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TECHNOLOGIES

# Introduction to Automated Counting for Fastscans

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# Counter Overview - Fastscan

- 2 large 3x5x16 inch temperature stabilized sodium iodide detectors
- Osprey or LYNX-II MCAs
- Apex-InVivo software suite
- High throughput, high sensitivity, low resolution system
- Typical count time 1 minute
  - Cs-137 mda = ~200 Bq (6 nCi)
  - Co-60 mda = ~145 Bq (4 nCi)
  - I-131 mda = ~250 Bq (8 nCi)



# Autoscan (legacy)

- Autoscan allows Fastscans to operate in automatic mode that does not *require* an operator to be present.
- Autoscan has been around for many years
  - It is the standard in Canada
    - Bruce power
    - OPG
- Current Autoscan is compatible with Apex-InVivo v1.2 and greater
- Current design has not been updated since the 1990s
- We are completely updating the Autoscan design

Original Autoscan Design



# Re-Imagined Autoscan (RAS, AS3)

- Alleviate pain points identified by existing and potential customers in the current Autoscan Option
  - Slow operation
  - Unclear instructions/instrument status for count subject
  - Difficult to change messages
  - PLC problems difficult to troubleshoot
  - PLC is overkill
- Reduce the footprint of the Autoscan Option
- Make the Autoscan easier and less expensive to install
- Modernize the look and feel of the Autoscan option
- Reduce the price of the Autoscan option

# Re-Imagined Autoscan

- Project currently in development. Expected completion Q1 or Q2 – 2025
- Reaching End of Design phase (within next week or 2)

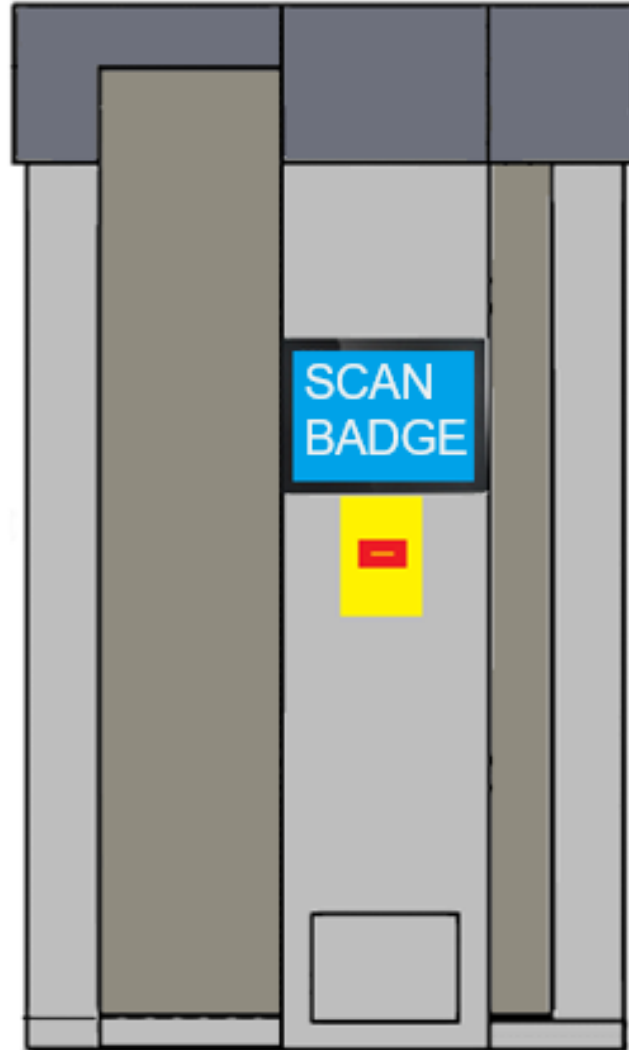


# Re-Imagined Autoscan

The system will consist of:

- A touchscreen monitor that will accept Subject ID input and display instructions and information as required.
  - This monitor will be placed on the outside of the Fastscan detector tower for noticeability and ease of access
- A bar code scanner that can read subject ID info from ID/security badge or similar.
- A mini display screen that will echo the touchscreen monitor display
  - Mounted inside the Fastscan booth at the top where the count subject can easily see it during the measurement
- An occupancy sensor that can detect if a person is in the Fastscan shield booth
- Audio output
- A camera that can photograph an individual inside the Fastscan shield booth
- A new software utility application that controls all hardware components of the Autoscan Option and communicates with the Apex-InVivo software
- An embedded PC that will
  - Run the new software utility application
  - Accept all Fastscan peripheral inputs, excluding detectors.

# Re-Imagined Autoscan





# Operation

- Fastscan can operate in Autoscan mode completely unattended
  - OPG Canada
  - Bruce Power Canada
- Fastscan can operate in Autoscan mode with RP in vicinity
  - Dosimetry Office (day shift)
- Fastscan can operate in Autoscan mode for backshifts
  - Sometimes backshift not comfortable with counter operation
  - Dosimetry can place unit in autoscan mode at end of day shift and return to normal mode (if desired) the following morning.