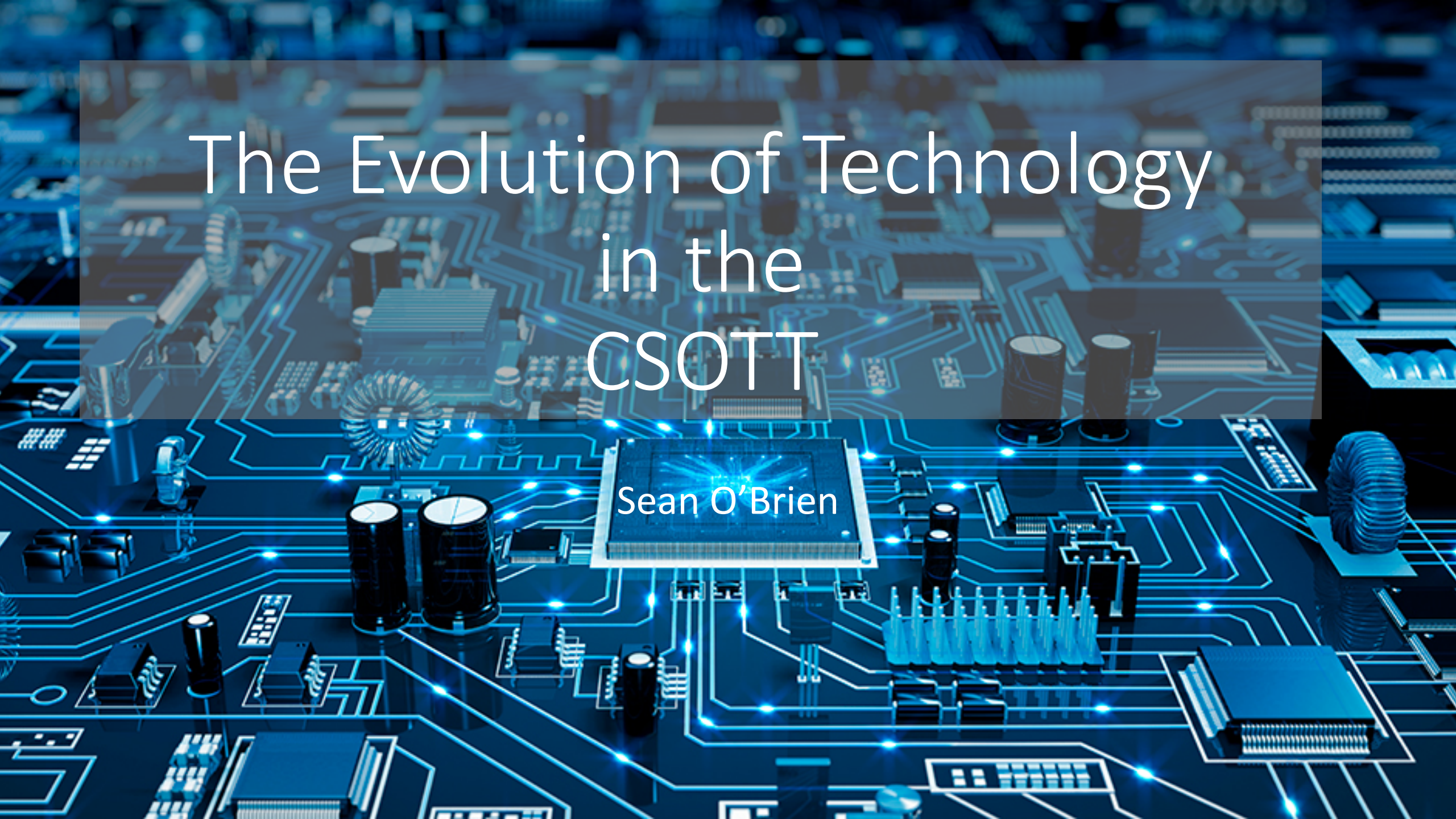


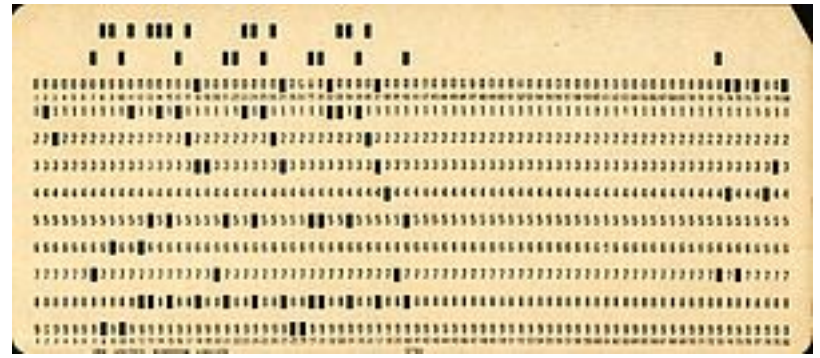
The Evolution of Technology in the CSOTT

Sean O’Brien

Presentation Outline

- A Historical Perspective
- Intelligent Character Recognition (ICR)
- Computer Assisted Personal Interviewing (CAPI)
- Other Important Technological Developments
- LIDAR Aerial Photography

A Historical Perspective



- The CSOTT has played an important role in introducing computerization to many Government agencies and departments.
- In 1957 the CSOTT undertook the listing of punch cards for the Inland Revenue Division
- In 1986 the CSOTT spearheaded the capturing of historical and current data of passport records held by the Immigration Department.
- In 1971 the CSOTT began a computerized project for the immigration department to assist the Chief Immigration Officer in effecting more efficient controls over arrivals and departures.

A Historical Perspective

Other Agencies which the CSOTT was instrumental in introducing a computerized environment includes:

- National Insurance Board;
- Central Bank;
- OTSC;
- Ministry of Health;
- Ministry of Finance and Economy;
- Ministry of Industry of Enterprise and
- Attorney General's Office.

AP/GETTY IMAGES

Intelligent Character Recognition

DOCUMENT PREPARATION

Prepare pages

Separate batches

SCAN

Local or remote scanning

Import faxes

Review images

RECOGNITION

Image cleanup

Form ID

OCR/ICR

OMR

Bar code recognition

VALIDATION

Key from image

Validate and correct data

Custom validation scripting

RELEASE

Archive images

Export data to database, workflow, or document management system

QC / RESCAN

Intelligent Character Recognition

Notably this technology was used for:

- 2004 Agricultural Census
- 2008/2009 Household Budget Survey
- 2011 Population and Housing Census

Intelligent Character Recognition

Advantages

- Form design is not as stringent as for OMR
- Processing time can be reduced due to automated nature of the process
- Allow for digital filing of questionnaires resulting in efficiency of storage and retrieval of questionnaires for future use
- Some handwritten responses can be automatically coded thereby improving data quality

