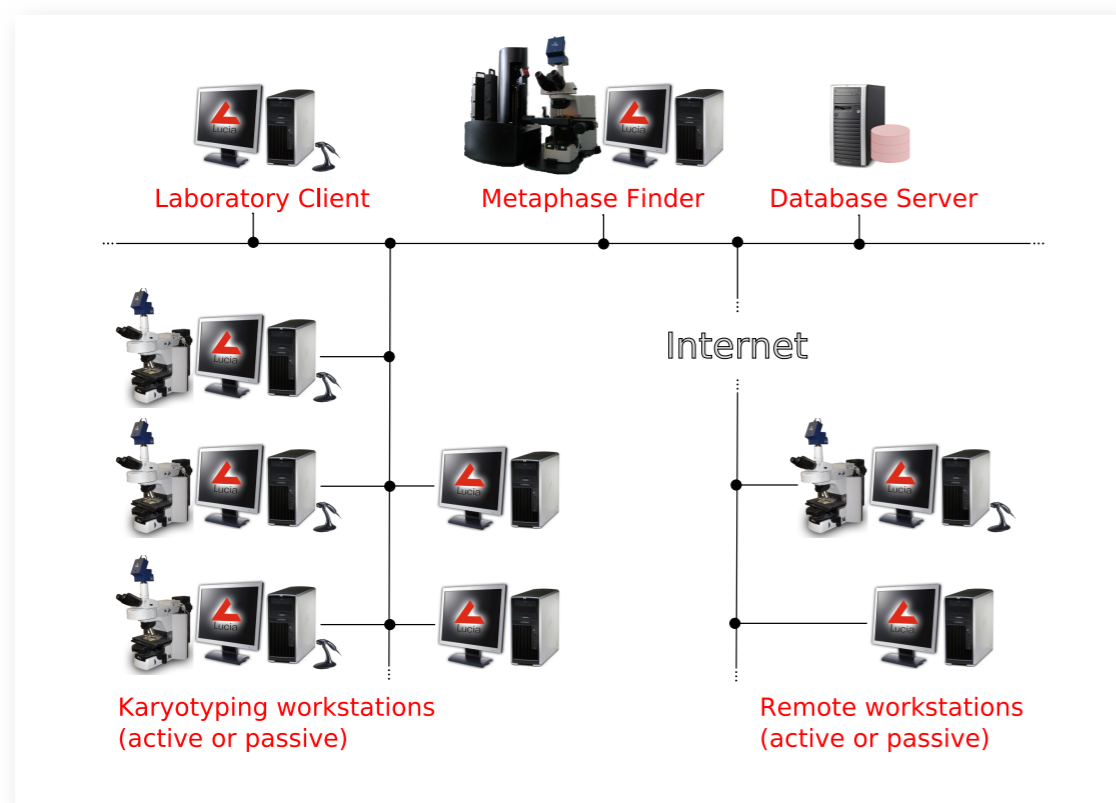


Workflow

You can vary the system to fit the intended workflow. Options are numerous: a one-computer system or a network of workstations dedicated to single tasks:

- **Slides Registration** - Registering new slides via a light-weight database client. Each slide gets a unique barcode associating it with a patient in the database. After the registration, the slides are placed into the loader cassettes. Patient data can be transferred to the database from a laboratory information system (LIMS).
- **Automatic Metaphase Search** - Metaphase Finder scans the slides and acquires thumbnail images of the metaphases found. Each image is assigned to a patient based on the barcode information. Everything is saved to the database.
- **Slides Distribution** - Slides which have been searched are either left in the Metaphase Finder for automatic image acquisition or passed to an active workstation for manual image acquisition and analysis.
- **Image Acquisition** - A high magnification oil immersion objective is used to make a full-resolution image of the suitable metaphases. The image is saved to the database.
- **Analysis** - Full-resolution images are analysed by software means of LUCIA Cytogenetics.
- **Reseek Metaphases** - Coordinates of each metaphase and its quality index are saved to the database during the search. Combined with the barcode identification, the system can physically locate any metaphase on any slide anytime.

