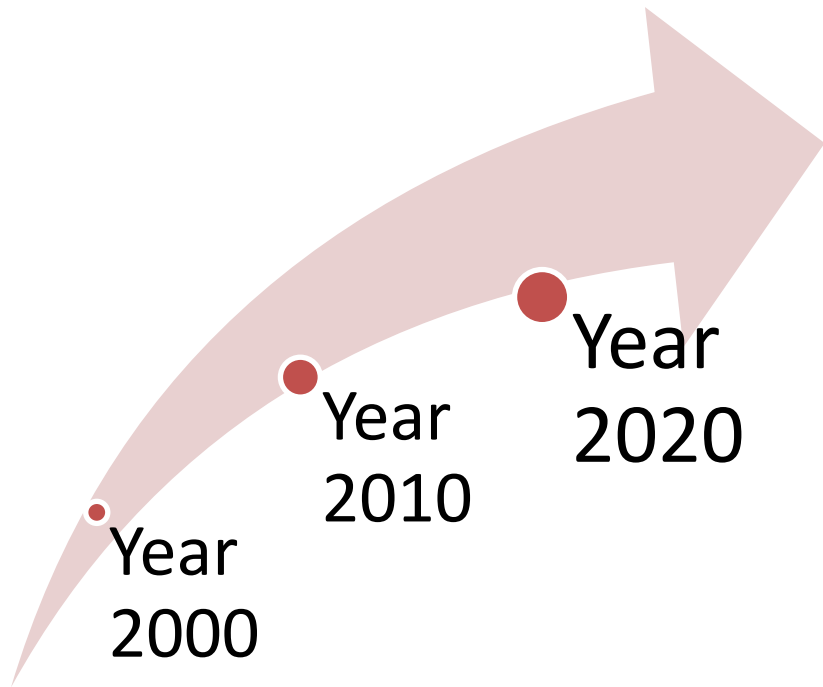
- The era of Y, Alpha & Beta generations
- Demanding markets
- Competitive individual
- Technology savvy
- Lean, multi-tasking & flexible workforce
- Less allocation of \$ budget
- Expectation to generate own income
- Disappearance of some traditional jobs/ posts



TN50

V2020

TN50 (Year 2050; 4thIR era)



