sense
software

Manual guide
for
SENSE Batch

22.09.2020

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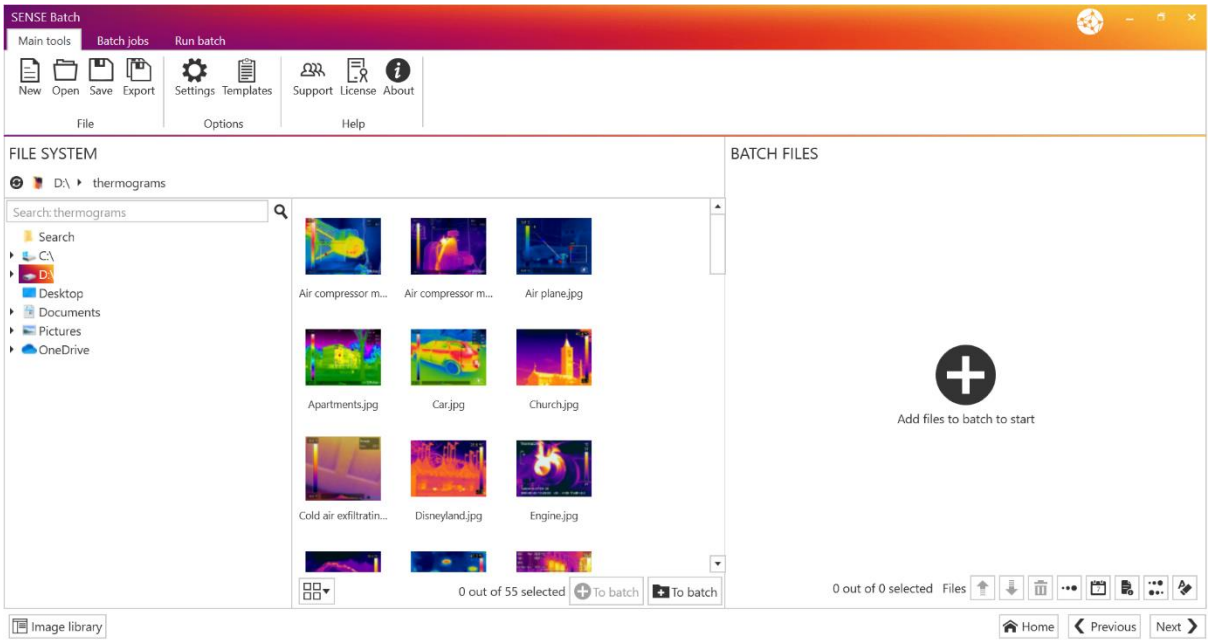
1. What is SENSE Batch

1.1. Introduction

SENSE Batch is software which allows user to process multiple thermal images and sequences at once.

It is a modern solution for automating repetitive tasks with thermal images, while keeping the quality of manually processed images.



The most important features that the software provides are:

1) Time saving: Every operation on a thermal image can be automated. Normalize images to use the same parameters / settings / measurements – if editing one image costs a minute, user can easily save hours or days by mass – changing hundreds of them
2) Variety of jobs: Automatically set variety of parameters, apply isotherms, change palette, modify measurements or even apply users own logo; SENSE Batch also has analytics jobs that find extreme spots and much more
3) Customizable overlay: By altering the application settings select which information user want to see on top of the thermal image after processing, including date/time, measurements, emissivity, compass, measurements and others
4) Integrated image editor with unique features: Use built-in editor with a variety of functions to adjust an image to your needs. The image set can be latter applied to the rest of the images
5) Thermal fusion alignment: Respond to alignment issues caused by thermal cameras
6) Sequence playback segmentation: Select and export only interesting parts of thermal sequences
7) Sketch image replacement: Use users own logo or other images in any reporting software
8) Custom palettes: Allows user to import custom pallets from other users (.pal)
9) Multiple outputs: Choose from multiple outputs such as:
    a) Radiometric images (.jpeg) for further processing

b) Plain overlay images which can be shared online or with user customers.
c) Create transcoder from radiometric sequence to .AVI video file.
d) Export radiometric data to CSV files
e) Extract GPS location from thermal images and generate map
f) Generate histogram plot from whole thermal image or selected area
g) Generate profile plot from thermal image lines

2. Installation

2.1. System requirements

2.1.1. Operating system

- Microsoft Windows 7 SP1
- Microsoft Windows 8.x
- Microsoft Windows 10

2.1.2. Hardware and prerequisites

- 2GB of RAM (3 GB is recommended)
- 100 MB of disk space
- 1024x768 screen resolution
- .NET Framework 4.6

2.2. Installation of SENSE Batch

2.2.1. Procedure

Follow this procedure:

- Download SENSE Batch from: https://sensesoft.eu/sense-batch.html#download
- Open SENSE Batch Installer that user have downloaded
- In the license agreement dialog box, carefully read and accept the license agreement and click *Next*
- Click *Install*
- Click *Finish*
- Run from start menu or desktop

3. Activating SENSE Batch license

3.1. General

The first-time user starts SENSE Batch, the license activation dialog will be shown which will ask for activating license key obtained during purchase.

3.1.1. Figure

3.1.2. Activating SENSE Batch

Follow this procedure:

1) Start SENSE Batch
2) In the *Software license key* box, enter software license key
3) Choose activation method
    a) Online activation
    b) Offline activation
        i) Copy machine code
        ii) Visit the following webpage https://sensesoft.eu/d/form.html?type=batch
        iii) Enter details and obtain the activation code
4) Click *Validate*
5) When the message *The license is genuine and activated* is displayed, close the activation window. It has been successfully activated SENSE Batch

4. Application screens

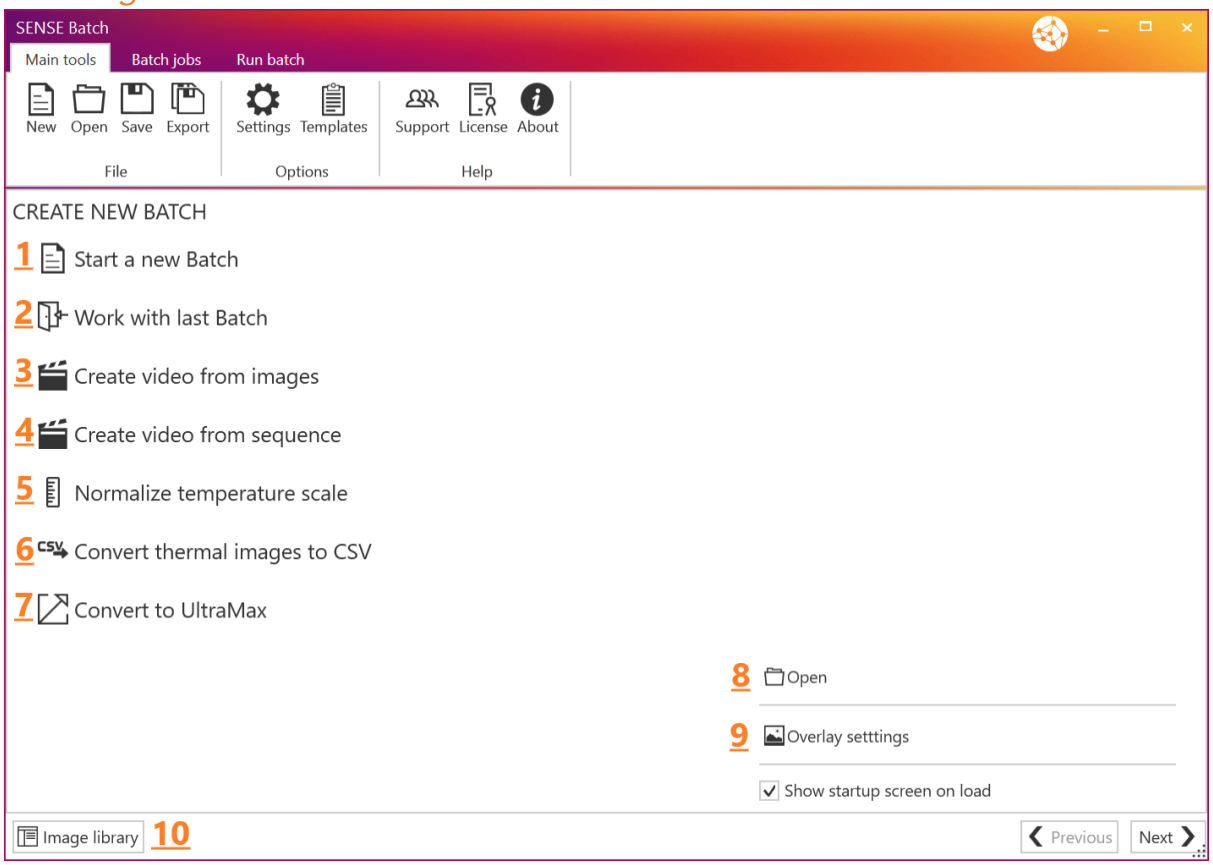
4.1. Start screen

4.1.1. General

This screen is the main screen where user starts every work.

Begin work with new batch or with last one, create videos, change settings, etc. Start screen provides quick access to every feature, which makes user's work faster and more comfortable.

4.1.2. Figure



4.1.3. Explanation

1) Start a new batch – create new batch file
2) Start work with last batch – continue work from last closed batch
3) Create video from thermal images – create a video from single thermal images
4) Create video from sequence – create video from sequences; every frame from sequence is processed
5) Normalize temperature scale – set the same temperature scale limits to multiple thermal images
6) Convert thermal images to CSV (comma-separated value) – create spreadsheet file which stores image data
7) Convert to UltraMax – increase the quality of images using UltraMax
8) Open an existing batch file – open batch file from directory
9) Open overlay settings – alter existing settings for image displayed in file explorer
10) Image library – open embedded file explorer with editor

4.2. Batch jobs selection screen

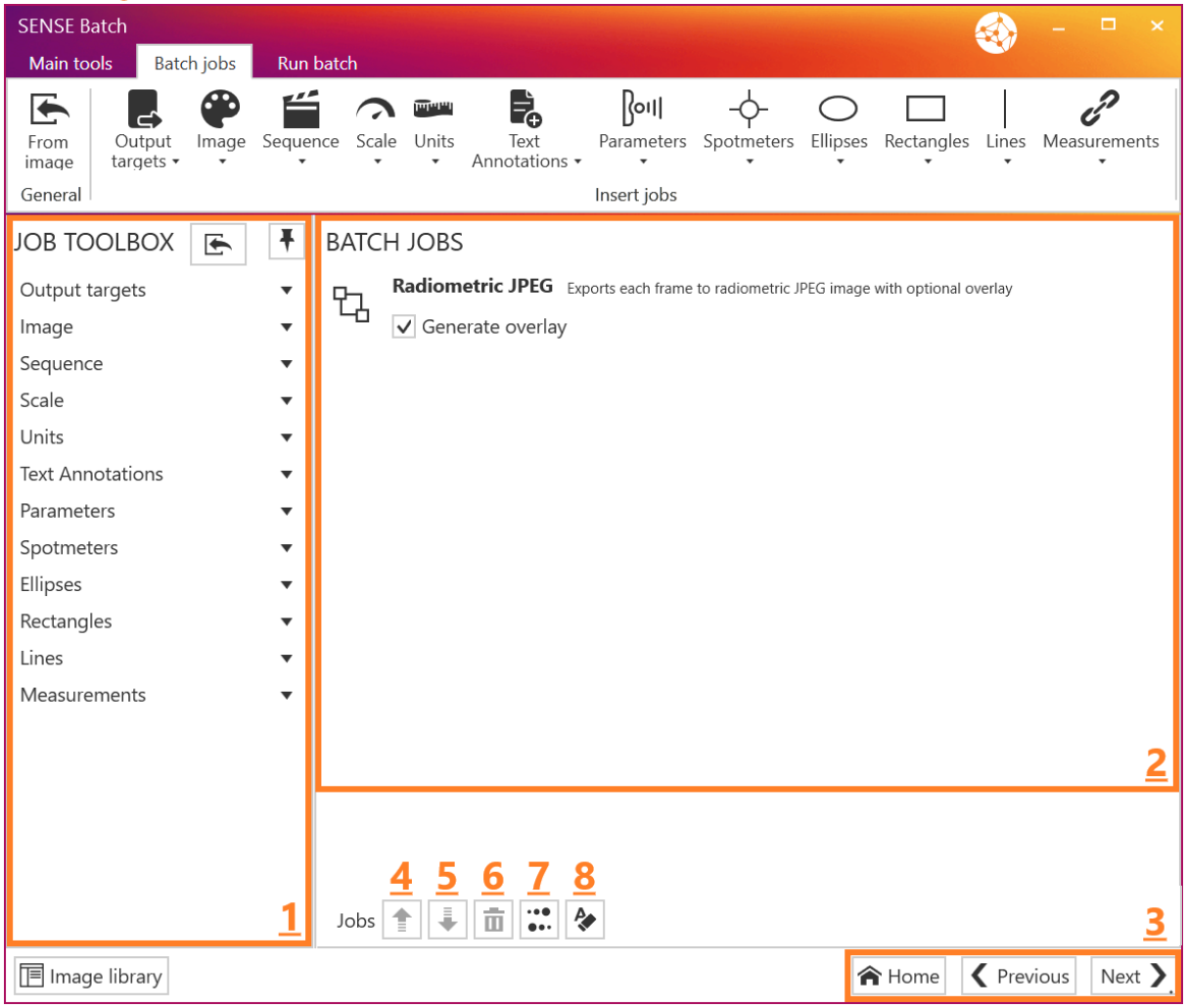
4.2.1. General

This screen allows user to choose outputs and jobs user may want to work with.

