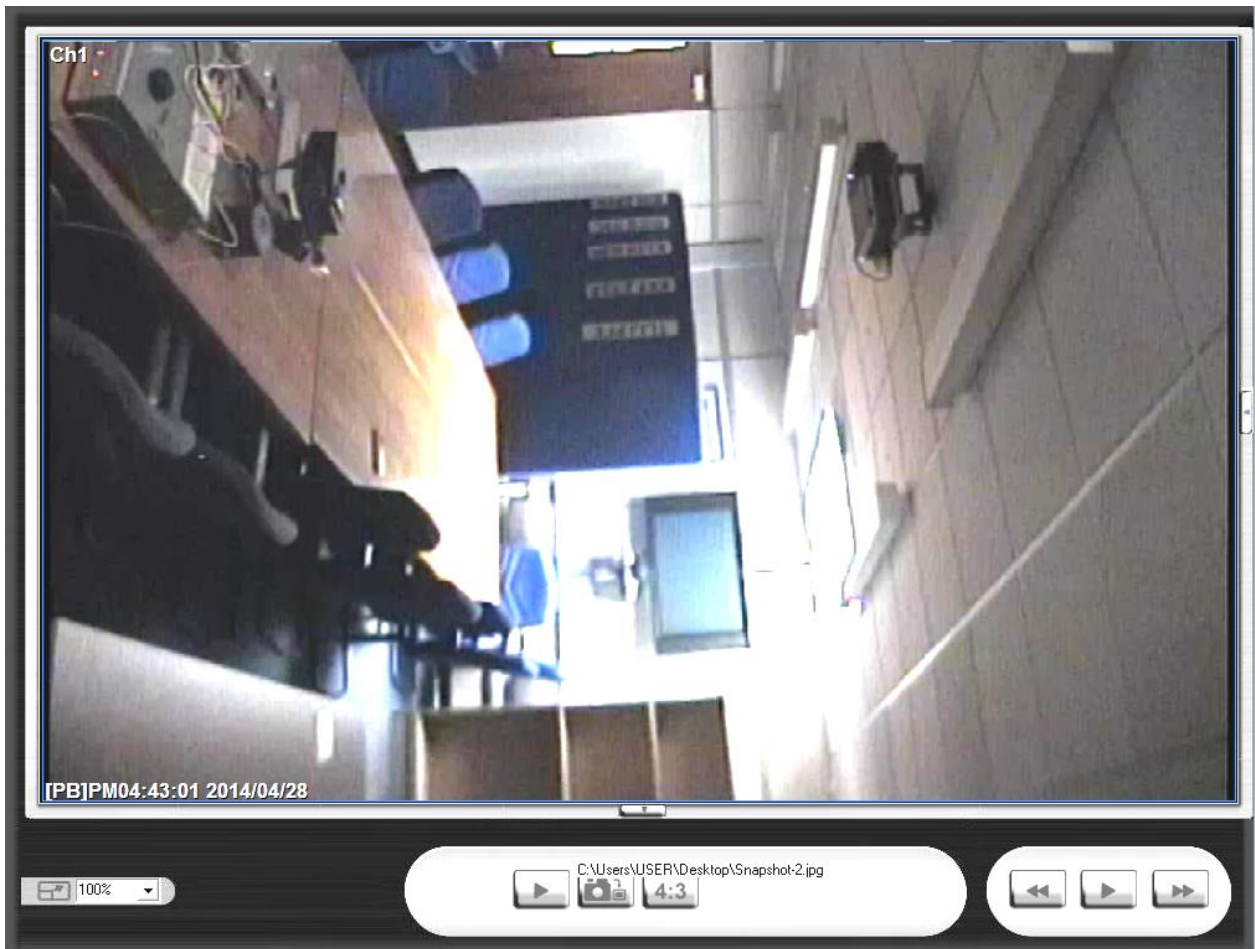## Question 1: Image Extraction at Best Quality

Qn.1A, if you used the supplied replay software:
please save and submit your results using the filename:
'Q1A_ReplayDescribed_YOURINITIALS' or

Please specify (i) the investigation method used to a) examine the video sequence and b) extract and examine the frame, and (ii) all steps executed. The information you provide should have sufficient detail so that anyone could independently reproduce your results.

- **Download zip File**
- **Extract to new folder Question 1A**
- **Open Application DVR Player**
- **Press Playback Browse video dvr**
- **Snapshot First frame**

      Q1A_ReplayDescribed_ID16

Qn.1A, if you used another method:
Please save and submit your results using the filename:
'Q1A_OtherMethod_YOURINITIALS'

Please specify (i) <u>the investigation method</u> used to <u>a) examine the video sequence</u> and <u>b) extract and examine the frame</u>, (ii) <u>all tools used</u>, and (iii) <u>all steps executed</u>. The information you provide should have sufficient detail so that anyone could independently reproduce your results.