One of possible configurations:



	Metaphase Finder	Active Workstation	Passive Workstation	Laboratory Client
Main Tasks	Microscope, Camera, PL200, Lucia	Microscope, Camera, Lucia	(Microscope,) Lucia	Lucia LAB database client
Slides Registration	●	●	●	●
Automatic Metaphase Search	●	-	-	-
High Magnification Image Acquisition	●	●	-	-
Analysis	●	●	●	-
Reseek Selected Metaphase	●	●	(●)	-



Metaphase Finder

LUCIA Cytogenetics



www.lucia.cz





Immersion oil dispenser attached to the microscope

Reliability

The Metaphase Finder system consists of carefully selected top quality hardware components all produced by well-established manufacturers. In a very compact setup, you can find the following devices cooperating together:

- **Nikon Eclipse 90i microscope**, computer controlled illumination ensures stable light conditions. The absolute coordinates focus control ensures reliable and fast auto focus.
- **Jenoptik ProgRes MF camera**, a highly sensitive camera which brings the top image quality and more than sufficient speed.
- **Prior PL - 200 Slide Loader, ProScan motorized stage**, these two devices compose a high-performance combination providing precision, speed and reliability of scanning.
- **Prior PLOIL Immersion Oil Dispenser** allows automation of the high-magnification image acquisition phase, which would otherwise need human assistance.

Comfort

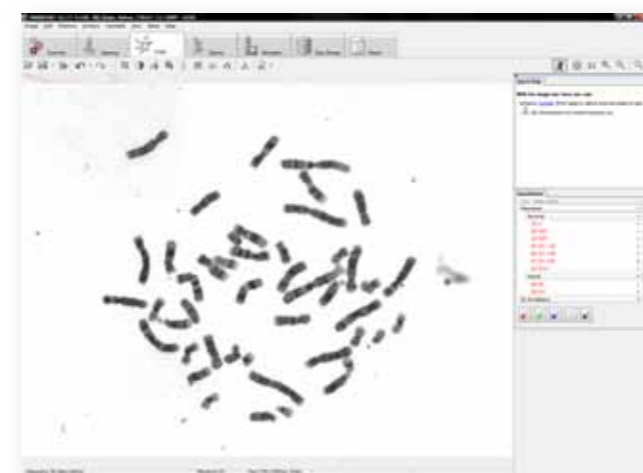
- **Press one button** - Once the system is adjusted by the administrator, the scanning process can be run by a single button.
- **Walk away** - The slide loader capacity of 200 slides allows more than 24 hours of unattended scanning at approximate speed of 8 minutes per full slide (~90mm²).
- **Check on the progress anytime** - The scanning results are immediately accessible within the database.
- **Reload slides anytime** - The scanned cassettes can be easily removed from the loader or changed during the scanning.