1) Add outputs targets to generate required file format from thermogram e.g., AVI, CSV, Radiometric JPEG
2) Add jobs e.g., custom palette, isotherms or text annotations to customize user file

To make batch work properly it should have at least one output.

4.2.2. Figure



4.2.3. Explanation

1) Job Toolbox area
    a) Output targets:
        i) Default overlay – export each frame to non-radiometric overlay image with default settings
        ii) Radiometric JPEG – export each frame to radiometric JPEG with optional overlay
        iii) Export to CSV – export each image/measurement to CSV format
        iv) Create AVI (MJPEG) - add each image/frame to AVI/MJPEG encoder which results in a video when batch is done

v) Custom quality overlay – export each frame to non-radiometric overlay image with custom size, quality and encoder
vi) Map – extract GPS location from thermal images and generate map
vii) Extract visual image – extract visual image (full visual image or aligned subpart)
viii) Extract thermal image – extract thermal image (full thermal image or aligned subpart)
ix) Profile – generate profile plot from thermal image lines
x) Histogram – generate histogram plot from whole thermal image or selected area
xi) Export GPS data – export GPS data from each image to CSV format

b) Image:
i) Palette – set the image color palette
ii) Fusion – change the fusion mode on the image
iii) Fusion alignment – adjust fusion alignment relative to current pan X and Y values
iv) UltraMax – convert to UltraMax for improved image quality
v) Isotherm – set the image isotherm
vi) Alarm – set the image alarm
vii) Clear isotherms – clear the image isotherms
viii) Zoom factor – set the zoom factor on the image
ix) Notes – set the image note text
x) Color distribution – set the color distribution method on the image
xi) Sketch – change sketch image with an option to enable/disable
xii) Rotate – rotate the image by specified angle

c) Sequence:
i) Extract sequence frames – extract all frames from a radiometric sequence and process them using jobs below

d) Scale:
i) Scale minimum – set the scale lower limit
ii) Scale maximum – set the scale upper limit
iii) Set auto scale – find the automatic scale limits and apply those

e) Units:
i) Temperature unit – set the temperature unit on the image
ii) Distance unit – set the distance unit of the image

f) Text annotations:
i) Add/update text annotation – add or update the text annotation of given key with a new value
ii) Rename text annotation – rename the key (label) for text annotation to a new provided one
iii) Remove text annotation – find matching text annotation (by label or value) and remove it
iv) Clear text annotations – remove all text annotations from the image

g) Parameters:
i) Emissivity – set the emissivity parameter of the image
ii) Reflected temperature – set the image reflected temperature parameter
iii) Reference temperature – set the image reference temperature parameter
iv) Distance – set the distance object parameter of the image
v) Atmospheric temperature – set the atmospheric temperature parameter on the image

vi) External optics temperature – set the external optics temperature
vii) External optics transmission – set the external optics transmission
viii) Relative humidity – set the image relative humidity parameter

h) Spotmeters:
   i) Minimum spotmeter – add a spotmeter measurement located at the coldest spot of the image
   ii) Maximum spotmeter – add a spotmeter measurement located at the hottest spot of the image
   iii) Add spotmeter – add a spotmeter measurement at the X and Y position in the image
   iv) Clear spotmeters – clear all spotmeter measurements from the image
i) Ellipses:
   i) Minimum circle – add an ellipse measurement located around the coldest stop of the image
   ii) Maximum circle – add an ellipse measurement around the hottest spot of the image
   iii) Add ellipse – add an ellipse measurement located at X, Y with width and height
   iv) Clear ellipses – clear all the ellipse measurements from the image
j) Rectangles:
   i) Minimum square – add a rectangle measurement around the coldest spot of the image
   ii) Maximum square – add a rectangle measurement located at the hottest spot of the image
   iii) Add rectangle – add a rectangle measurement located at X, Y with width and height
   iv) Clear rectangle – clear all the rectangle measurements from the image
k) Lines:
   i) Add line – add a line measurement located at X, Y. Width and height describes distance between start point and target point
   ii) Min. to max. line – add a line measurement connecting coldest and hottest spots of the image
   iii) Horizontal line – add a horizontal line measurement across entire image
   iv) Vertical line – add a vertical line measurement across entire image
   v) Clear lines – clear all line measurements from the image
l) Measurements:
   i) Rename measurement – rename the measurement to the new provided value
   ii) Markers settings – change the visibility of markers and values for all measurements
   iii) Clear all measurements – clear all measurements from the image
   iv) Add delta – add delta measurement
   v) Clear deltas – remove all delta measurements from the thermal image
m) Create jobs from thermal image - import jobs from the thermal image

2) Job list and configuration
3) Navigation panel
4) Move selected Job up in the list
5) Move selected Job down in the list

6) Remove selected Job from the list
7) Reverse Jobs order
8) Clear the list of Jobs

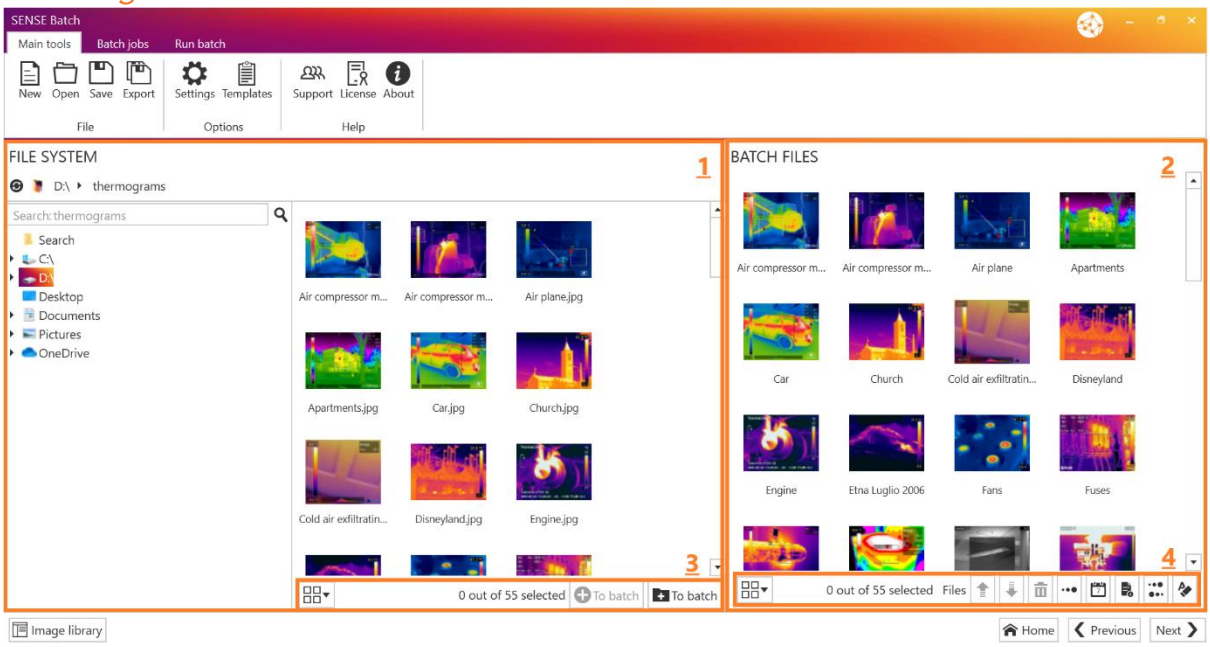
4.3. Image selection screen

4.3.1. General

This screen allows to choose images to be batch-processed. Browse for thermal files. Make last changes before processing them all.

Note: SENSE Batch does not interfere with user files. Selecting and dragging image files does not copy them. It only references them; removing the images from the list does not delete them from user disk.

4.3.2. Figure



4.3.3. Explanation

1) Folder panel
2) Selected images
3) Folder panel navigation area
    a) Change folder view
    b) Add selected images to batch processing
    c) Add folder to batch processing
4) Selected images navigation area
    a) Change selected images view
    b) Move selected file up in the list
    c) Move selected file down in the list
    d) Remove selected image(s) from the list
    e) Sort files by name
    f) Sort files by date and time
    g) Reverse files order
    h) Clear the list of files (this does not remove the file(s) from disk)

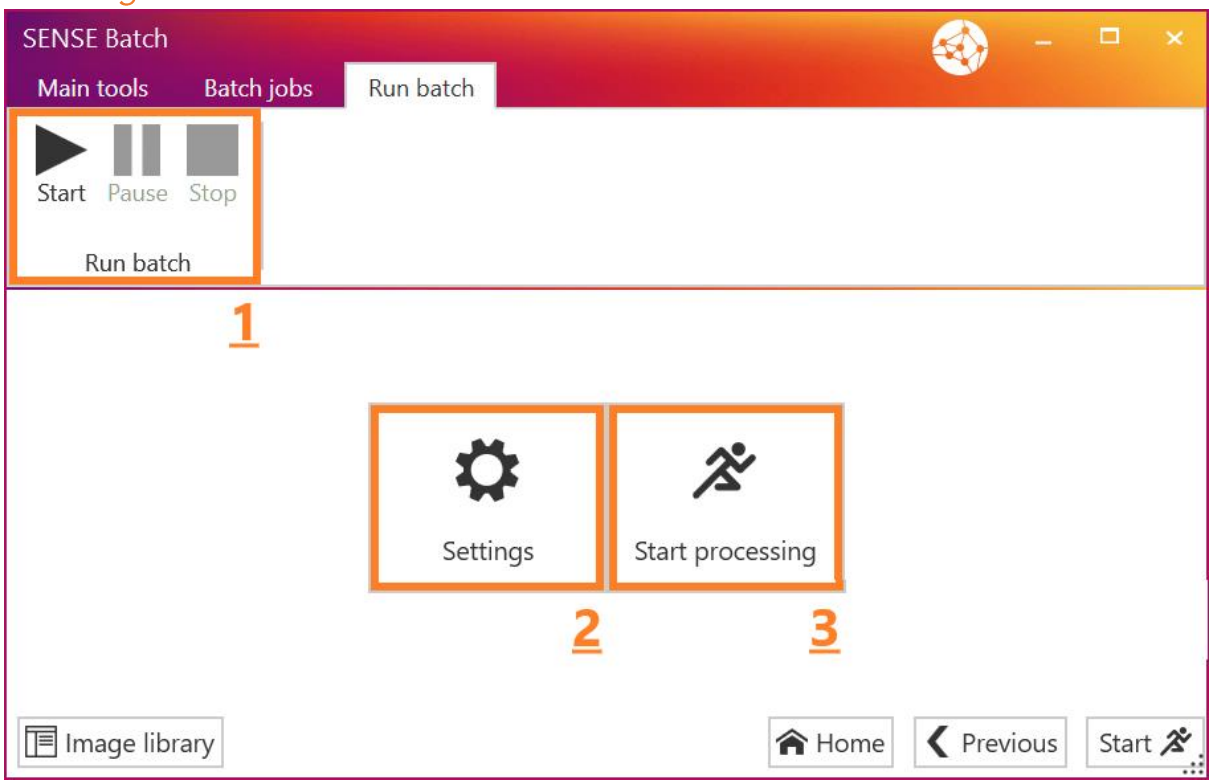
4.4. Processing screen

4.4.1. General

This screen is the last step before processing users work. Files and jobs are selected and ready to process. Overlay may be altered by clicking on settings button (2).

When processing will start, progress will be shown on the screen. After processing files are being output to folder.