Use any space you need

Qn.1B, if you used the supplied replay software:
Please save and submit your results using the file name:
'Q1B_ReplayDescribed_YOURINITIALS'

Please specify (i) <u>the investigation method</u> used to <u>a) examine the video sequence</u> and <u>b) extract and examine the frame</u>, and (ii) <u>all steps executed</u>. The information you provide should have sufficient detail so that anyone could independently reproduce your results.

- **Download zip File**
- **Extract to new folder Question 1B**
- **Install DM Observer**
- **Open video Browse video PAR**
- **Snapshot frame**

Q1B_ReplayDescribed_ID16

Qn.1B, if you used another method:

Please save and submit your results using the filename
'Q1B_OtherMethod_YOURINITIALS'

Please specify (i) <u>the investigation method</u> used to <u>a) examine the video sequence </u> and <u>b) extract and examine the frame</u>, (ii) <u>all tools used</u>, and (iii) <u>all steps executed</u>. The information you provide should have sufficient detail so that anyone could independently reproduce your results.

Use any space you need

Qn.1C

Frame Size of source file recording used in Qn.1A				Frame Size of source file recording used in Qn.1B			
1008	x	767	pixels	720	x	594	pixels

What are your conclusions about the raw, encoded quality of the provided video frame/sequence in Q1A and Q1B?

Q1A IS BETTER QUALITY

Question 2: Super-Resolution from supplied sequence of 249 .bmp files

Qn.2A

Please select your best result, i.e.: a single best quality super-resolution image:
Please save and submit your results using filename: "Q2A_SuperRes_YOURINITIALS"

1. How have you ingested the material into your enhancement system and super-resolution software tools?
   Please detail all steps of any conversion performed including all software tools and settings used. The information you provide should have sufficient detail so that anyone could independently reproduce your results.

- **Open bmp photos in Amped FIVE**
- **Resize Zoom**
- **Choose best Frame**
- **Superresolution**
- **Motion Debluring**

2. Please specify all software tools and all Enhancement Filters used (in order) and specific parameter settings; e.g. Super-Resolution Filter (Method? Zoom factor? Number of Iterations? Interpolation?......)

   Use any space you need

   1.
   2.
   3.
   4.
   5.
   Etc

3. Did you select a "region of interest" for directing the super-resolution tool? If so please specify co-ordinates of the region (if used) in the format given by the tool.

   Use any space you need

4. Did you select any specific frames or image? If so, please provide details of range of frames or specific frames you used.

   Use any space you need

5. Please provide any other information that would be needed so that others would be able to repeat and reproduce your work.

Q2A_SuperRes_ID16

Qn.2B

Please select your best result, i.e.: a single best quality super-resolution image:
Please save and submit your results using filename: "Q2B_SuperRes_YOURINITIALS"

1. How have you ingested the material into your enhancement system and super-resolution software tools?
   Please detail all steps of any conversion performed including all software tools and settings used. The information you provide should have sufficient detail so that anyone could independently reproduce your results.

- **Download zip File**
- **Extract to new folder Question 2B**
- **Open DAV File(Converted) in Amped FIVE**
- **Integrate Superresolution**
- **Crop the picture**
- **Resize Zoom**
- **Snapshot frames**

2. Which of the 5 number plates have you concentrated your efforts on (1=closest number plate, ..., 5=most distant) and how did you decide on selecting this number plate?

   Selected no. plate: 1, 2, 3, 4, or 5

   Decision reached how:

3. Please specify all software tools and all enhancement filters used (in order) and specific parameter settings; e.g. Super-Resolution Filter (Method? Zoom factor? Number of Iterations? Interpolation?......)

   Use any space you need

   1.
   2.
   3.
   4.
   5.
   Etc

4. Did you select a "region of interest" for directing the super-resolution tool? If so please specify co-ordinates of the region (if used) in the format given by the tool.

Use any space you need

5. Did you select any specific frames or image? If so, please provide details of range of frames or specific frames you used.

Use any space you need

6. Please provide any other information that would be needed so that others would be able to repeat and reproduce your work.

7.
Q2B_SuperRes_ProcedureNUMBER_PlateNUMBER_1_ID16

Q2B_SuperRes_ProcedureNUMBER_PlateNUMBER_2_ID16

Q2B_SuperRes_ProcedureNUMBER_PlateNUMBER_3_ID16

Qn2B. (continued): optional:

As indicated on the Collaborative Exercise webpage you may choose to submit multiple results. If this is the case then please specify how you obtained your results by replicating the previous 6 points for each Procedure/toolset used and/or each possible license plate you focussed on.

