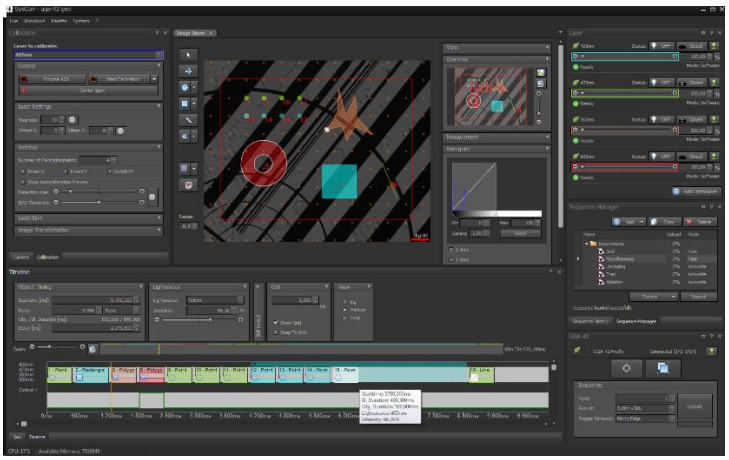
SysCon Software Package

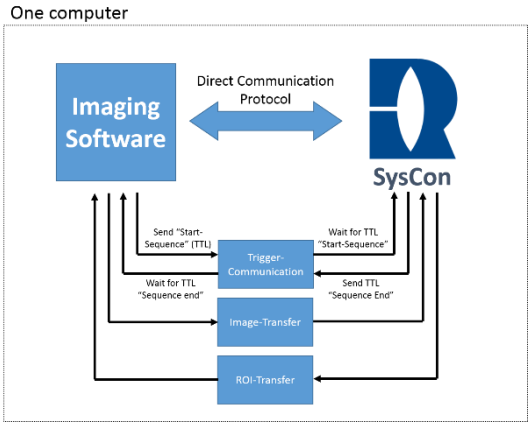
SysCon integrates all our software controlled devices like the UGA-42 series and laser systems in one software package for photomanipulation and offers two experiment modes: **Click & Fire** and **Sequence** mode.

In the **Click & Fire** mode, the photomanipulation is done directly in the live-image by pointing the mouse cursor to the desired position and clicking to activate the laser. The exposure time and intensity is defined by the user. In addition to point illumination, user-defined ROIs can be positioned and illuminated by one mouse click.



In the **Sequence** mode, more complex experiments with multiple objects (ROIs and / or points), user defined timing and intensities can be performed. Sequences are directly controlled by the UGA-42 real-time controller to ensure accurate timing. Features like autocalibration algorithms, snap-objects-to-grid, copy / paste-objects editing functions and high accuracy / high speed-scanning modes make *SysCon* to a powerful, yet intuitive tool for photomanipulation. *SysCon* can be used independently of and simultaneously with any imaging software. In addition, special communication protocols are available for the imaging software ZEN (Zeiss), NIS Elements (Nikon), MetaMorph (Molecular Devices) and µManager (Open Source).

Communication protocol between 3rd party *imaging software* and *SysCon*



- ***SysCon*** and ***imaging software*** are installed on the same computer and run simultaneously
- Transfer of image data from ***imaging software*** to ***SysCon***
- Transfer of ROI information from **SysCon** to ***imaging software*** for later image processing
- **Synchronization** of the UGA-42 with other devices via the two TTL-input and two TTL-output channels on the UGA-42 controller. (Compatible trigger device required)

Rapp OptoElectronic GmbH
Kronskamp 110
22880 Wedel, Germany

T +49 (0) 4103 701 89-0
info@rapp-opto.com
www.rapp-opto.com

SysCon Features:

- All computer controlled ROE devices are integrated (scanner, laser systems etc.)
- **Sophisticated functions** for photomanipulation
- **Autocalibration algorithm**
- **Click & Fire mode**
  - Real-time photomanipulation at mouse-click
  - Small spots (UGA-42 *Firefly*), different spot shapes and sizes (UGA-42 *Geo*) or user defined ROIs
  - Control of laser exposure time and intensity
- **Sequence mode**
  - Programmable illumination of multiple objects in one experiment
  - User friendly ROI and timeline editor
  - User defined laser intensity and timing for each object
  - Up to 4 laser light sources can be used independently within one experiment
- **Bi-directional TTL-signaling for synchronization with *the imaging software* and additional devices**
  - 2x TTL-output and 2x TTL-input channels
  - Easy TTL-synchronization via timeline editor
    - Start sequence at TTL
    - Breakpoints during sequence to wait for external TTL-feedback
    - Send TTL during sequence as feedback to external device

Communication between 3rd party *imaging software* and *SysCon*

- Real camera image transferred from ***imaging software*** to ***SysCon***
  - Real camera coordinates for calibration and ROI positions
- Sequence synchronization via ***imaging software*** trigger environment
  - Photomanipulation triggered from ***imaging software***
  - Optional pausing of image acquisition in ***imaging software*** while photomanipulation is in progress
  - Feedback trigger from ***SysCon*** to **imaging software** (ZEN, NIS Elements and MetaMorph)
- ROI transfer and export
  - ROIs can be transferred directly from ***SysCon*** to ***imaging software***

Rapp OptoElectronic GmbH
Kronskamp 110
22880 Wedel, Germany

T +49 (0) 4103 701 89-0
info@rapp-opto.com
www.rapp-opto.com