4.4.2. Figure



4.4.3. Explanation

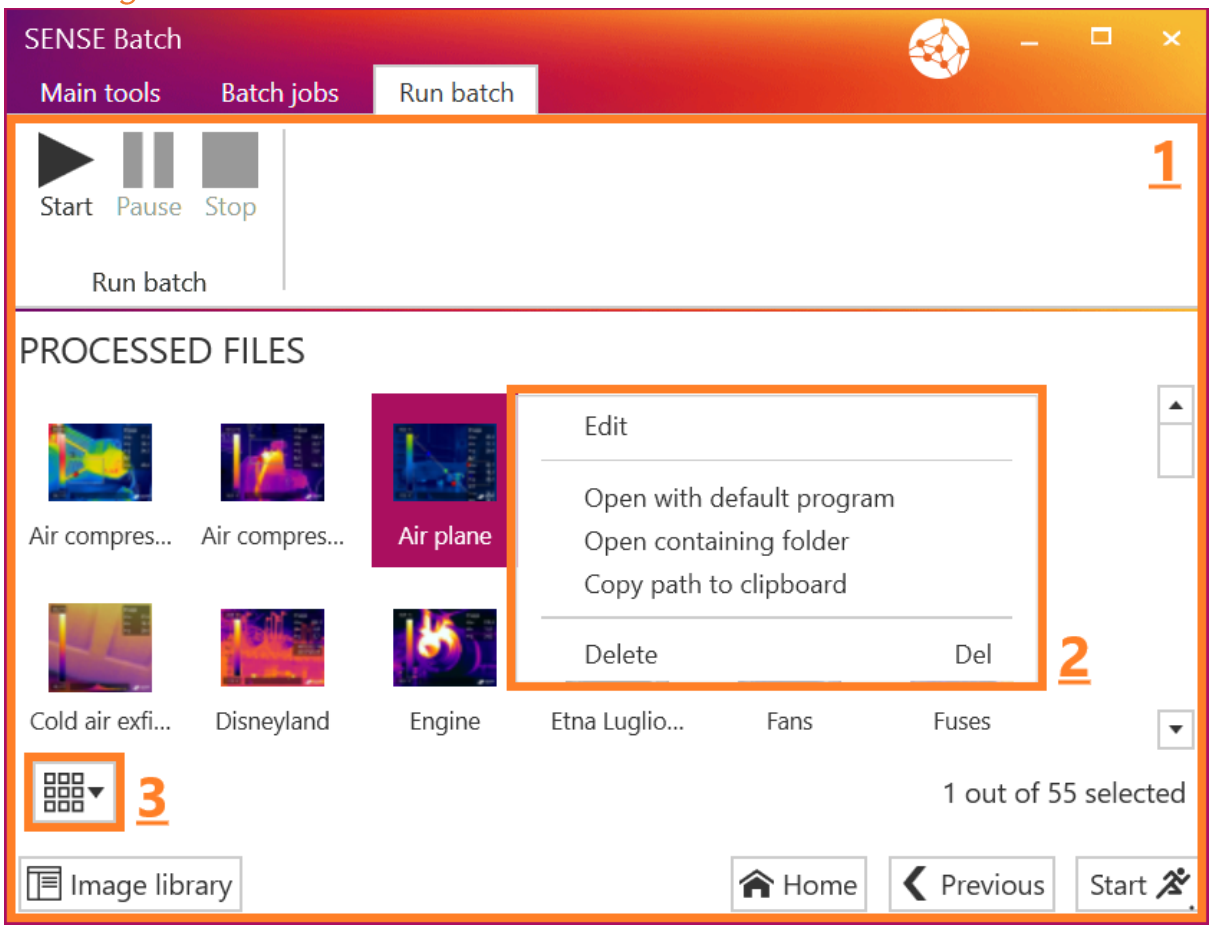
1) Execution toolbar
    a) Control batch execution by using start, pause and stop buttons
2) Settings
    a) Open settings screen to alter overlay settings
3) Start processing
    a) While batch is processing, the jobs or files inside the batch cannot be altered

4.5. Processed files screen

4.5.1. General

This screen shows user final work with files (thermal images, videos, CSVs). At this stage, outputs, jobs and overlay has been applied to user files.

4.5.2. Figure



4.5.3. Explanation

Processed files area.

1) Double click on the image and view it / edit it
2) Change the icon size by using the button in the lower left corner
3) Open containing folder by using context menu

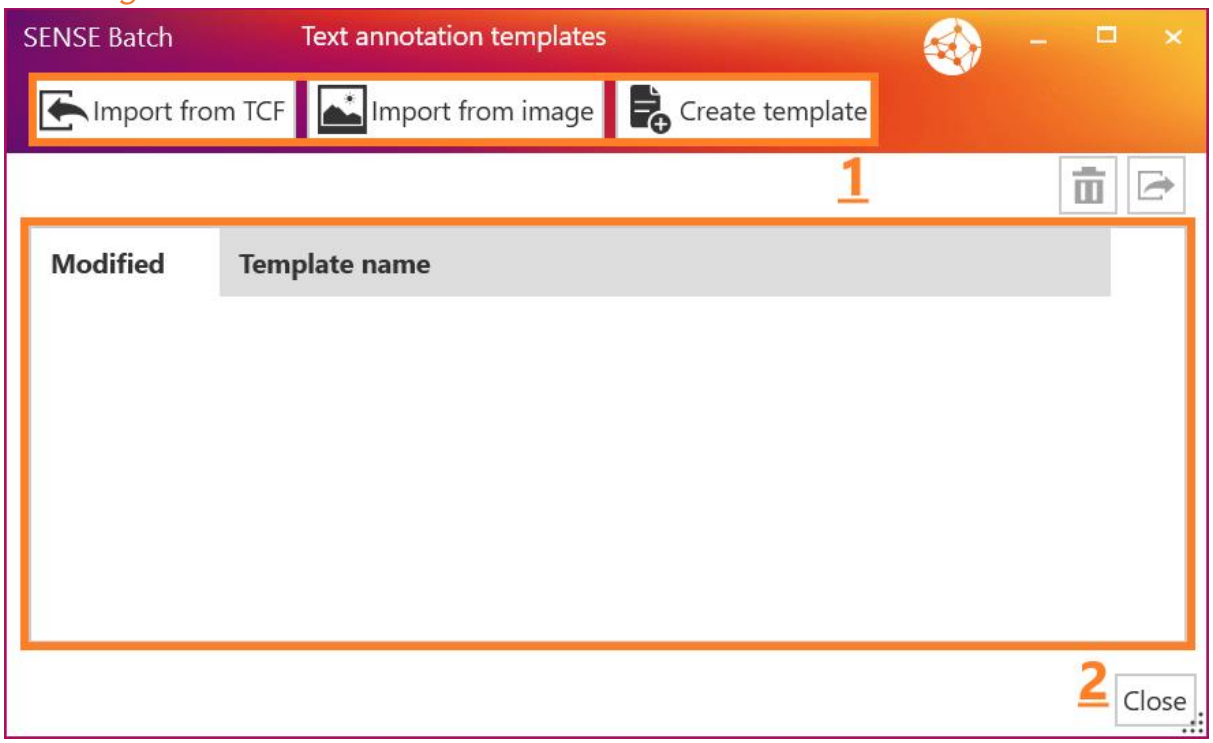
4.6. Templates screen (text annotation templates)

4.6.1. General

Text annotation template is textual information about something that is embedded in an image. It makes reporting and post-processing more efficient and provides essential information about the image, e.g., conditions, photos, information about where an image is taken.

Text annotation template icon can be found in main screen application toolbar.

4.6.2. Figure



4.6.3. Explanation

1) Template toolbar
    a) Import text annotation template from Text Crafter File
    b) Import text annotations template from a thermal image
    c) Create new template
2) Existing template area
    a) Click on existing template to edit it

5. Editing images manually

5.1. Image editor

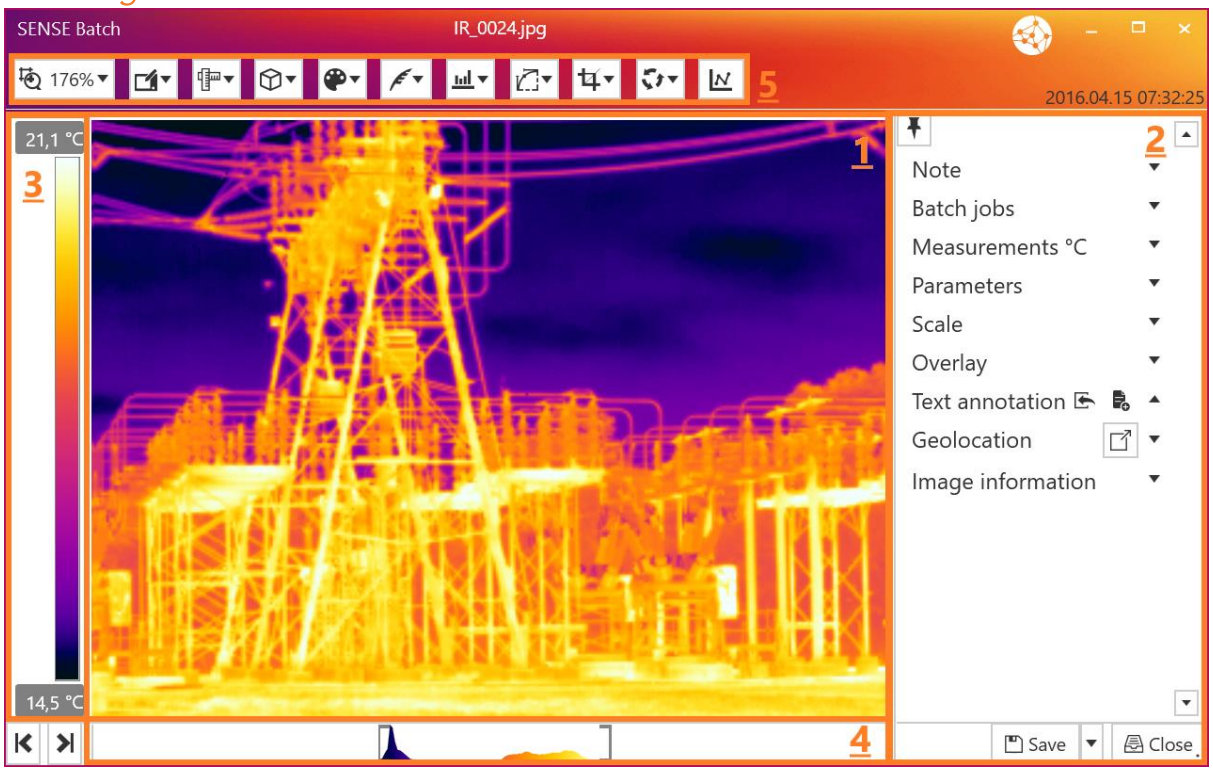
5.1.1. General

SENSE Batch software contains an embedded image editor. It is capable of editing thermal images and sequences (videos). It contains some unique features:

1) Fusion alignment
2) Sketch
3) Custom palette
4) Isotherm coverage
5) Measurements including polygons and magic wand
6) Shapes
7) Auto adjust functions
8) Crop and rotation

The editor supports editing thermal images (Radiometric JPEG, FFF), sequences (SEQ, CSQ, ATFV) and displaying visual images (JPEG, PNG, BMP, TIFF, ATFI). Later in this manual, thermal image editing will be described.

5.1.2. Figure



5.1.3. Explanation

1) Edited thermal image
2) Image information and settings panel:
    a) Notes
    b) Voice comments
    c) Batch jobs
    d) Thermal fusion
    e) Measurements
    f) Sensor readings
    g) Parameters
    h) Scale
    i) Overlay
    j) Text annotation
    k) Geolocation
    l) Image information
3) Temperature scale
4) Temperature span and level control
5) Toolbar

5.2. Toolbar

5.2.1. Figure

5.2.2. Explanation

1) Zoom - fit to window, actual size and predefined zoom setting
2) Sketch
3) Add measurement
    a) Spotmeter
    b) Line
    c) Rectangle
    d) Ellipse
    e) Delta
    f) Polygon
    g) Magic wand
4) Add new shape
5) Select palette
6) Isotherms control
7) Color distribution
8) Auto adjust control
9) Crop image
10) Image rotation
11) Fusion modes
12) Filters
13) Show profile plot

5.3. Adding Sketch

5.3.1. General

One can add custom sketch image on top of thermal image. It will be visible in most of the software supporting thermal images. One of the use cases is embedding users own logo.

5.3.2. Procedure

Follow this procedure:

1. In the *Image Editor* window, select *Sketch*
2. Click *Replace Sketch*
3. Browse for *Sketch* image

Note: It is important to add sketch image with similar proportions as the thermal image (usually 4:3). Use external bitmap editor to achieve best results, taking into account the image orientation (vertical or horizontal).

5.4. Working with measurement tools

5.4.1. General

One can add one or more measurements tools to the image, e.g., spotmeter, line, ellipse or rectangle. Every measurement has its own properties.