UNSD/UNESCAP

Intelligent Character Recognition

Disadvantages

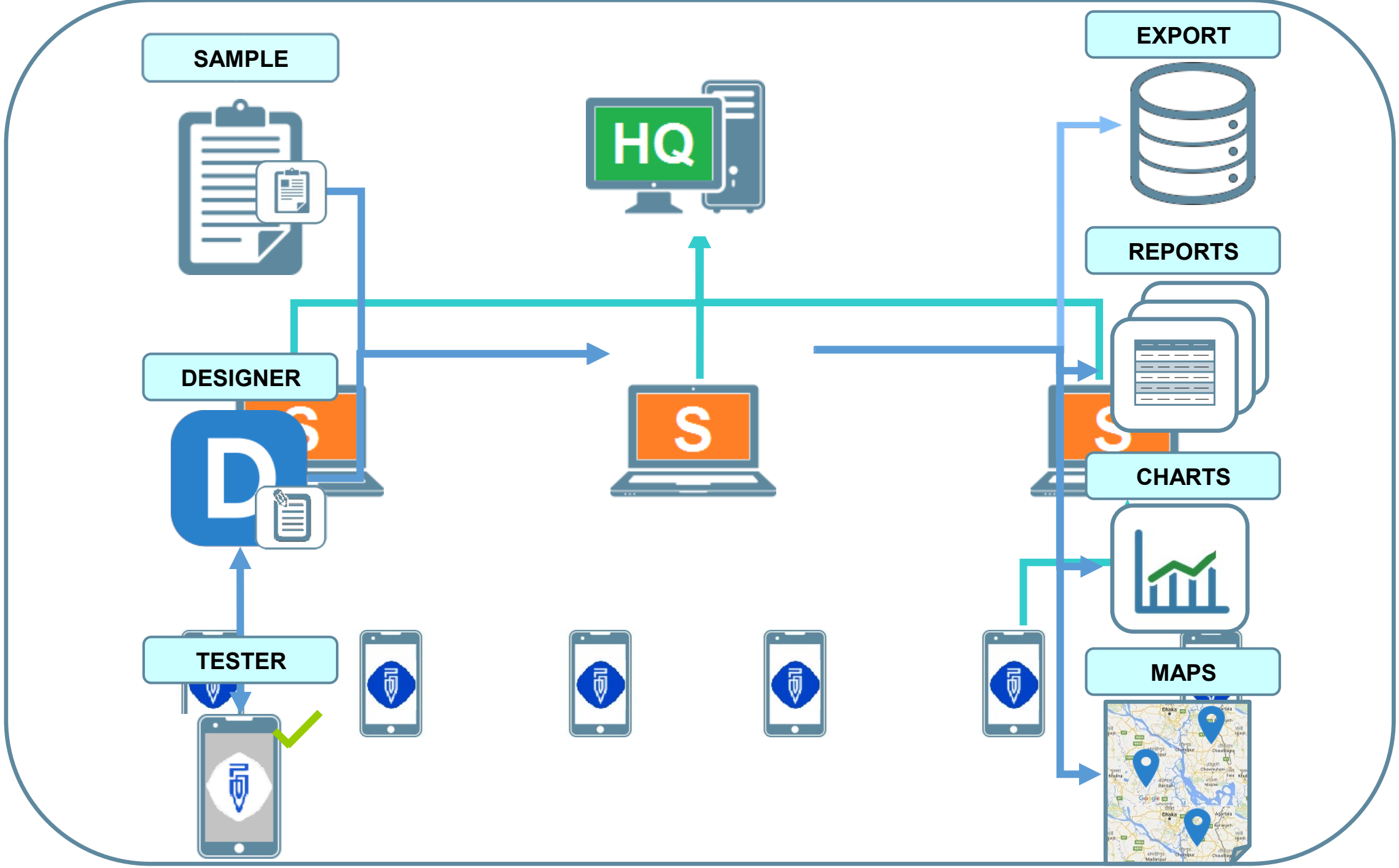
- Higher costs of equipment (sophisticated hardware/software required)
- High calibre IT staff required to support the system
- Handwriting on census forms be as close as possible to the model handwriting to avoid recognition error
- Possibility for error during character substitution which would affect data quality
- Tuning of recognition engine to accurately recognize characters is critical with trade-off between quality and cost

