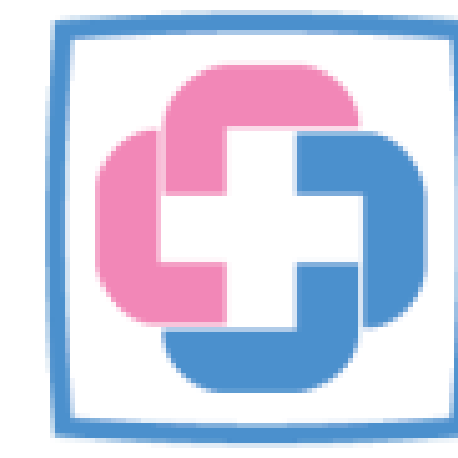




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Upgrading Cytogenetics Karyotyping System interface with Laboratory Information System (LIS)

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Aim

Karyotyping systems are crucial to cytogenetics laboratories worldwide. It automates capture and karyotyping of GTG (G-bands by Trypsin using Giemsa) metaphases. It also captures and counts FISH (Fluorescence In-situ Hybridisation) signals. Images of captured and processed metaphases are archived and served as medical documentations for both audit and legal purposes. Furthermore, Interface with LIS eliminates duplicated entry of patients' demographics and results into two independent systems, consequently, reducing typographical errors.

Methodology

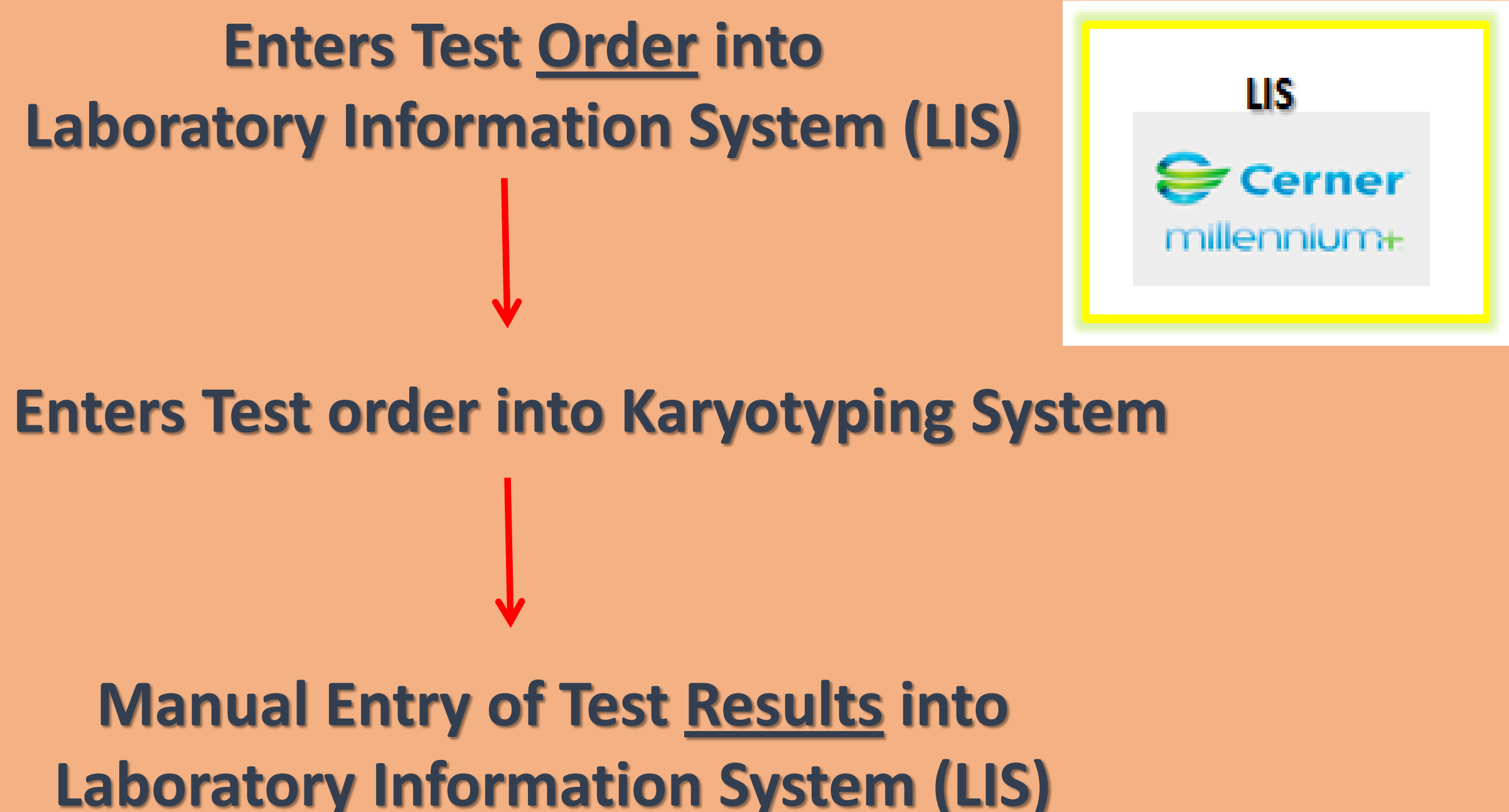
The existing karyotyping system was bought in 2007. We have seven units of workstations, which includes three with FISH capturing functions. Current system has no connection between LIS and our Cytogenetics karyotyping system. All patients' demographics and results have been manually entering into karyotyping system and LIS.