5.4.2. Adding a measurement tool

5.4.2.1. Procedure

Follow this procedure:

1) In the Image Editor window, click a measurement tool icon
2) To add the measurement tool on the image, click on the location where the measurement tool is meant to be placed

5.4.3. Moving / resizing measurement tool

5.4.3.1. General

Existing measurement tools can be moved and resized

5.4.3.2. Procedure

Follow this procedure:

1) Hover the mouse cursor over the measurement tool on the image
2) Click on it
3) Now one can drag it in wanted place or resize to wanted size

5.4.4. Duplicating and exporting measurement tools to CSV format

5.4.4.1. General

Existing measurement tools can be duplicated and exported to CSV

5.4.4.2. Procedure

Follow this procedure:

1) Hover the mouse cursor over the measurement tool on the image
2) Right click on it
3) Now choose to create a duplicate (CTR+D shortcut) or export selected measurements to CSV format

5.4.5. Deleting a measurement tool

5.4.5.1. General

Delete any measurement tools that user have laid out on the image

5.4.5.2 Procedure

Follow this procedure:

1) Hover the mouse cursor over the measurement tool on the image
2) Right-click on it
3) Measurement tool settings will be displayed
4) Click on "Remove"

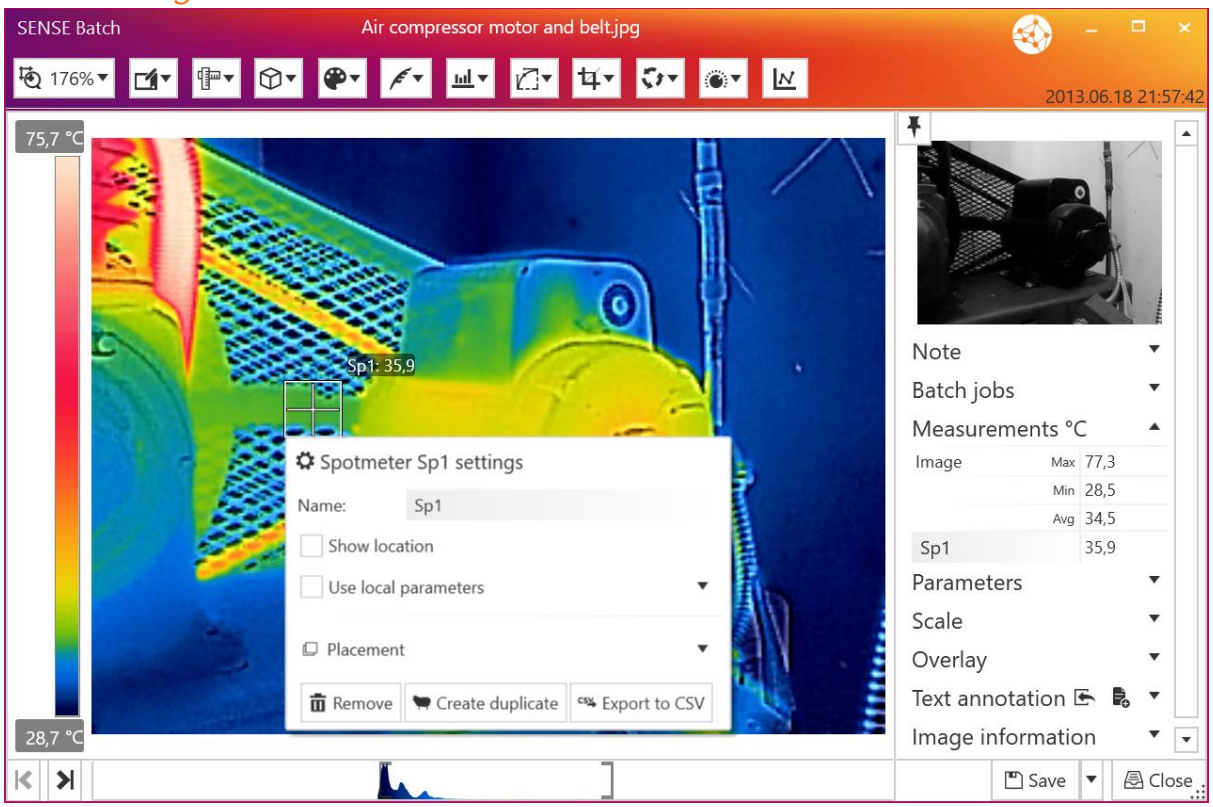
5.4.6. Setting up measurement tools

5.4.6.1. General

Every measurement tool has its own specific setting that can be modified. Settings can be shown by right-clicking on the measurement tool.

5.4.6.2 Spotmeter

5.4.6.2.1. Figure

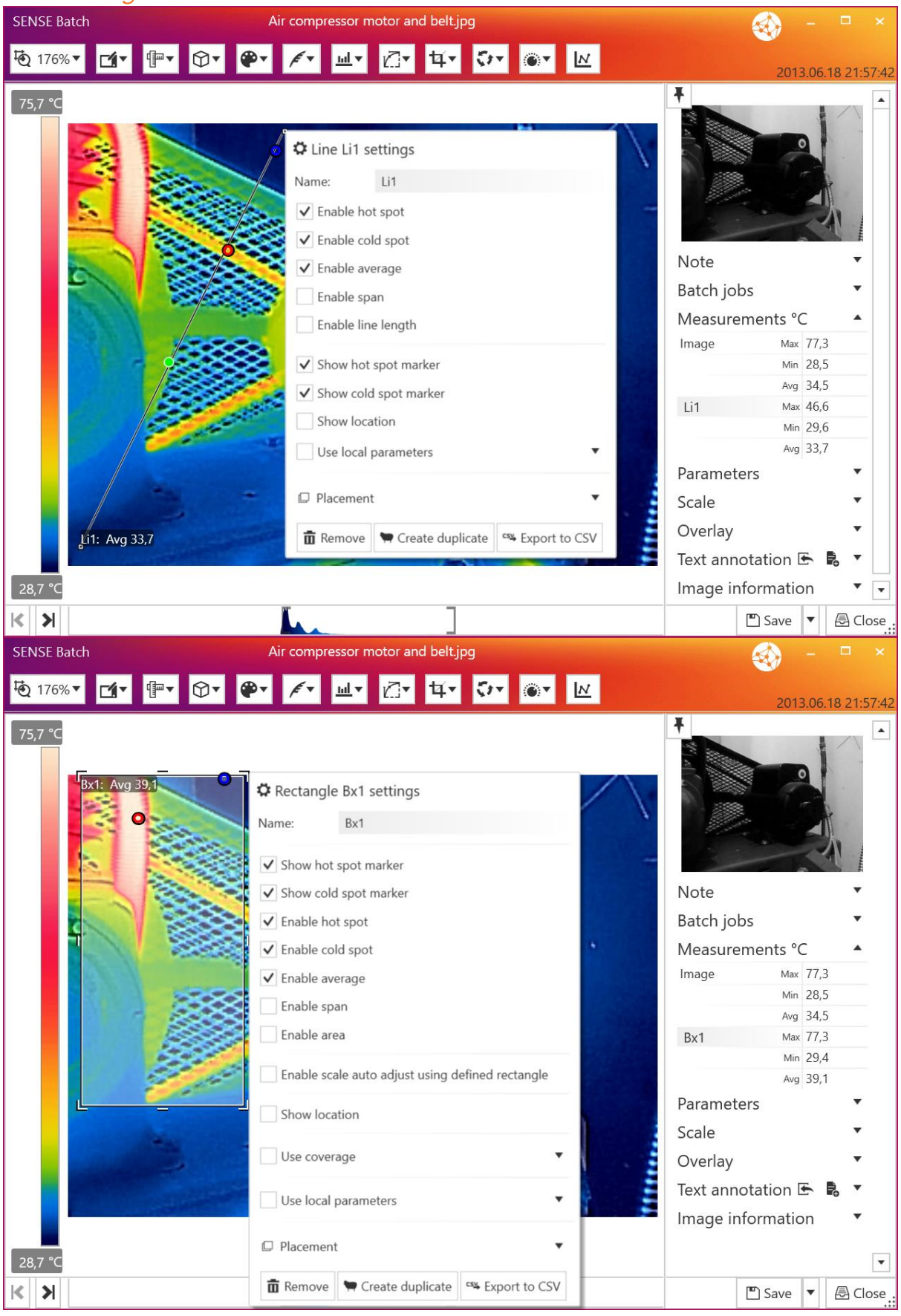


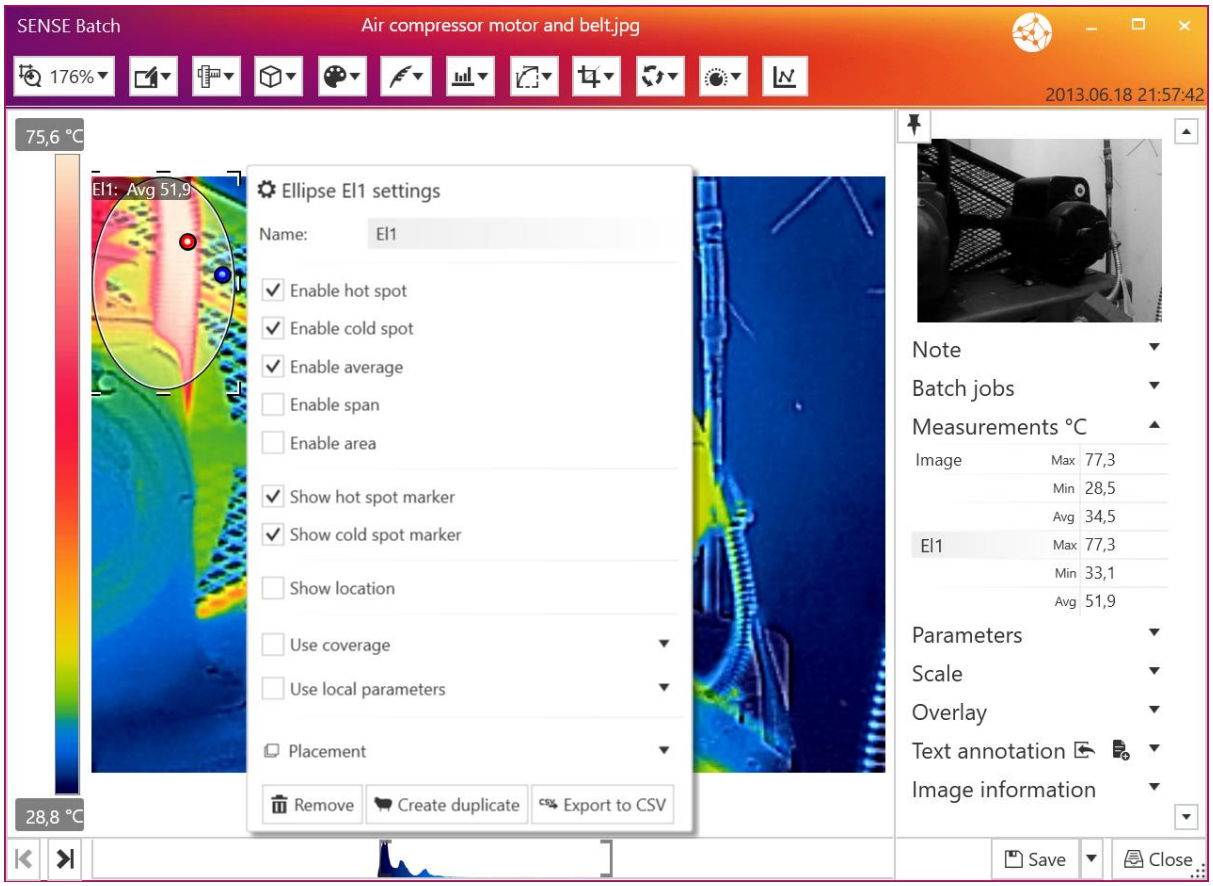
5.4.6.2.2. Explanation

1) Show location – show/hide coordinates of the spotmeter
2) Use local parameters – use parameters for specific measurement tool