Surviving the high technology and digitization future

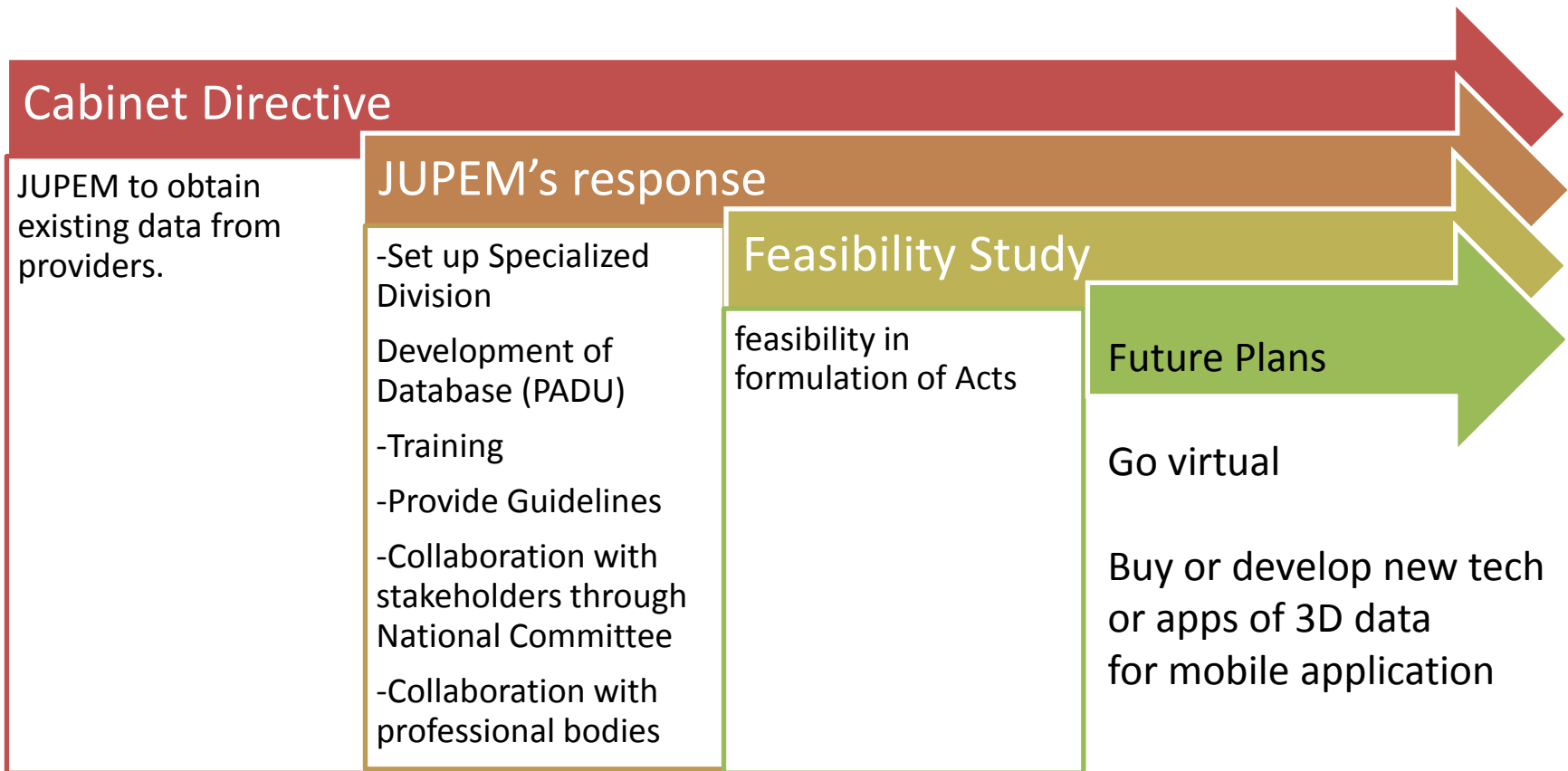


A fully developed nation