We replace our ageing karyotyping system with seven karyotyping capture and analysis workstations, which includes two FISH capture and analysis functions using upgraded motorized focusing capabilities. This system also has the ability to interface with our current Laboratory Information System (LIS).

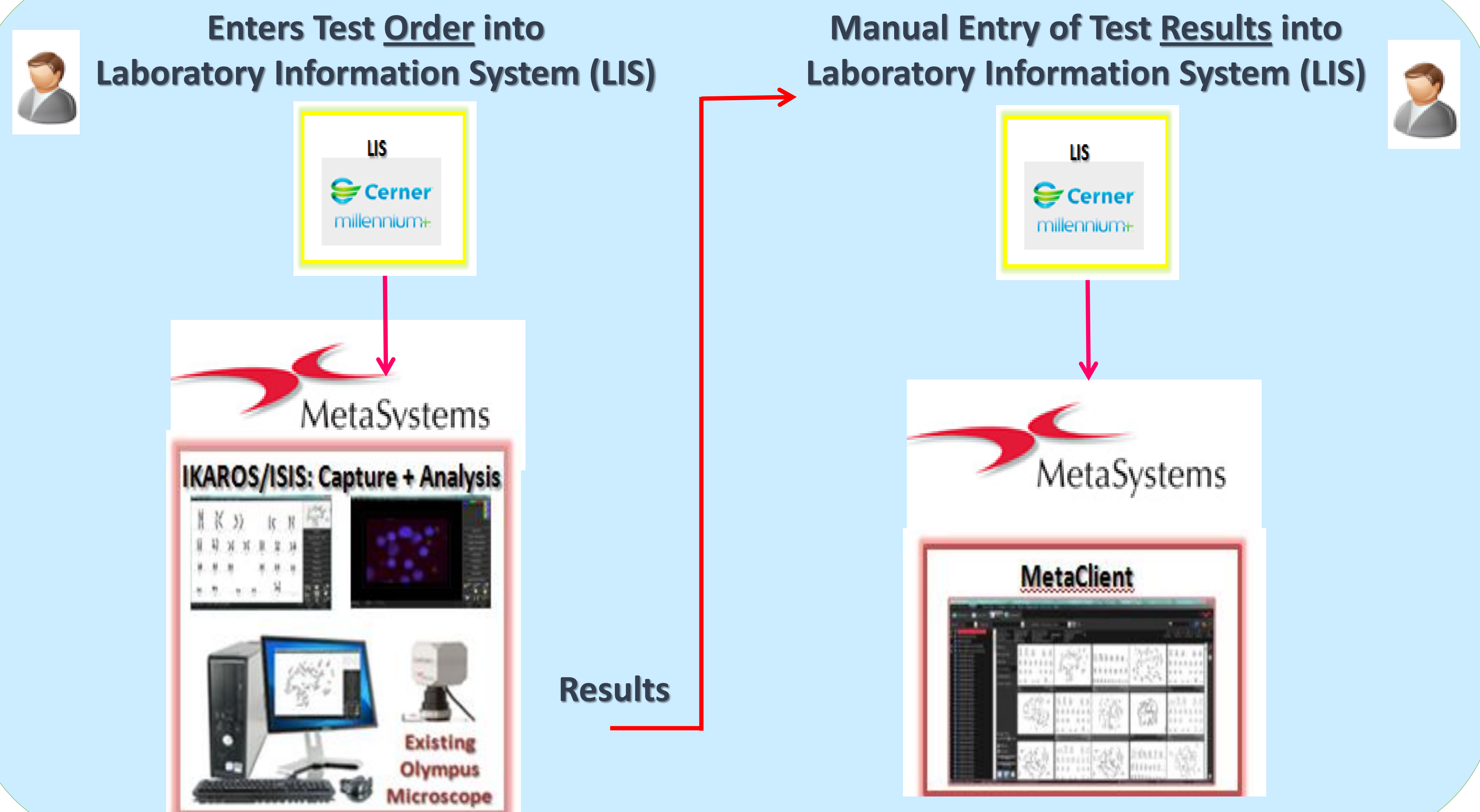
Result

- ✓ New workstations have been in place and training has been provided for all staff. Currently all staff have been familiar using the new workstations.
- ✓ New FISH workstations that has motorized focusing capabilities, allowing different planes to be captured on the slides, making great improvements on resolution and specificity. This focusing capability is additionally useful for tumor FISH. Overall, it refines the accuracy and reliability in patients' results.
- ✓ To achieve ZERO mistake, it fulfilled the aim of having a fully integrated system which included interface with LIS. Test orders in LIS will automatically export patients' demographics and results uni-directionally into karyotyping systems. Time is saved due to elimination of double entry.
- ✓ Migration of old data using our archived data since year 1999-2016 is still in progress. Thus, we have kept an old workstation as a backup.

Old workflow



Intervention



Conclusion

With the upgrading of cytogenetics karyotyping workstations, the manpower and time taken to ascertain the unnecessary workflow has been reduced. Hence, increasing our results reliability. This system allows for timely reporting of results and has impact in the decision making, management and care of children and women with genetic abnormalities.

Acknowledgement

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