5.4.6.3 Line, Rectangle, Ellipse

5.4.6.3.1 Figure





5.4.6.3.2. Explanation

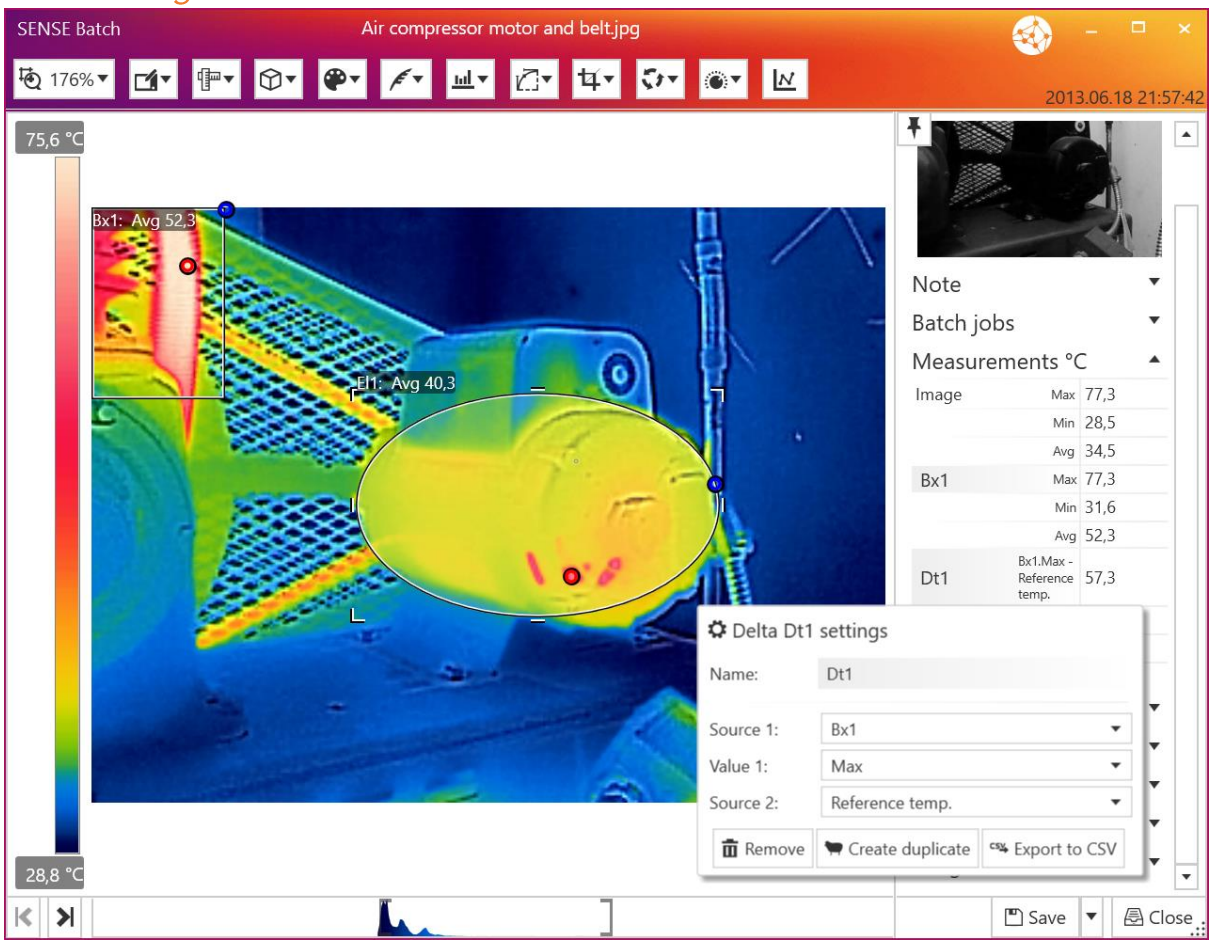
1) Enable hot spot – enable/disable spot that has highest temperature on the measurement
2) Enable cold spot – enable/disable spot that has lowest temperature on the measurement
3) Enable average – enable/disable average temperature on the measurement
4) Enable span – enable/disable temperature span on the measurement
5) Enable line length – enable/disable line length
6) Show hot spot marker – show/hide marker for hot spot
7) Show cold spot marker – show/hide marker for cold spot
8) Show location – show/hide coordinates of the measurement tool
9) Use coverage – show/hide coverage and apply isotherms in the selected area
10) Use local parameters – use parameters for specific measurement tool
11) Placement – use to bring to front, bring on top, send to back and send to bottom the measurement on an image
12) Create duplicate – create duplicate of the measurement
13) Export to CSV – export selected measurements to CSV format

5.4.6.4. Delta

5.4.6.4.1. General

Delta is a measurement tool that calculates difference between temperatures of existing measurements or image statistics.

5.4.6.4.2. Figure



5.4.6.4.3. Explanation

Delta has two sources, each of the sources is either a measurement or the reference temperature. If a measurement source is used, then Min/Avg/Max/Value can be selected to calculate the difference.

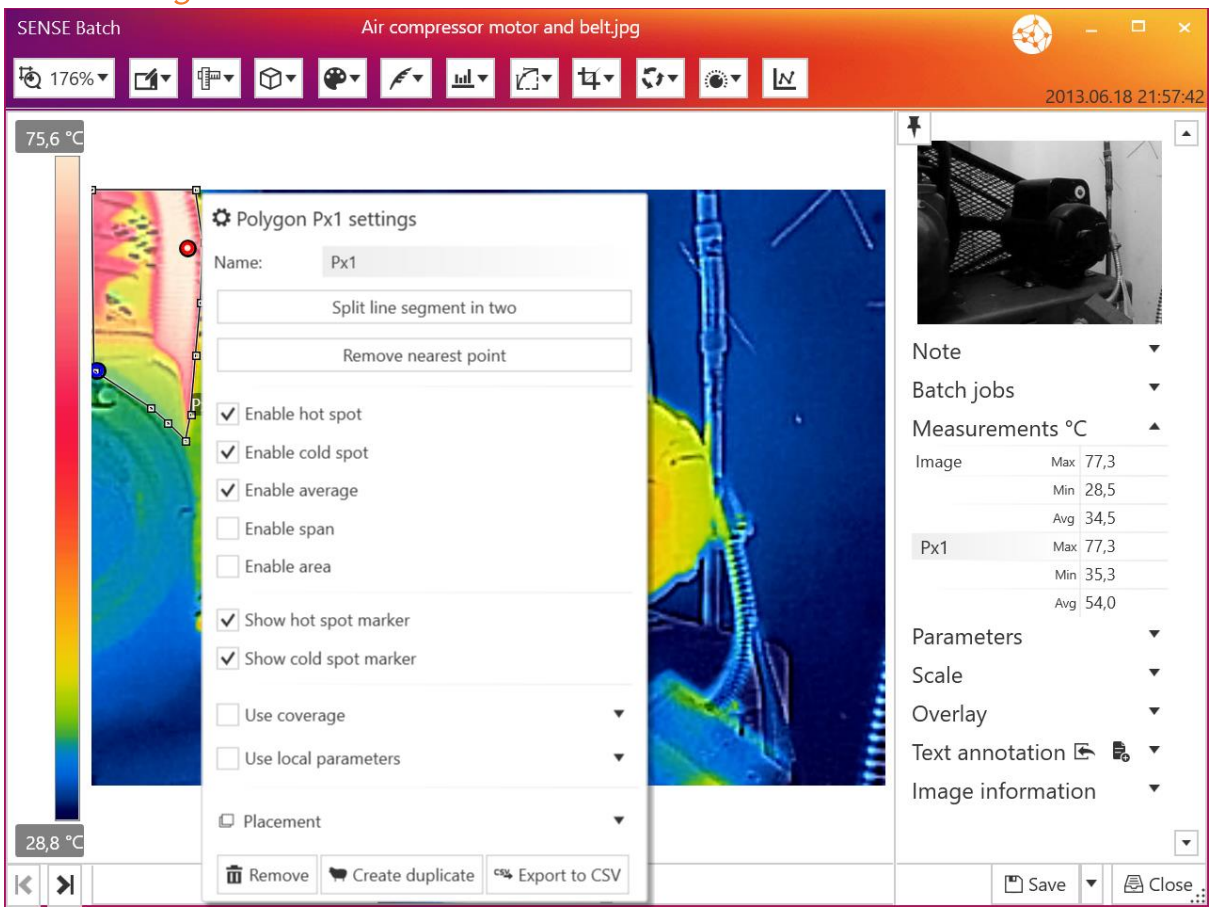
1) Source – choose measurement source tool to calculate the delta value (or reference temperature)
    a) In this particular situation one can choose from two measurements or reference temperature
2) Value – choose which value will be calculated
    a) One can choose from maximum, minimum, average temperature

5.4.6.5. Polygon

5.4.6.5.1. General

A polygon is a measurement tool which calculates, among others maximum, minimum and average temperature. It allows you to adjust the shape for the surface you need to cover

5.4.6.5.2. Figure



5.4.6.5.3. Explanation

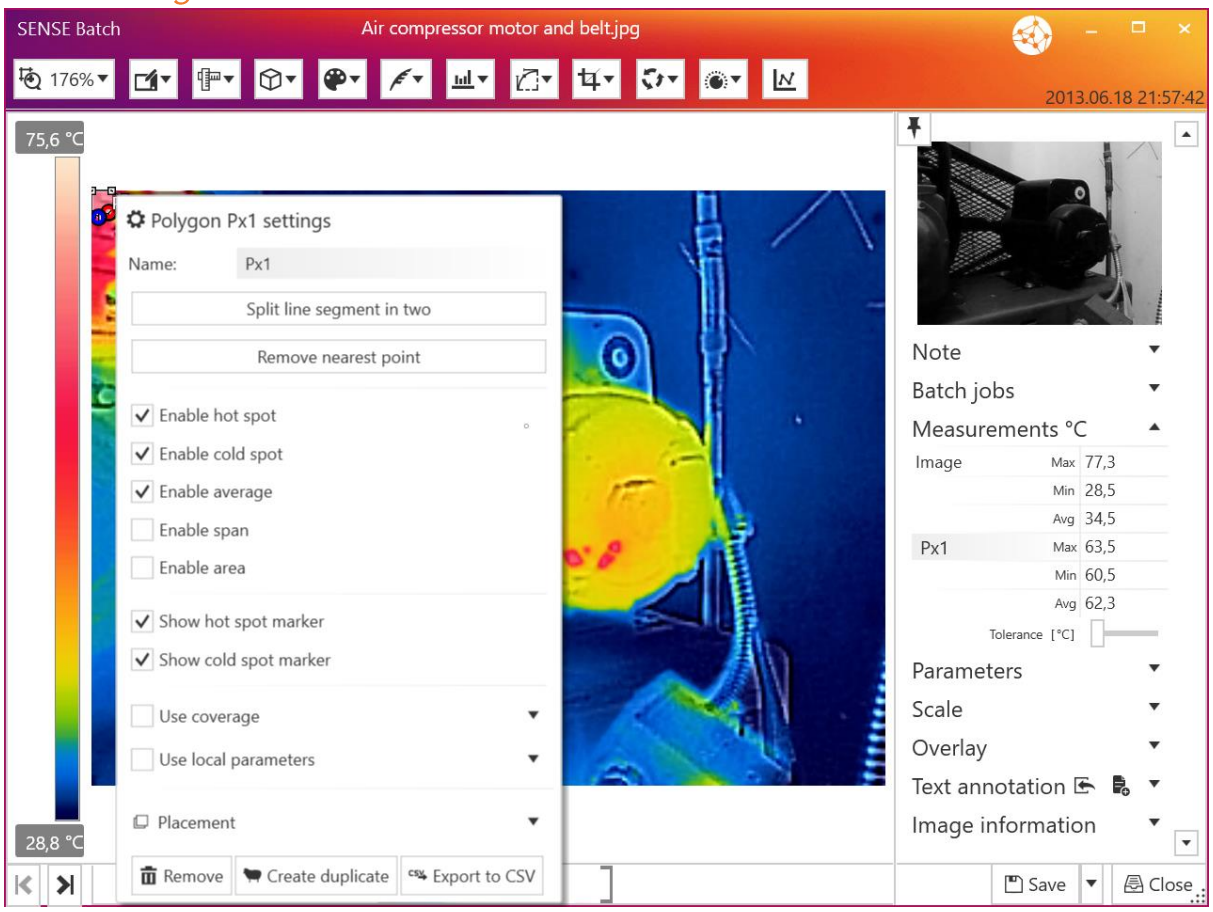
1) Split line segment in two – add point in the middle of a segment
2) Remove nearest point – remove the nearest point to limit the measured area
3) Enable hot spot – enable/disable spot that has highest temperature on the measurement
4) Enable cold spot – enable/disable spot that has lowest temperature on the measurement
5) Enable average – enable/disable average temperature on the measurement
6) Enable span – enable/disable temperature span on the measurement
7) Enable area – enable/disable dimensions of the marked area
8) Show hot spot marker – show/hide marker for hot spot
9) Show cold spot marker – show/hide marker for cold spot
10) Use coverage – show/hide temperature proportions in percentages (you can adopt isotherms marking area on the picture with a temperature above or below)
11) Use local parameters – use parameters for specific measurement tool
12) Placement – use to bring to front, bring on top, send to back and send to bottom the measurement on an image
13) Create duplicate – create duplicate of the measurement
14) Export to CSV – export selected measurements to CSV format

5.4.6.6. Magic wand

5.4.6.6.1. General

Automatically adds polygon adjusted to measured area in certain point, tolerance may be adjusted

5.4.6.6.2. Figure



5.4.6.6.3. Explanation

1) Split line segment in two – add point in the middle of a segment
2) Remove nearest point – remove the nearest point to limit the measured area
3) Enable hot spot – enable/disable spot that has highest temperature on the measurement
4) Enable cold spot – enable/disable spot that has lowest temperature on the measurement
5) Enable average – enable/disable average temperature on the measurement
6) Enable span – enable/disable temperature span on the measurement
7) Enable area – enable/disable dimensions of the marked area
8) Show hot spot marker – show/hide marker for hot spot
9) Show cold spot marker – show/hide marker for cold spot
10) Use coverage – show/hide temperature proportions in percentages (you can adopt isotherms marking area on the picture with a temperature above or below)
11) Use local parameters – use parameters for specific measurement tool
12) Placement – use to bring to front, bring on top, send to back and send to bottom the measurement on an image

13) Create duplicate – create duplicate of the measurement
14) Export to CSV – export selected measurements to CSV format
15) Tolerance – adjust tolerance of the measurement to ensure that shape is matching desired surface

5.5. Adding shapes

5.5.1 General

Shapes are symbols the user can add to the image and further customize.