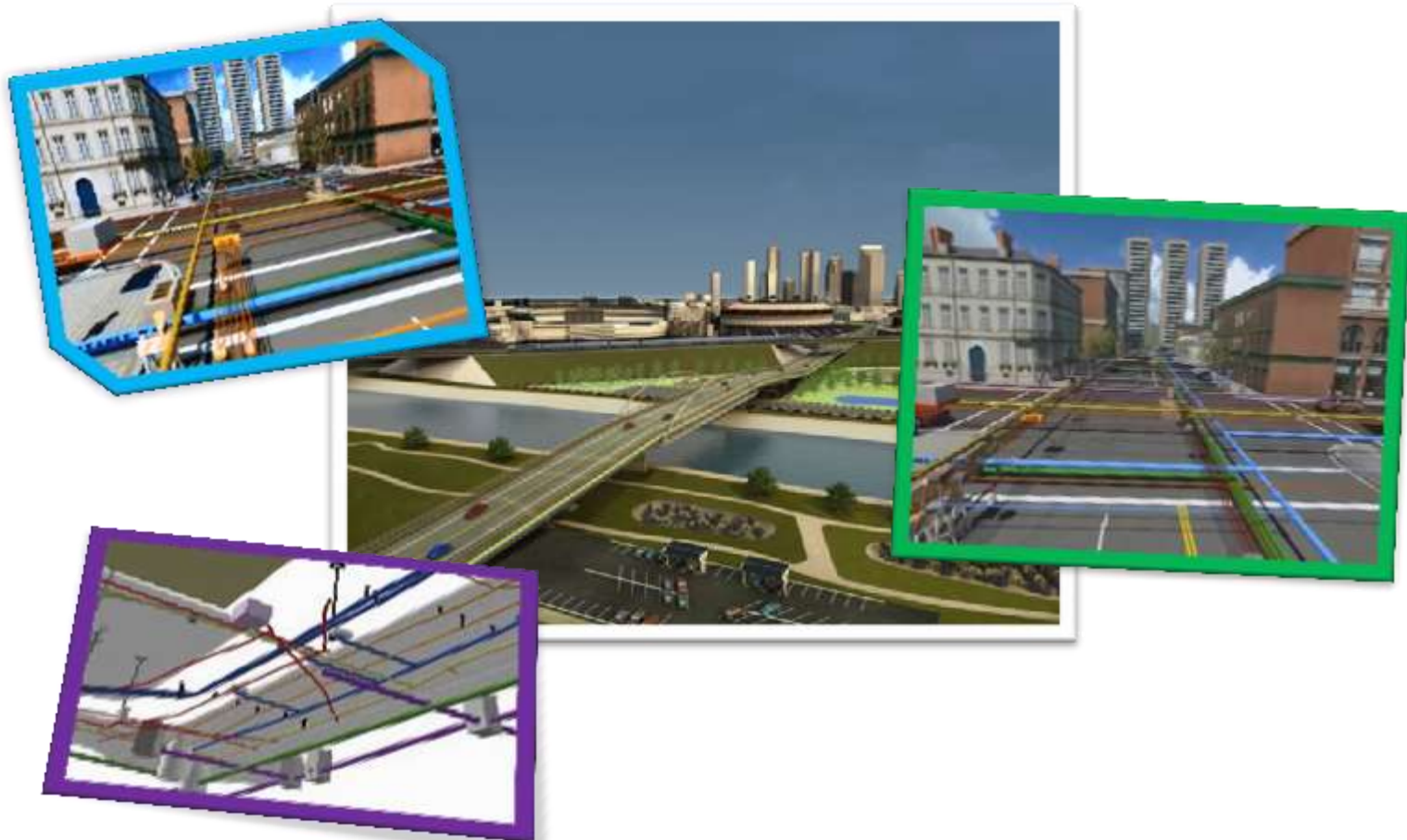
HOW SHOULD JUEM IN TERMS OF
UNDERGROUND UTILITY MAPPING
RESPOND?

CURRENT POLICY RESPONSE

[Near Immediate Initiative]