UNSD/UNESCAP

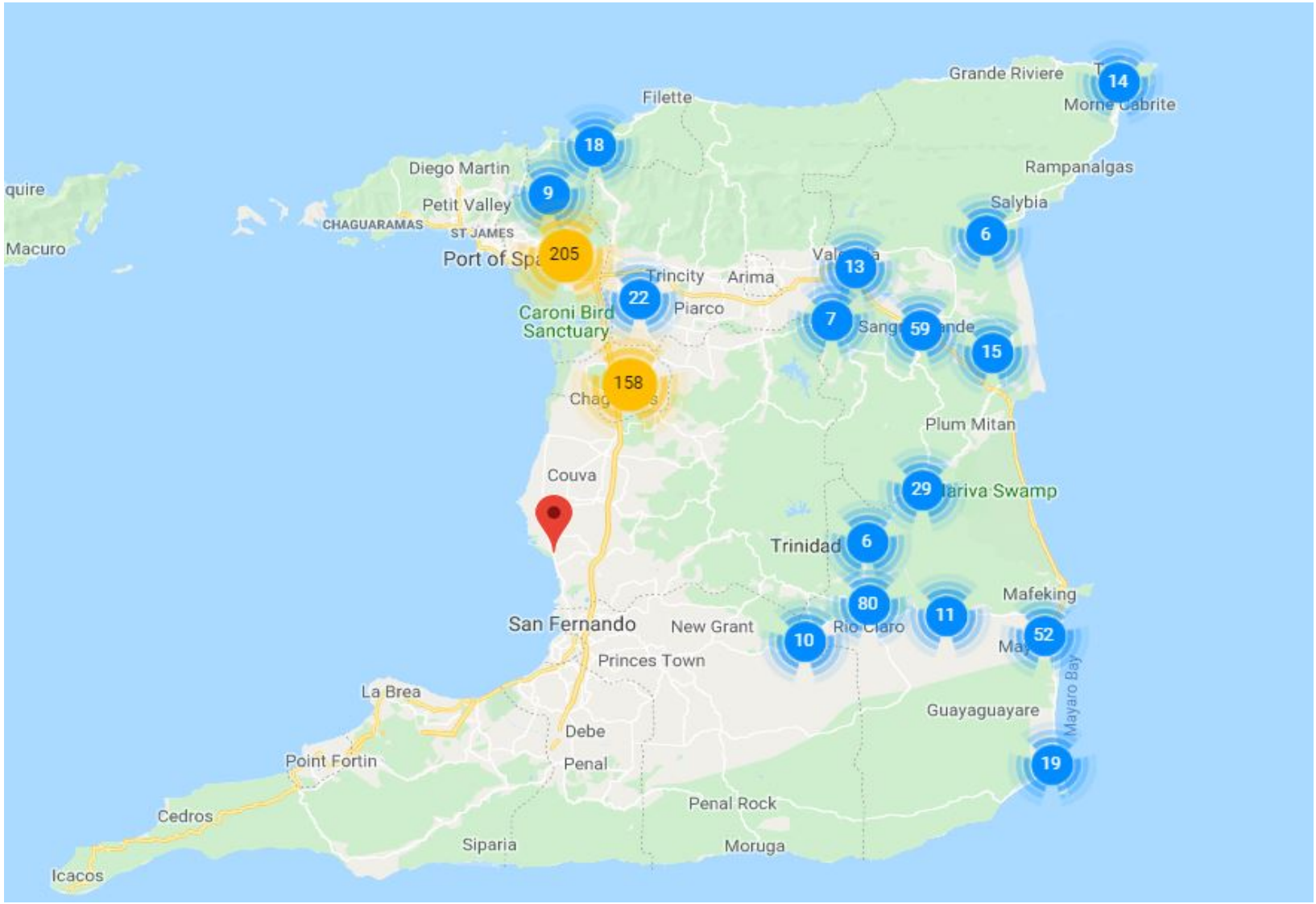
Computer Assisted Personal Interviewing (CAPI) – Survey Solutions

Surveys undertaken utilizing Survey Solutions:

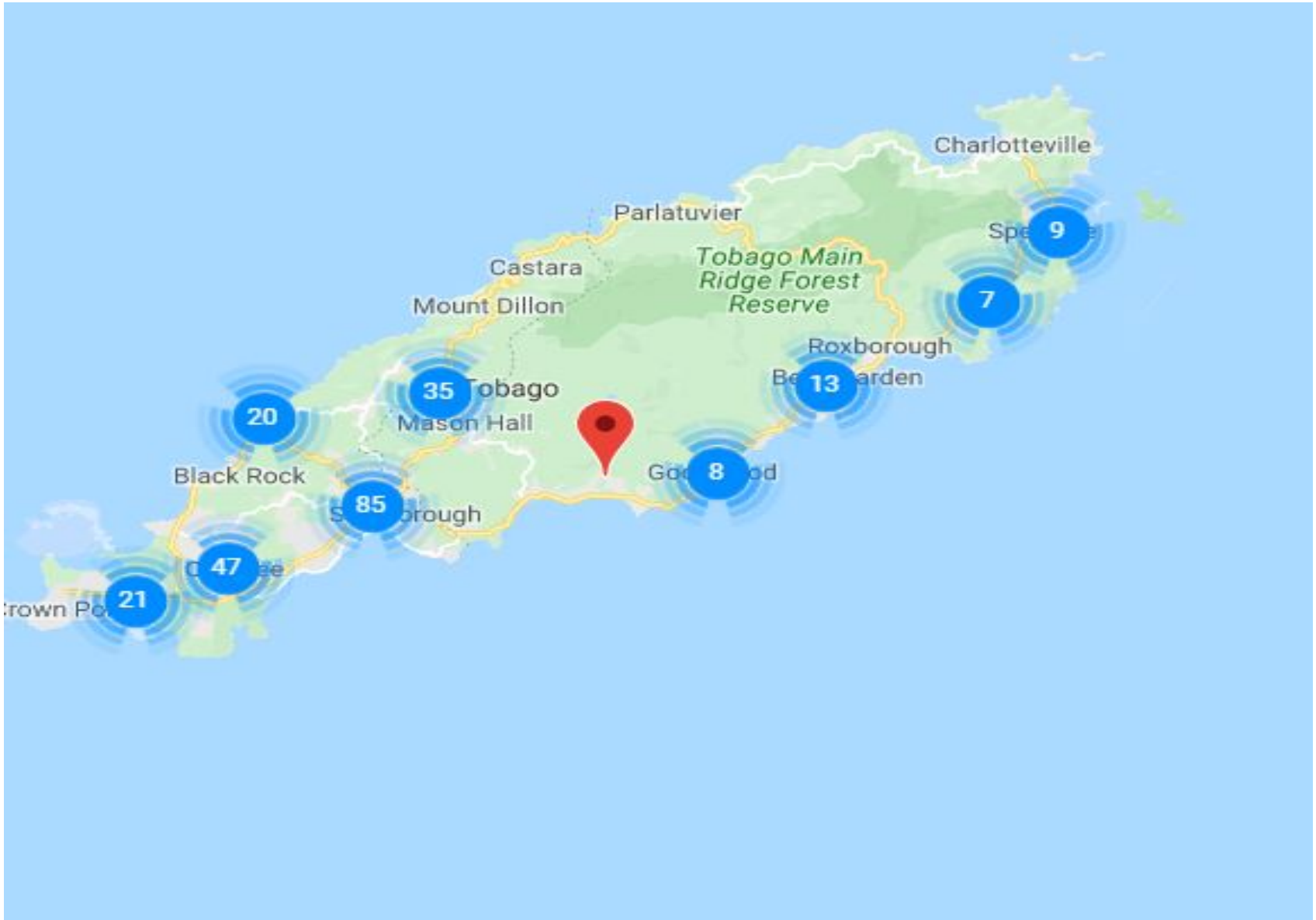
- Small and Micro enterprises Survey (1-2-3)
- Food and Agriculture Organization Socioeconomic Survey
- Multiple Indicator Cluster Survey 6 Pilot
- Survey of Departing Visitors (SODV)