Performance

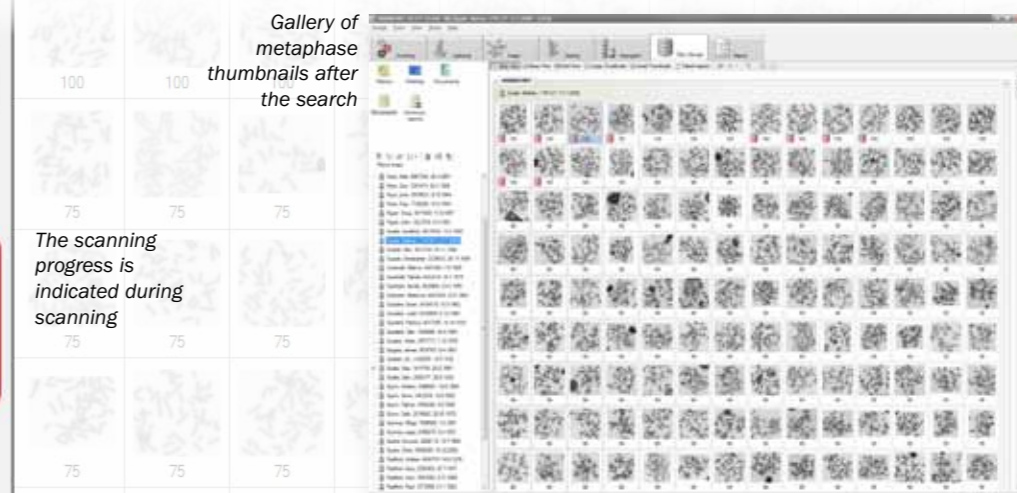
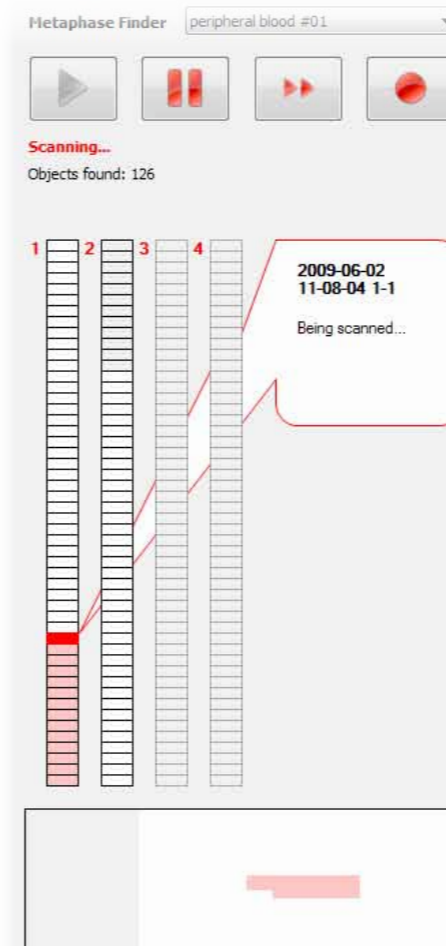
- The network-accessible database provides fast access to the metaphase galleries including the stage coordinates data.
- Metaphases can be located and reviewed on any workstation thanks to the automatic coordinates recalculation procedure.
- Metaphase images can be captured automatically using a high magnification (100x) oil immersion objective. The selection of metaphases to be scanned can be either automatic or manual.

Flexibility

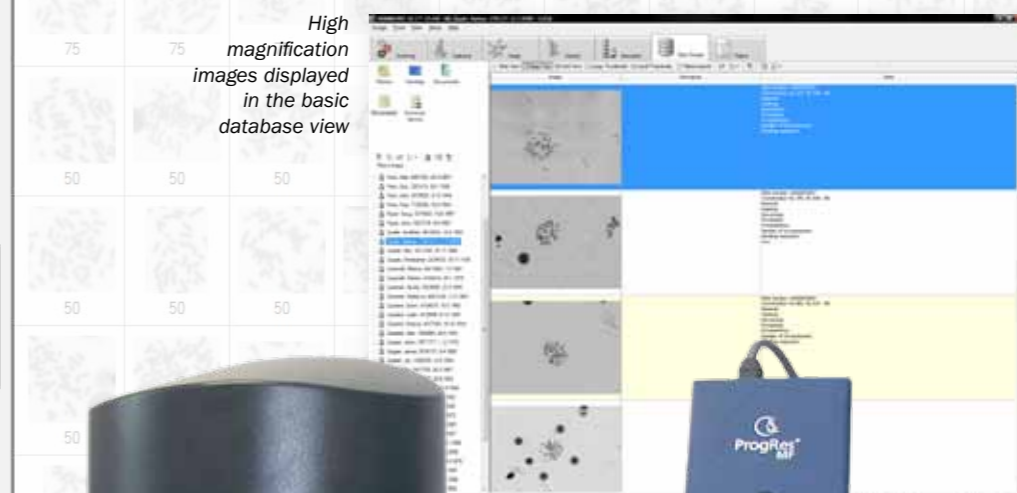
- The loader with the capacity of 200 slides* together with the integrated bar code reader open ways to build a highly effective system.
- * - Optionally, a basic 4-8 slides scanning stage can be used, leaving the way to upgrade to the full 200 slides system open.
- The included metaphase classifier is fine-tuned to handle different sample types and preparation techniques.
- Thanks to the network-based database and full bar code support, the system is broadly extensible and can whenever be adapted to meet increasing demands.



High magnification image ready for analysis



The scanning progress is indicated during scanning



High magnification images displayed in the basic database view

PL 200 attached to Nikon 90i microscope loading a slide