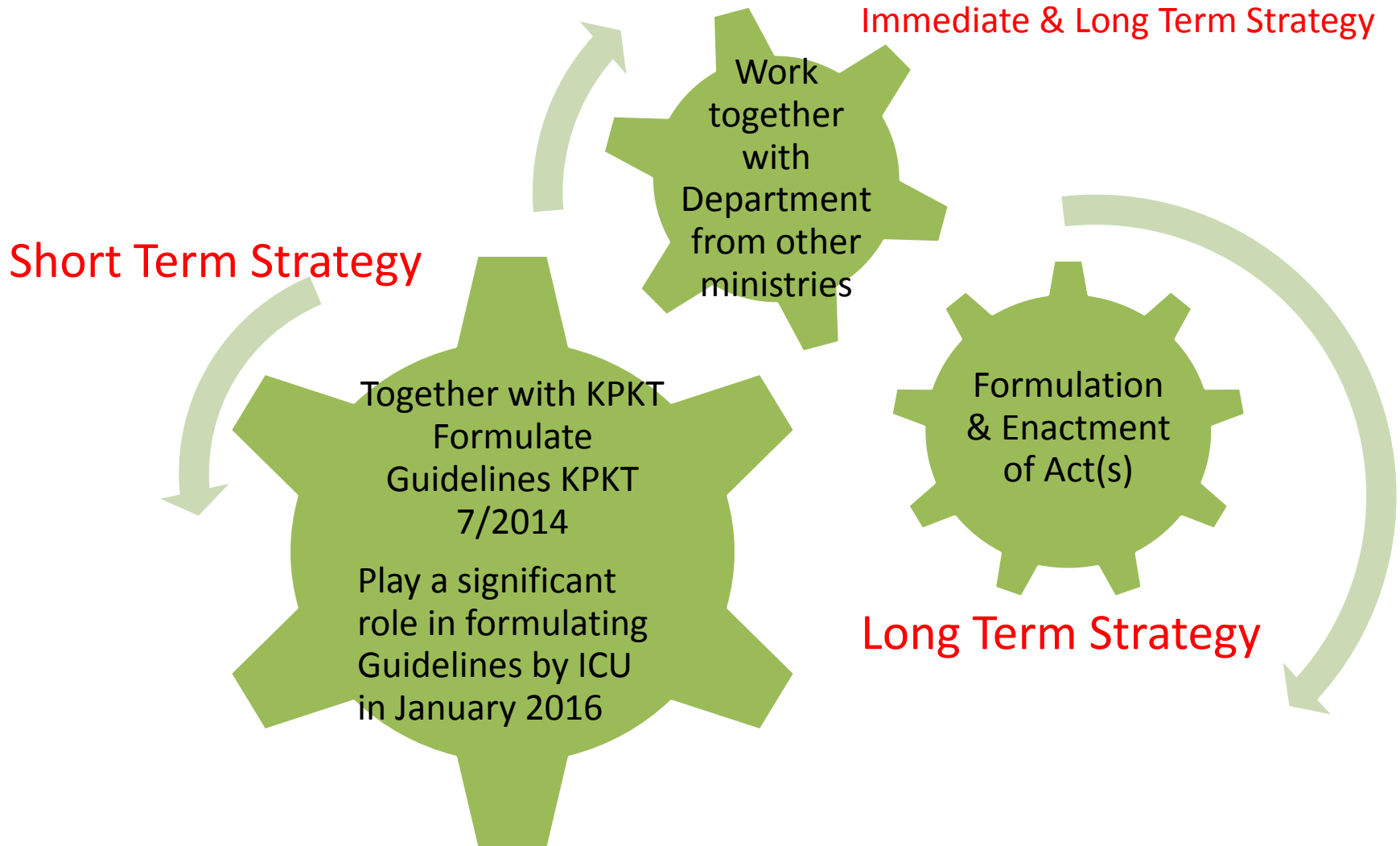
Example 1; 3D Smart Cities 3D Utility Mapping



Example 2; Virtual Technology



Latest approach to data acquisition



Lingering issues

Approach yet
to bear fruit

**no guidance for
implementation**

Data restriction
and security
issue.