SAMPLE
HQ
EXPORT
REPORTS
DESIGNER
S
S
S
CHARTS
TESTER
MAPS

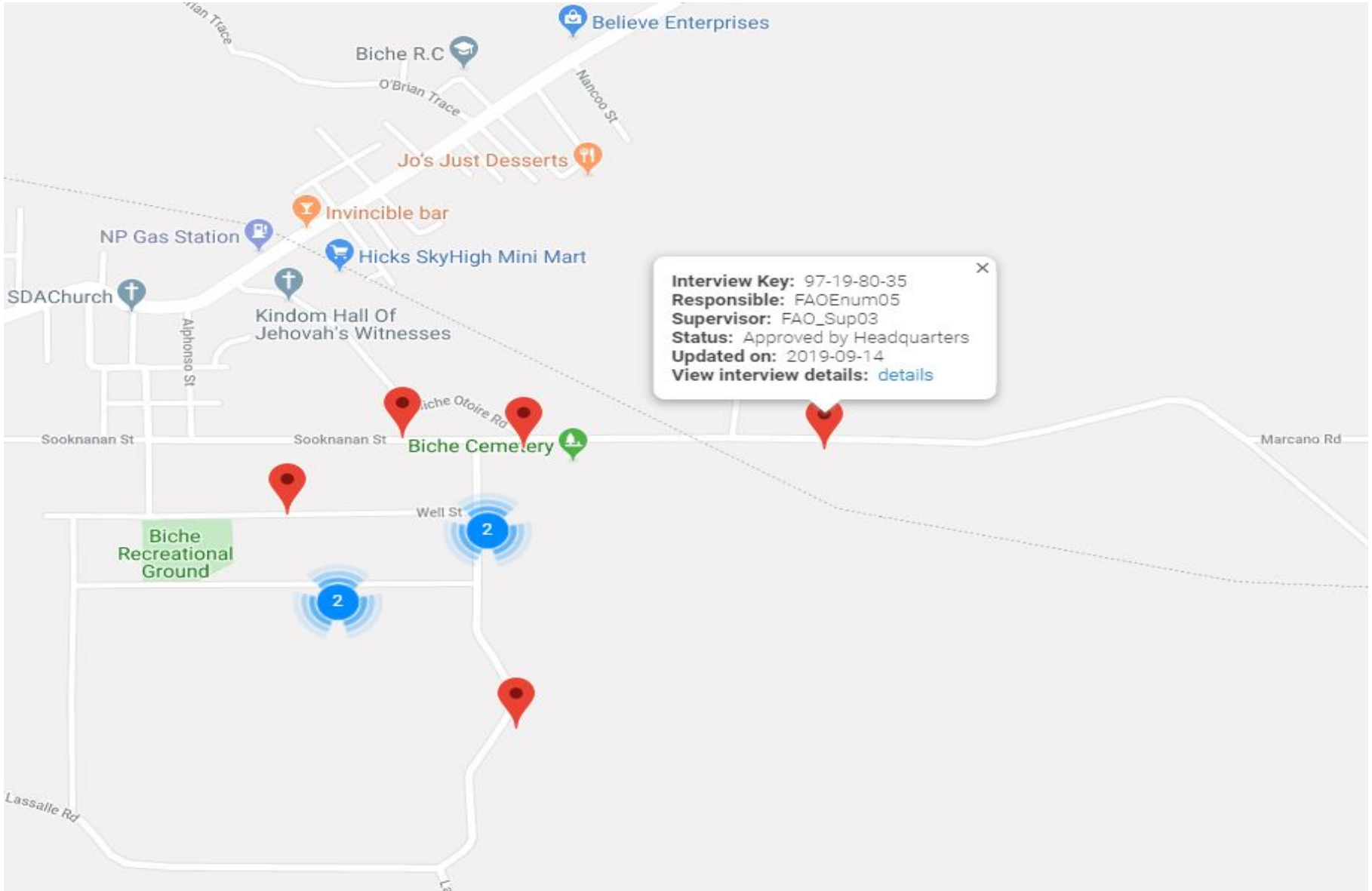
FAO Socioeconomic Survey Map Report



FAO Socioeconomic Survey Map Report



FAO Socioeconomic Survey Map Report



Other Important Technological Developments

- Eurotrace
- Webcomex
- Redatum
- Digital Printery
- Geographic Information Systems (GIS)

LIDAR Aerial Photography

Light Detection and Ranging (LIDAR):

Is a remote sensing method used to examine the surface of the Earth. ... These light pulses—combined with other data recorded by the airborne system— generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.

NOAA

Thank You For Your Kind Attention