5.5.2. Adding and customizing shapes

Follow this procedure:

1) In the *Processed Files* window, double-click an image
2) In the *Image Editor* window, select *shape* icon
3) Select the desired shape from multiple categories (*arrows*, *shapes*, *comments*, *alerts* and *emoticons*), and it will appear on the image
4) Customize size and position of the chosen shape by holding by its edge or dragging it on the image
5) Right click on the shape to:
    a) Choose the shape fill color
    b) Choose the shape border color
    c) Adjust the border thickness
    d) Rotate the shape
    e) Add and customize text on the shape
        i) Change font color
        ii) Change font family
        iii) Change font size
        iv) Apply font italic
        v) Apply font bold
        vi) Underline text
        vii) Strikethrough text
        viii) Align text
    f) Choose the placement of the shape
    g) Create a duplicate (CTR+D shortcut)
    h) Delete the shape

5.6. Changing a palette

5.6.1. General

Use one of predefined palettes or one can browse for a custom palette and use it with image or sequence.

5.6.2. Procedure

Follow this procedure:

1) In the *Image Editor* window, select a *Palette* icon
2) Select a palette

5.7. Working with isotherms

5.7.1. General

The isotherm tool applies a contrasting color to all pixels with temperatures above, below, or between set of temperatures.

5.7.2. Setting up isotherms (above, below)

5.7.2.1. General

An isotherm of the type *Above* and *Below* will colorize areas with a temperature above or below a set temperature.

5.7.2.2. Procedure

Follow this procedure:

6) In the *Processed Files* window, double-click an image
7) In the *Image Editor* window, select an isotherm icon
8) Select one of following:
    a) Above
    b) Below
9) Select a colour to colorize area with a temperature above or below
10) In the right pane, there will be *Isotherm* section. User is able to set limit for temperatures
11) Use a slider located at the bottom edge of the editor, under the histogram, to manually adjust isotherms

5.7.3. Setting up isotherms (interval)

5.7.3.1 General

An isotherm of the type *Interval* will colorize areas with a temperature between two set temperatures.

5.7.3.2. Procedure

1) In the *Processed Files* window, double-click an image
2) In the *Image Editor* window, select an isotherm icon
3) Select *Interval*
4) Select a colour to colorize area with set temperatures
5) In the right pane, there will be *Isotherm* section. User is able to set limits for temperatures

5.7.4. Alarms

5.7.4.1. General

Alarms assist the user in marking the area in the image where *Humidity* and *Insulation* are above a level chosen by the user.

5.7.4.2. Procedure

Follow this procedure:

1) In the *Processed Files* window, double-click an image
2) In the *Image Editor* window, select an isotherm icon
3) Select *Humidity* or *Insulation*
4) Select a colour to colorize area with a *Humidity* or *Insulation* above a certain level
5) In the right pane, there will be *Isotherm* section. User is able to set limits for *Humidity* or *Insulation*

5.8. Adjusting color distribution

5.8.1. General

Adjust color distribution on thermal image

5.8.2. Procedure

Follow this procedure:

1) In the *Image Editor* window, select the *Color distribution* icon
2) Select one of the following:
    a) Histogram equalization
    b) Signal linear
    c) Temperature linear
    d) Digital detail enhancement

5.9. Auto adjust control

5.9.1. General

Auto adjust control allows for quick distribution of colors on a thermal image based on a scale or defined rectangle and the temperature in the chosen area.

5.9.2. Procedure

Follow this procedure:

1) In the *Image Editor* window, select the *Auto adjust control* icon
2) Select one of the following:
    a) Enable scale auto adjust
    b) Enable scale auto adjust using defined rectangle
        i) Show/hide scale auto adjust rectangle

Note: adjust manually *scale auto adjust rectangle* by dragging by its edge

5.10. Crop image

5.10.1. General

Use crop image function to cut unnecessary part of a thermal image.

5.10.2. Procedure

Follow this procedure:

1) In the *Image Editor* window, select the *Crop image* icon
2) Show/hide crop rectangle
3) Make sure to cover chosen part of a thermal image with the rectangle
4) Confirm by clicking on a "Yes" icon to leave marked part of the image and cut the rest of it
5) Reset to original setting by selecting *Crop image* icon and then *Reset image*

5.11. Image rotation

5.11.1. General

Rotate an image as you wish with a slider or predefined angles\

5.11.2. Procedure

Follow this procedure:

1) In the *Image Editor* window, select the *Image rotation* icon
2) Use a slider, insert an angle manually or select one of the predefined setting

5.12. Filter application

5.12.1. General

Filters allow a user to show subtle elements on the thermal sequence such as gas

5.12.2. Procedure

Follow this procedure:

1) In the *Image Editor* window, select the *Filter* icon
2) Choose a filter from High sensitivity mode or Pixel binning

5.13. Setting Fusion mode

5.13.1. General

Fusion mode provides user a possibility to mix a visual image with thermal image

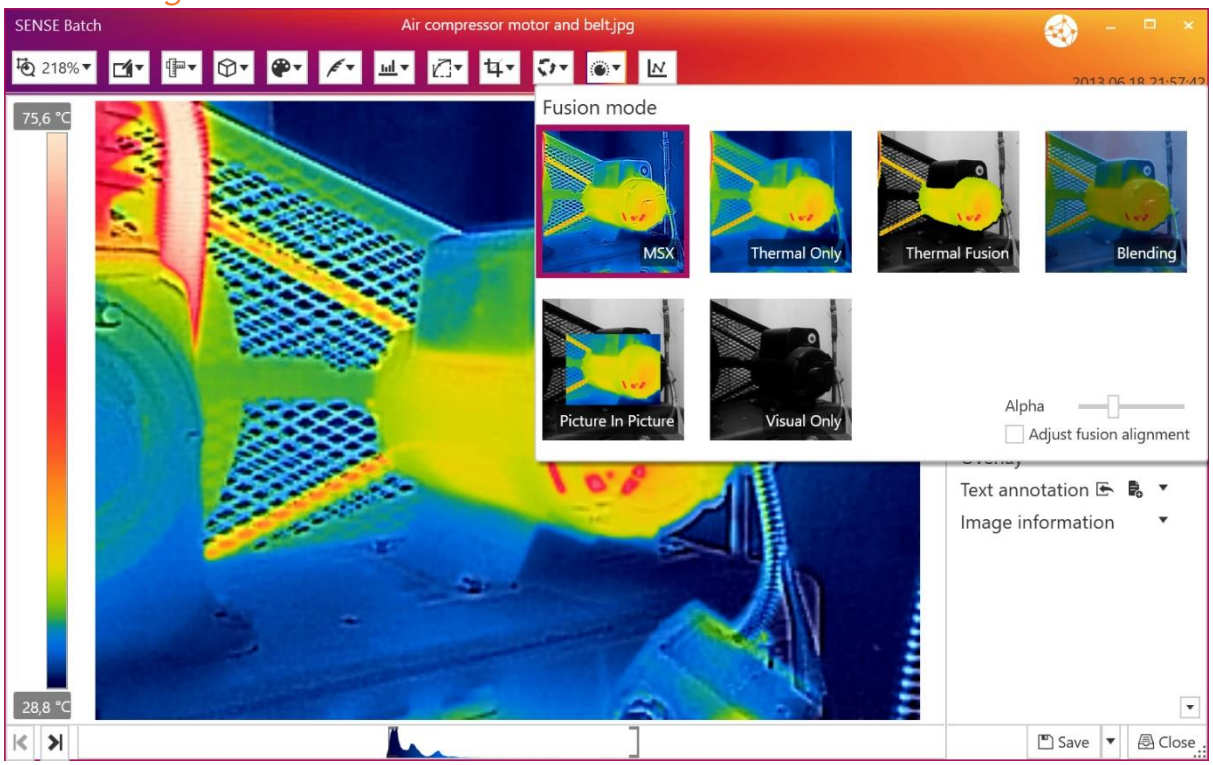
5.13.2. Procedure

Follow this procedure:

1) In the *Image Editor* window, select a *Fusion Mode* icon
2) Select one of the following:
    a) MSX
    b) Thermal Only
    c) Thermal Fusion
    d) Blending
    e) Picture in Picture
    f) Visual Only

5.13.3. MSX

5.13.3.1. Figure

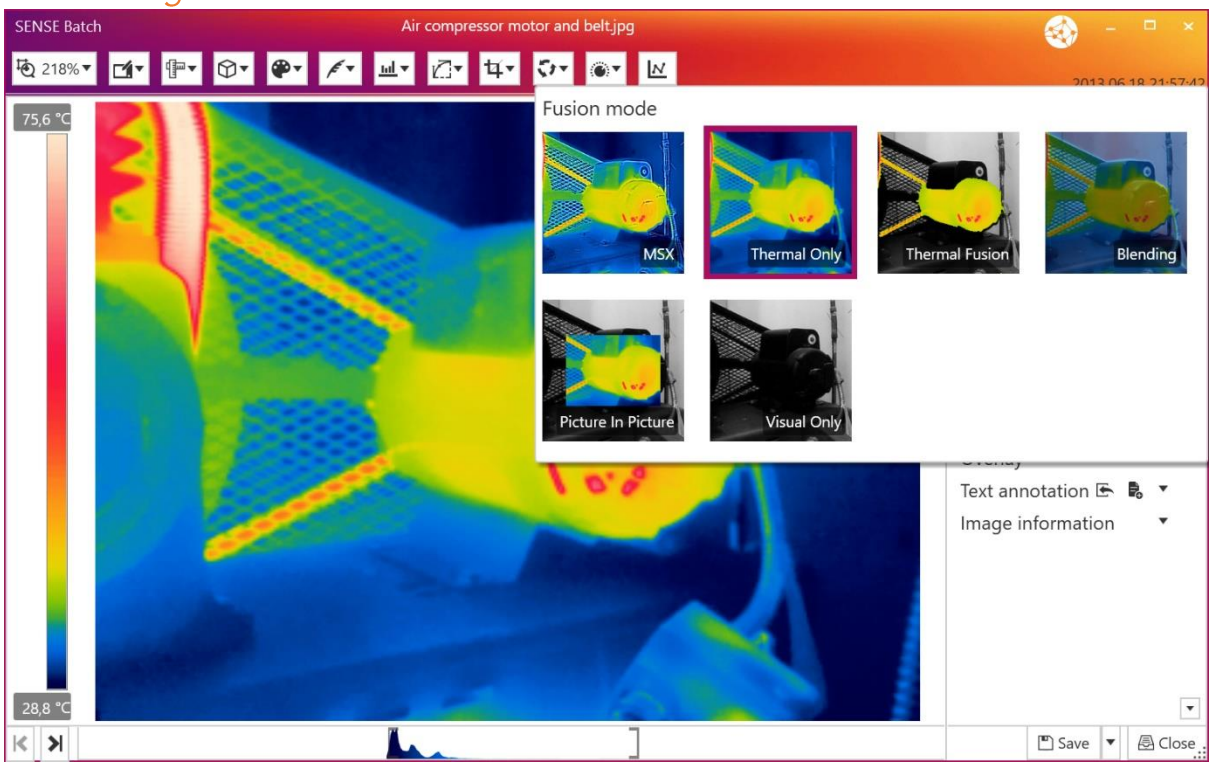


5.13.3.2. Explanation

1) Alpha – show more/less contours of the image
2) Adjust fusion alignment – used for camera alignment problems