- Lack of Data
sharing
culture

- Intellectual
property
rights issues

Directive is a
guideline, no
mandatory effect
– cannot enforced

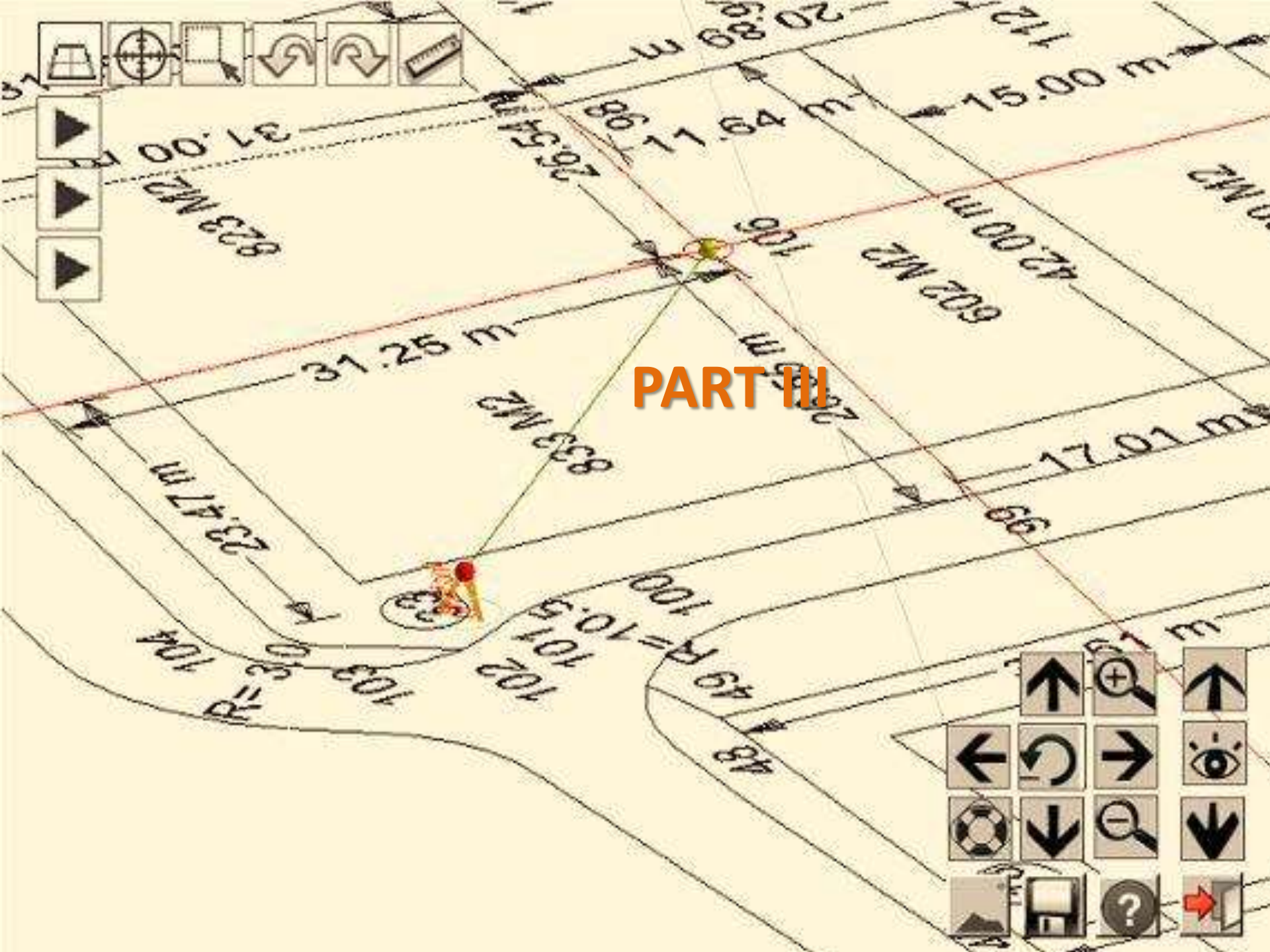
Submission is
purely based
on discretion

Are The Above Efforts Adequate & Sufficient?



What Else?

