

# DIGITAL PATHOLOGY UPDATE


A. Malham

A series of several parallel white lines of varying thicknesses, slanted diagonally from the bottom-left towards the top-right, located in the lower right quadrant of the slide.

# DIGITAL PATHOLOGY TIMELINE

- Philips awarded contract 05/07/17.
- Install of DP equipment to NHS GGC and Lothian during 10/17.
- DP pilot commences 8/03/18 NHS GGC and 01/05/18 NHS Lothian.
- In 11/18 NHS GGC was awarded funding, as part of the Industrial Centre for Artificial Intelligence Research in Digital Diagnostics (iCAIRD) to become fully digitised and take part in research to achieve rapid and more accurate diagnosis in gynaecological disease and colon cancer.
- 10/19 NHS Ayrshire and Arran can view and scan slides
- ▶ 11/19 North region will receive all equipment (PCs and Scanner)

# WHAT'S HAPPENING NEXT?

- ▶ Streaming of Images between NHS GGC and Lothian.
  - ▶ Creation of a National Business Case to allow the introduction of DP to all boards.
  - ▶ Support from Scottish Health Technologies Group to evaluate DP within Scotland.
  - ▶ Solutions for long term data storage and National Reporting solution.
  - ▶ **National LIMS**
- 

# ARE WE ALL GOING DIGITAL?

- ▶ The business case will consist of multiple phases to cover the extent of DP needs across Scotland. *This is a long term process.*
- ▶ **Phase 1** – Introduction of DP; PCs and Scanners with 1 year of Storage
- ▶ **Phase 2** – Longer term storage solutions – local, regional or national
- ▶ **Phase 3** – National LIMS allowing bidirectional interface and Reporting solutions

**Caveat – The award of long term funding**

# CHALLENGES

## Storage Solutions Vs Cost

- ▶ Average size of a slide image is 15 x 30 mm = an average file size of **1.2 GB**. 1GB is the equivalent of 310 minutes on YouTube or an hours download from Netflix (not HD).
- ▶ Scotland has around 1,837,295 slides per year equating to 2,204,754 GB or 2154 TB (1000 GB is 1TB). An average Netflix customer will download 45 GB of films (data) per month, which is around a large resection case or 37 slides. Amazon charges £79.99 per TB of photos equating to £172,298 per year.

## National Networking

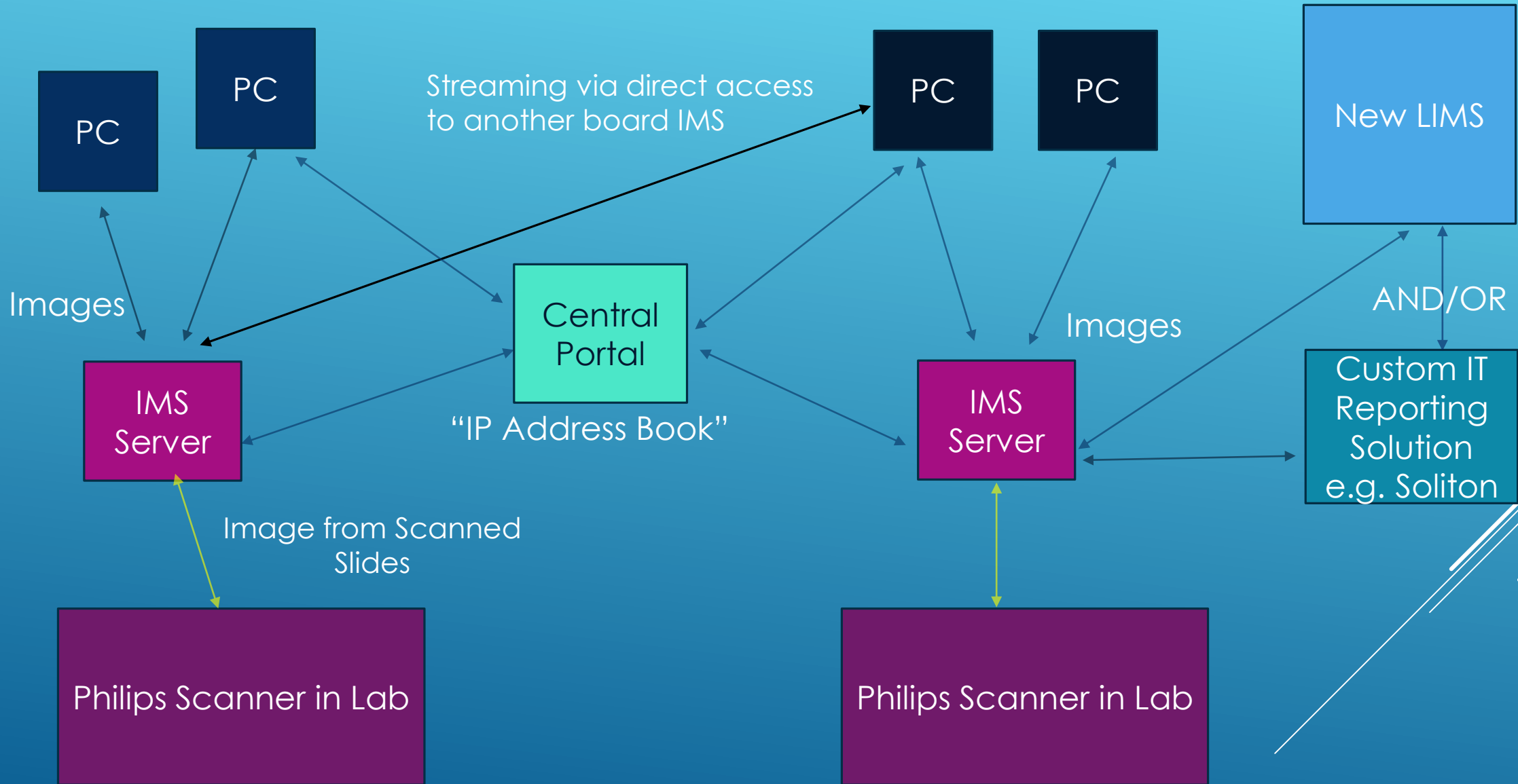
- ▶ Models are being explored most likely network model is through the central portal (next slide).

## Information Governance


- ▶ Requires Data Sharing Agreements, which will incorporate Privacy Impact Assessments as part of IT security.

## NHS Lothian

## NHS Greater Glasgow and Clyde



# WHAT ELSE SHOULD I KNOW?

- ▶ The costs of long term storage will likely limit replicate data storage i.e. we need to keep our slides.
  - ▶ Depending on network speeds we don't know how easy reporting from home will be.
  - ▶ Scanners are available to scan mega slides and fluorescence. There is a Mega Scanner now in place at NHS GGC.
  - ▶ Not all slides will be digitised; NHS GGC estimates they will not digitise 30% of its slides.
  - ▶ That DP is only part of the process and to implement DP successfully then all areas leading to DP are required.
  - ▶ If NHS Scotland fully implements Digital Pathology then we will be the first country to do so!
- 

QUESTIONS?