5.13.4. Thermal only

5.13.4.1. Figure

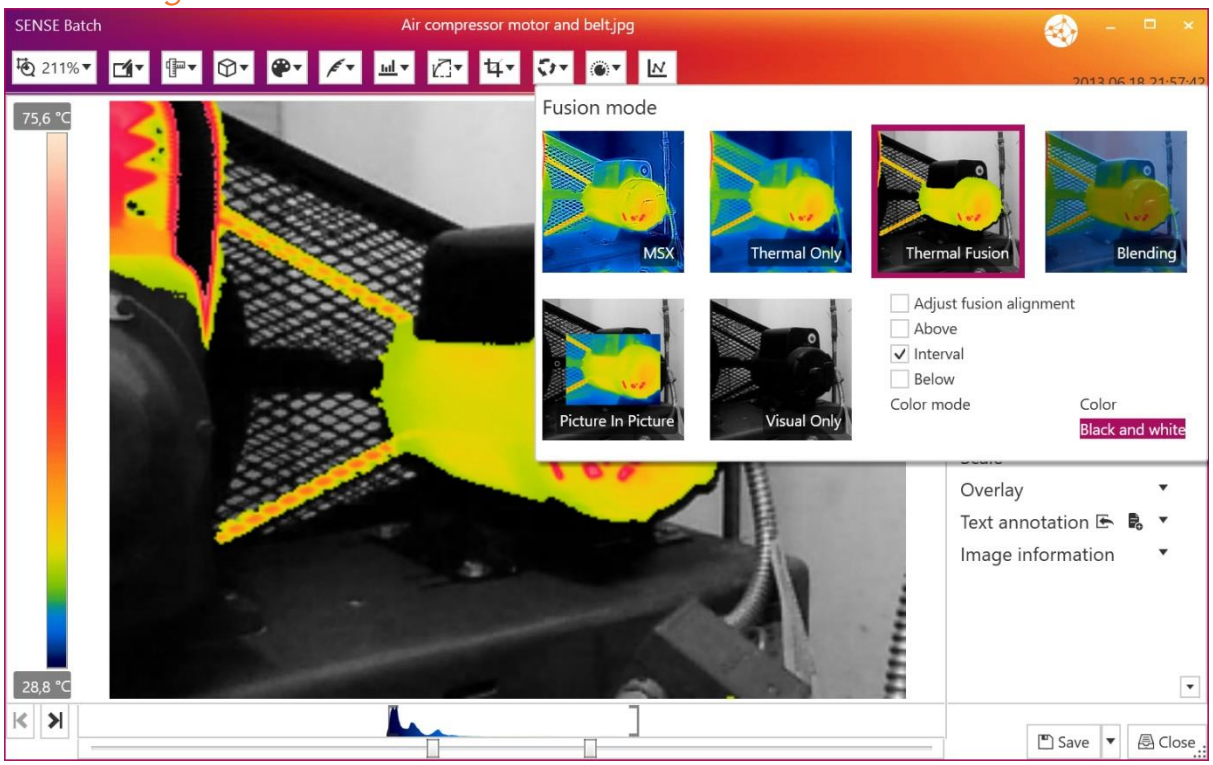


5.13.4.2. Explanation

This mode provides only thermal vision with no additional features.

5.13.5. Thermal fusion

5.13.5.1. Figure



5.13.5.2. Explanation

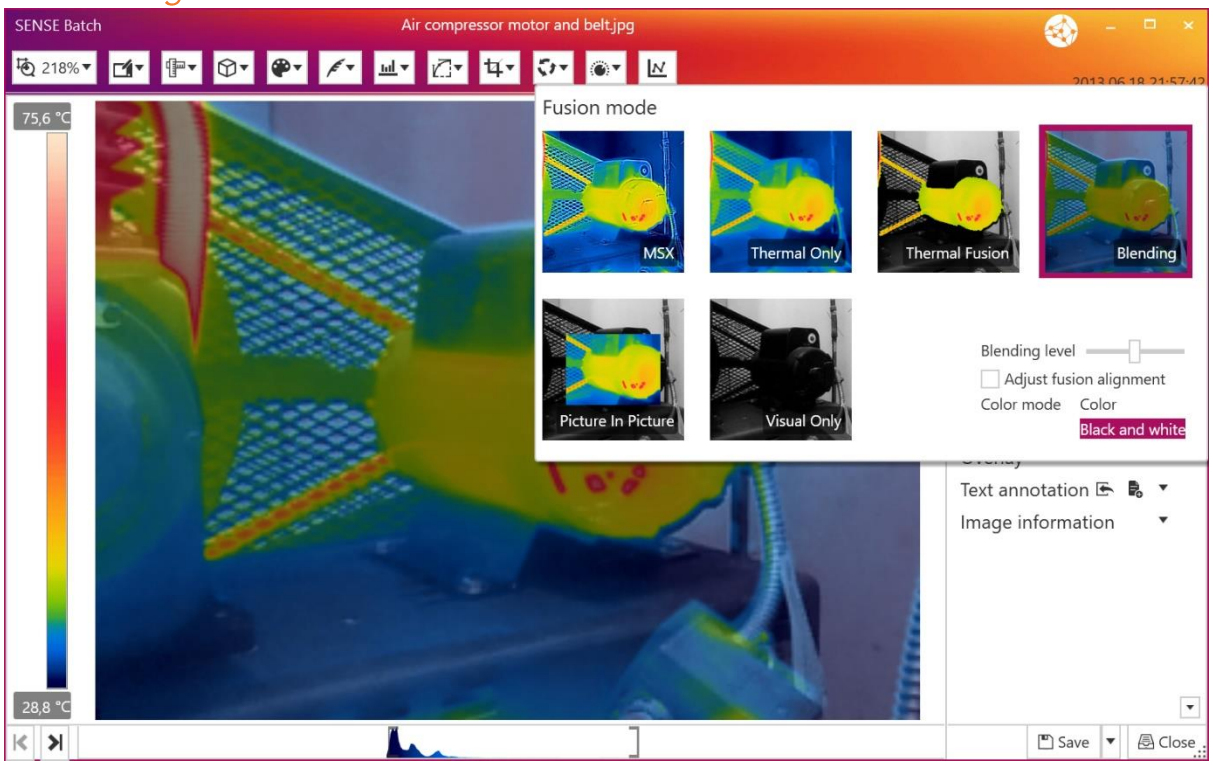
This is mode where one can set min/max temperature for a thermal image. Temperatures which does not consist in set temperatures will not show in thermal view.

1) Adjust fusion alignment – used for camera alignment problems
2) Above – show in thermal view pixels above the chosen temperature
3) Interval – show in thermal view pixels in a range of the chosen temperature
4) Below – show in thermal view pixels below the chosen temperature
5) Color mode – choose between color or black and white mode of the visual image

Note: when fusion mode is selected, a slider will appear at the bottom of the editor, allowing for manual adjustment of the chosen fusion

5.13.6. Blending

5.13.6.1. Figure



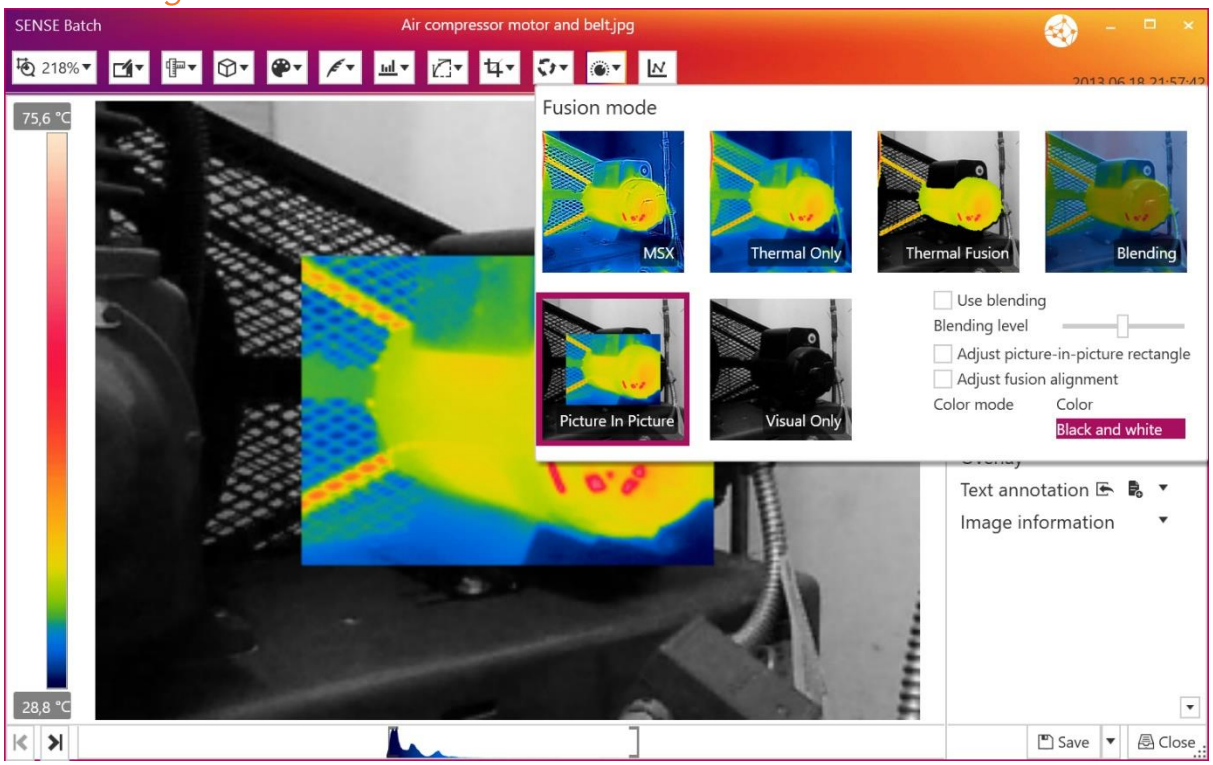
5.13.6.2. Explanation

This is mode where one can mix proportions of thermal and visual view of an image.

1) Blending level – set proportions for thermal and visual view
2) Adjust fusion alignment – used for camera alignment problems.
3) Color mode – choose between color or black and white mode of the visual image

5.13.7. Picture in picture

5.13.7.1. Figure



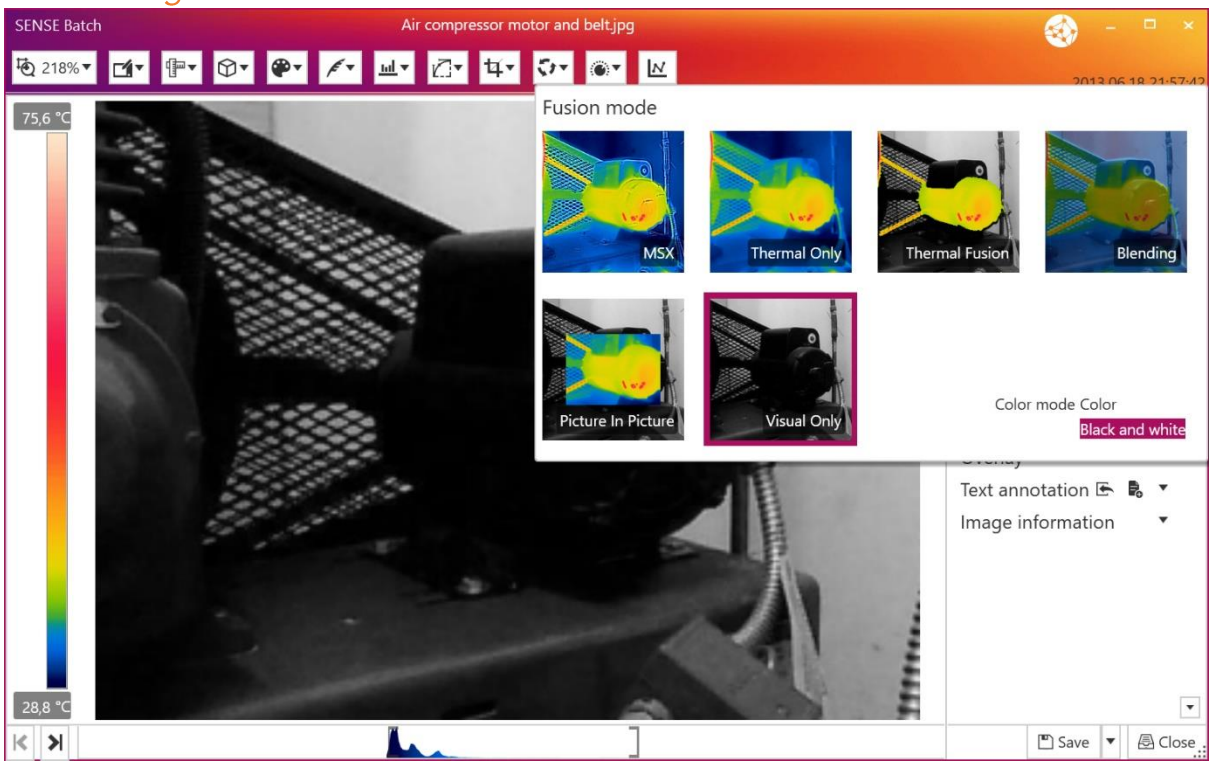
5.13.7.2. Explanation

This mode provides rectangle that shows image in thermal view.

1) Use blending – use blending mode in an image
2) Adjust picture-in-picture rectangle – edit size and place of the thermal rectangle
3) Adjust fusion alignment – used for camera alignment problems
4) Color mode – choose between color or black and white mode of the visual image

5.13.8. Visual only

5.13.8.1. Figure



5.13.8.2. Explanation

This mode provides only visual view.