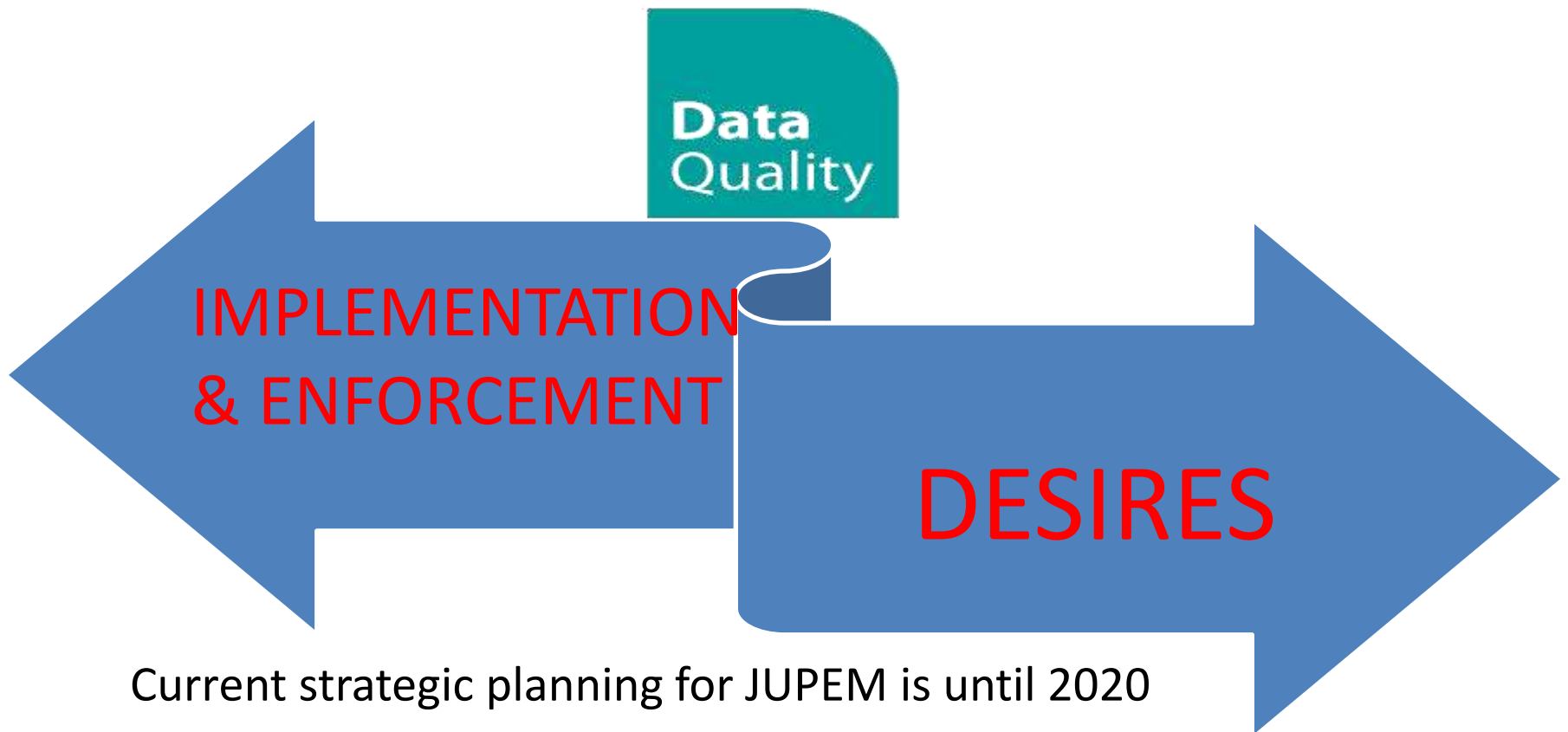




PART III

Policy and Policy Change in The Role of JUPEM

Reality Check



Current strategic planning for JUPEM is until 2020

Ability of JUPEM to continuously evolve to meet future demand.

Still rely on government annual allocation for financial budget

Future Plans, Roles & Products

NOW

Provider of ;-
Maps
Digital Data
Basic Cadastre and Topo
data
Data Portal – Geoportal,
Multipurpose Cadastre,
Kadaster and
SmartKadaster -

Future

Support ;-
Big Data
Application - “Call
before you Dig”
Development of new
mobile Apps
Augmented Virtual
Reality Technology
Generate income for
department

Policy Change On Generating Income & Self Finance



JUPEM: New Policy Direction Towards Obtaining Quality Data



A new policy is required

Sets new directions for
JUPEM generally and
underground utility
mapping in particular



Emphasizing on obtaining
accurate data as 1st
priority

Making it as a mandatory
exercise



Things To Consider In The Policy



- Impact of technology on future way of doing business
- Foresight the future and what is coming
- Formulate the agendas, objectives and long term strategies until 2050.
- Take into account of 4th Industrial Revolution requirements
- Policy and Law should be keeping abreast with technology.

Is JUPEM Up To The Mark?

The Future Is Very Bright



Thank you