1) Color mode – choose between color or black and white mode of the visual image

5.14. Fusion Alignment

5.14.1. General

This is a feature that solves camera alignment problems which makes user fusion image look not calibrated. It can be set with coordinates (from job) or manually (in image editor).

Note: Fusion Alignment can be used for: MSX, Thermal Fusion, Blending, Picture in Picture.

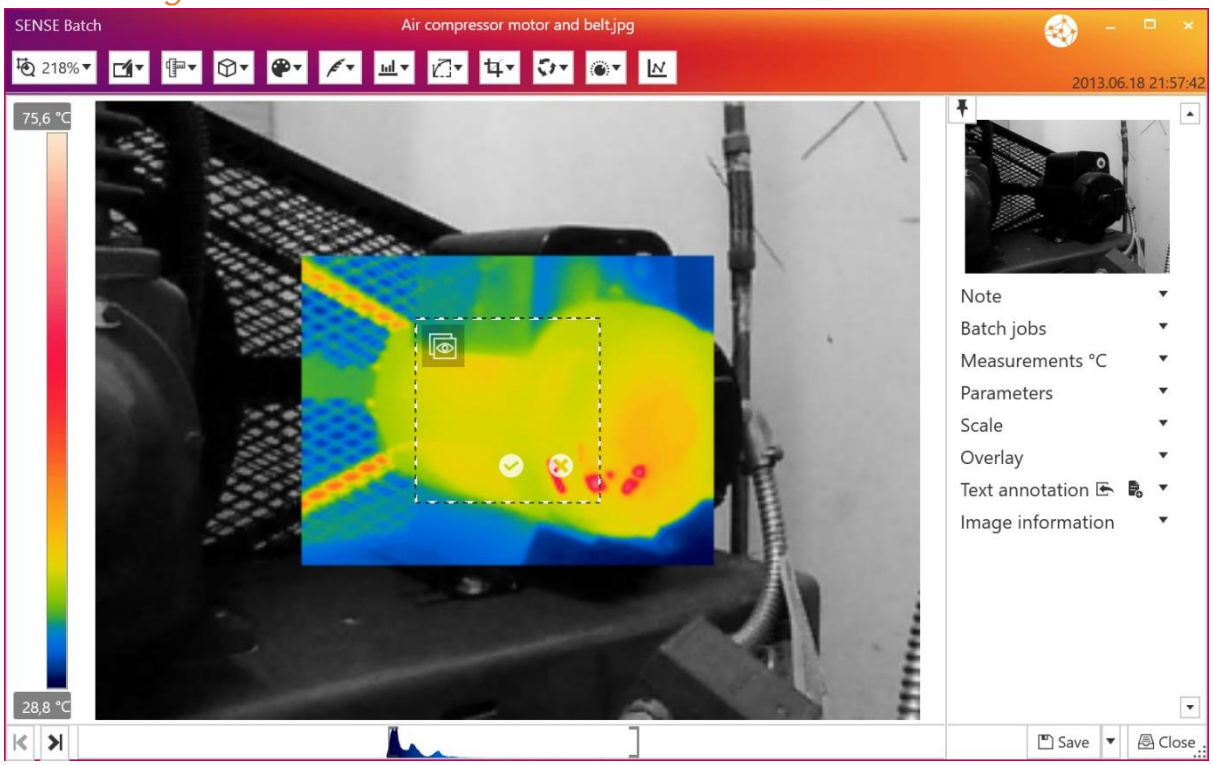
5.14.2. Setting up Fusion Alignment (Batch Job)

5.14.2.1. Procedure

1) In *Batch Jobs Selection Screen*, select *Fusion alignment*
2) Set X and Y parameters to move visual image and fit it with thermal image

5.14.3. Setting up Fusion Alignment (image editor)

5.14.3.1. Figure



5.14.3.2. Procedure

1) In *Image Editor*, select *Fusion mode* icon
2) Select mode
3) Check *Adjust fusion alignment* box
4) On the image will appear *rectangle box*, which can be moved
5) Click and drag the *rectangle* to adjust alignment problem
6) After finished adjustment click on the Check mark

5.15. Templates (text annotation templates)

5.15.1. Creating template

5.15.1.1. General

Text annotation is textual information about something in an image and is constructed of group information pairs – *field* and *value*.

5.15.1.2. Procedure

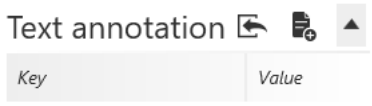
1) In *Start screen* click on *Templates* located in *Application toolbar*
2) Click on *Create template*
3) Enter name for the template
4) Enter *fields* name and *values*
    a) If needed add next *fields* and *values*
5) Click *Save and exit*

5.15.2. Working with text annotations (image editor)

5.15.2.1. General

It is also possible to add and edit text annotations from *Image editor*. Text annotations are located in right pane in *Image editor.*

5.15.2.2. Figure



5.15.2.3. Procedure

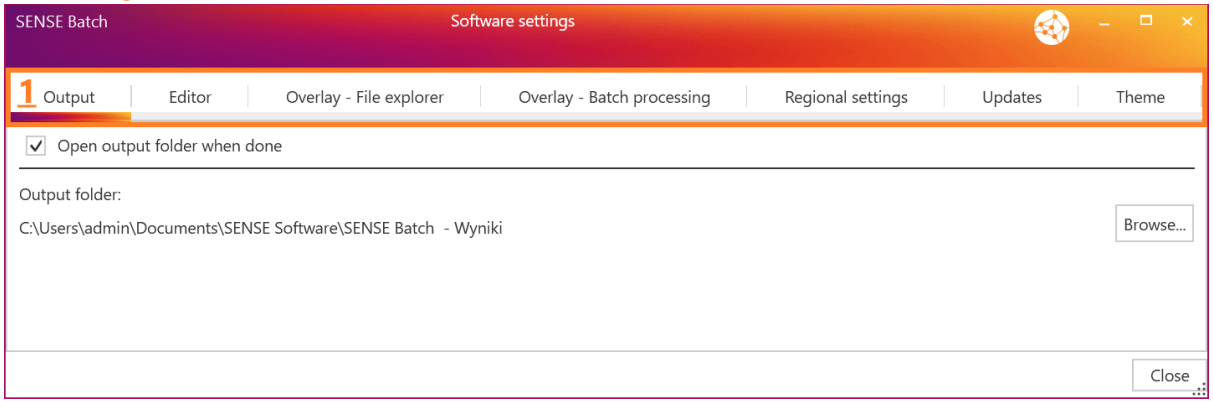
1) In the *Image Editor* window, go to the right pane
2) Select *Text annotations*
    a) Import existing text annotation template
    b) Create new text annotation template

6. Changing settings

6.1. General

In settings, one can change user preferences i.e. output folder, overlay or theme.

6.1.1. Figure



6.1.2. Explanation

1) Tabs:
    a. Output – batch output settings
    b. Editor – image editor settings
    c. Overlay - File explorer – select elements to be displayed on the image overlay when browsing image library
    d. Overlay - Batch processing – select elements to be displayed on the image overlay in the batch processing
    e. Regional settings – language, temperature unit and distance unit settings
    f. Updates – check if updates are available, choose to promptly install updates and proxy settings
    g. Theme - change application theme

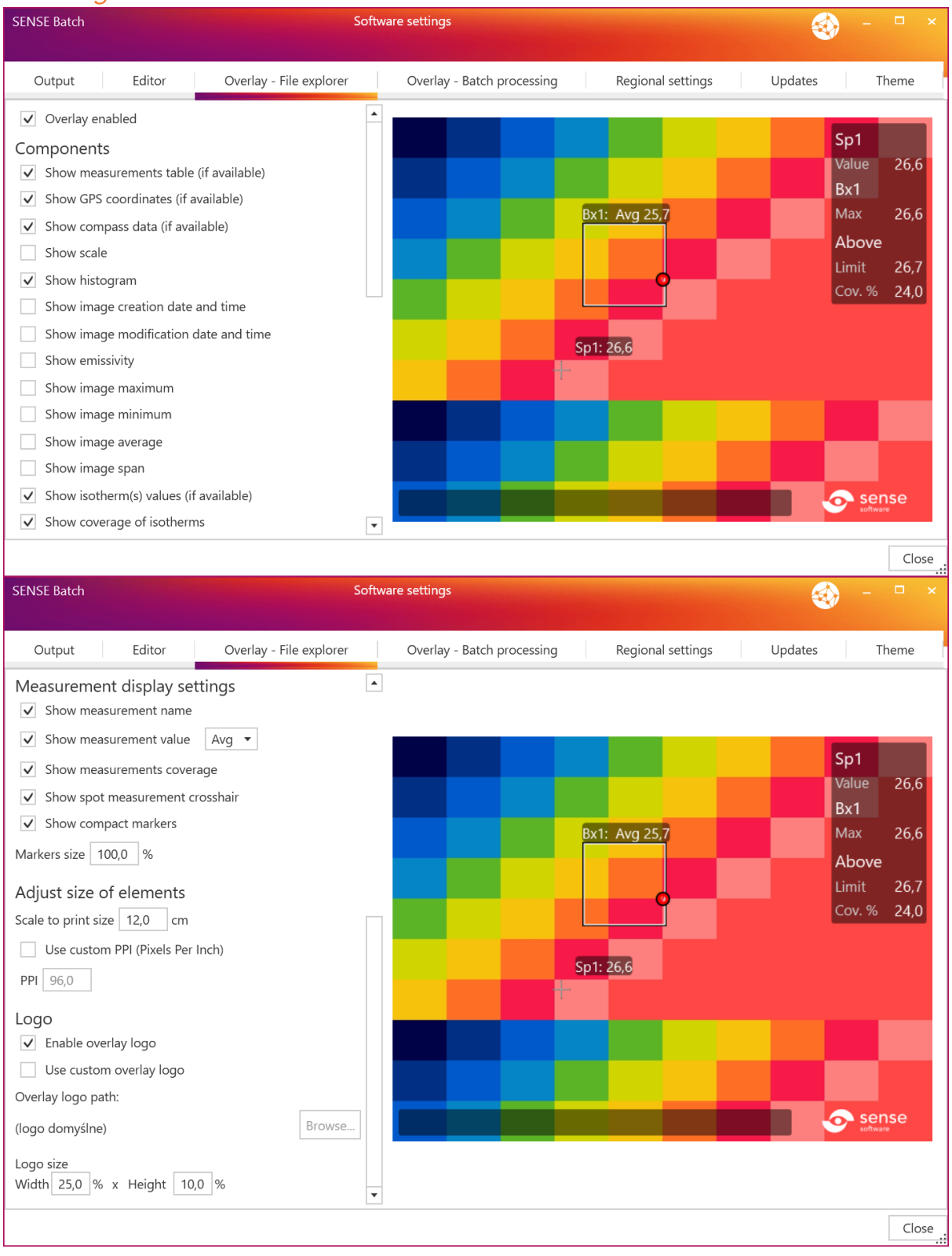
6.2. Setting up overlay

6.2.1. General

This setting tab allows user to change what is shown on radiometric image - namely overlay.

Overlay is the part of the image which is visible to external software (like for instance Windows Image Explorer or Photoshop). Some output target jobs also allow to generate only the overlay image, for instance to share online or when there is no use for radiometric data.
NOTE: Overlay is only generated for the thermal images.

6.2.2. Figure



6.2.3. Explanation

1) Overlay settings
    a) Overlay enabled – enable/disable overlay on the thermal image
2) Components
    a) Show measurements table – show/hide measurements table on the overlay (if any measurements are available)
    b) Show GPS coordinates – show/hide GPS coordinates (if available)
    c) Show compass data – show/hide compass data of the overlay (if available)
    d) Show scale – show/hide temperature scale on the overlay
    e) Show histogram – show/hide histogram on the overlay
    f) Show image creation date and time – show/hide date and time of the image creation
    g) Show image modification date and time – show/hide date and time of the last image modification
    h) Show emissivity – show/hide emissivity on the overlay
    i) Show image maximum – show/hide maximum temperature of the thermal image
    j) Show image minimum – show/hide minimum temperature of the thermal image
    k) Show image average – show/hide average temperature of the thermal image
    l) Show image span – show/hide temperature span of the thermal image
    m) Show isotherm(s) values – show/hide isotherm(s) values on the overlay (if available)
    n) Show coverage of isotherms – show/hide isotherm coverage on the overlay
3) Measurement display settings
    a) Show measurement name – show/hide measurement name
    b) Show measurement value – show/hide measurement value
    c) Show measurements coverage – show/hide measurement coverage
    d) Show spot measurement crosshair – show/hide measurement crosshair
    e) Show compact markers – show/hide compact markers
4) Adjust size of elements
    a) Scale to print size - set the required scale to print size (in cm)
    b) Use custom PPI – set custom pixel per inch for overlay elements
5) Logo:
    a) Enable overlay logo – enable/disable overlay logo on the thermal image
    b) Use custom overlay logo – set custom logo for the thermal image
    c) Logo size – set width and height of users logo

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