For example:

Please save and submit your results using filename:
'Q2B_SuperRes_Procedure1_PlateAll_YOURINITIALS' to indicate the best enhancement result you obtained for all plates using the Procedure1 you will describe using a cut-paste repetition of the 6 previous subquestions above, etc.

and/or

Please save and submit your results using filename:
File name: 'Q2B_SuperRes_Procedure2_Plate1_YOURINITIALS' to indicate the best enhancement result you obtained for Plate 1 using the Procedure2 you will describe using a cut-paste repetition of the 6 previous subquestions above, etc.

and/or

Please save and submit your results using filename:
File name: 'Q2B_SuperRes_Procedure2_Plate2_YOURINITIALS' to indicate the best enhancement result you obtained for Plate 2 using the Procedure2 you will describe using a cut-paste repetition of the 6 previous subquestions above, etc.

etc.

Qn.2C (optional)

Please select your best result, i.e.: a single best quality super-resolution image:
please save and submit your results using filename: "Q2C_SuperRes_YOURINITIALS"

1. How have you ingested the material into your enhancement system and super-resolution software tools?
   Please detail all steps of any conversion performed including all software tools and settings used. The information you provide should have sufficient detail so that anyone could independently reproduce your results.

   Use any space you need

2. Which of the 5 number plates have you concentrated your efforts on (1=closest number plate, ..., 5=most distant) and how did you decide on selecting this number plate?

Selected no. plate: 1, 2, 3, 4, or 5

Decision reached how:

3. Please specify all software tools and all enhancement filters used (in order) and specific parameter settings; e.g. Super-Resolution Filter (Method? Zoom factor? Number of Iterations? Interpolation?......)

Use any space you need

1.
2.
3.
4.
5.
Etc

4. Did you select a "region of interest" for directing the super-resolution tool? If so please specify co-ordinates of the region (if used) in the format given by the tool.

Use any space you need

5. Did you select any specific frames or image? If so, please provide details of range of frames or specific frames you used.

Use any space you need

6. Please provide any other information that would be needed so that others would be able to repeat and reproduce your work.

Use any space you need

Qn2C. (continued): optional:

As indicated on the Collaborative Exercise webpage you may choose to submit multiple results. If this is the case then please specify how you obtained your results by replicating the previous 6 points for each Procedure/toolset used and/or each possible license plate you focussed on.

For example:

Please save and submit your results using filename:
'Q2C_SuperRes_Procedure1_PlateAll_YOURINITIALS' to indicate the best enhancement result you obtained for all plates using the Procedure1 you will describe using a cut-paste repetition of the 6 previous subquestions above, etc.

and/or

Please save and submit your results using filename:
File name: 'Q2C_SuperRes_Procedure2_Plate1_YOURINITIALS' to indicate the best enhancement result you obtained for Plate 1 using the Procedure2 you will describe using a cut-paste repetition of the 6 previous subquestions above, etc.

and/or

Please save and submit your results using filename:
File name: 'Q2C_SuperRes_Procedure2_Plate2_YOURINITIALS' to indicate the best enhancement result you obtained for Plate 2 using the Procedure2 you will describe using a cut-paste repetition of the 6 previous subquestions above, etc.

etc.

Question 3: Focal deblur test

Please specify (i) <u>all software tools or processing steps</u>, (ii) <u>all enhancement filters</u> used (in order) and (iii) <u>all specific parameter settings.</u> The information you provide should have sufficient detail so that anyone could independently reproduce your results.

Q3_125cm_ID16

- **Download Jpg Photo**
- **Open photo in Amped FIVE**
- **Crop the picture**
- **Resize Zoom**
- **Contrast brightness**
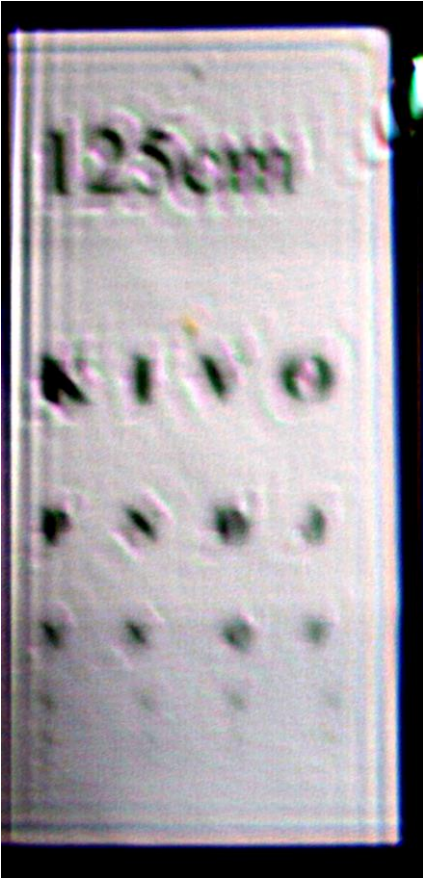- **Motion Deblurring size 78 angle 45**

Q3_75cm_Line4_ID16

- Open photo in Amped FIVE
- Crop the picture
- Resize Zoom
- Contrast brightness
- Motion Deblurring size 78 angle 45

125 cm chart:
Please save and submit your results using filename: 'Q3_125cm_YOURINITIALS' or 'Q3_125cm_LineNUMBER_YOURINITIALS'
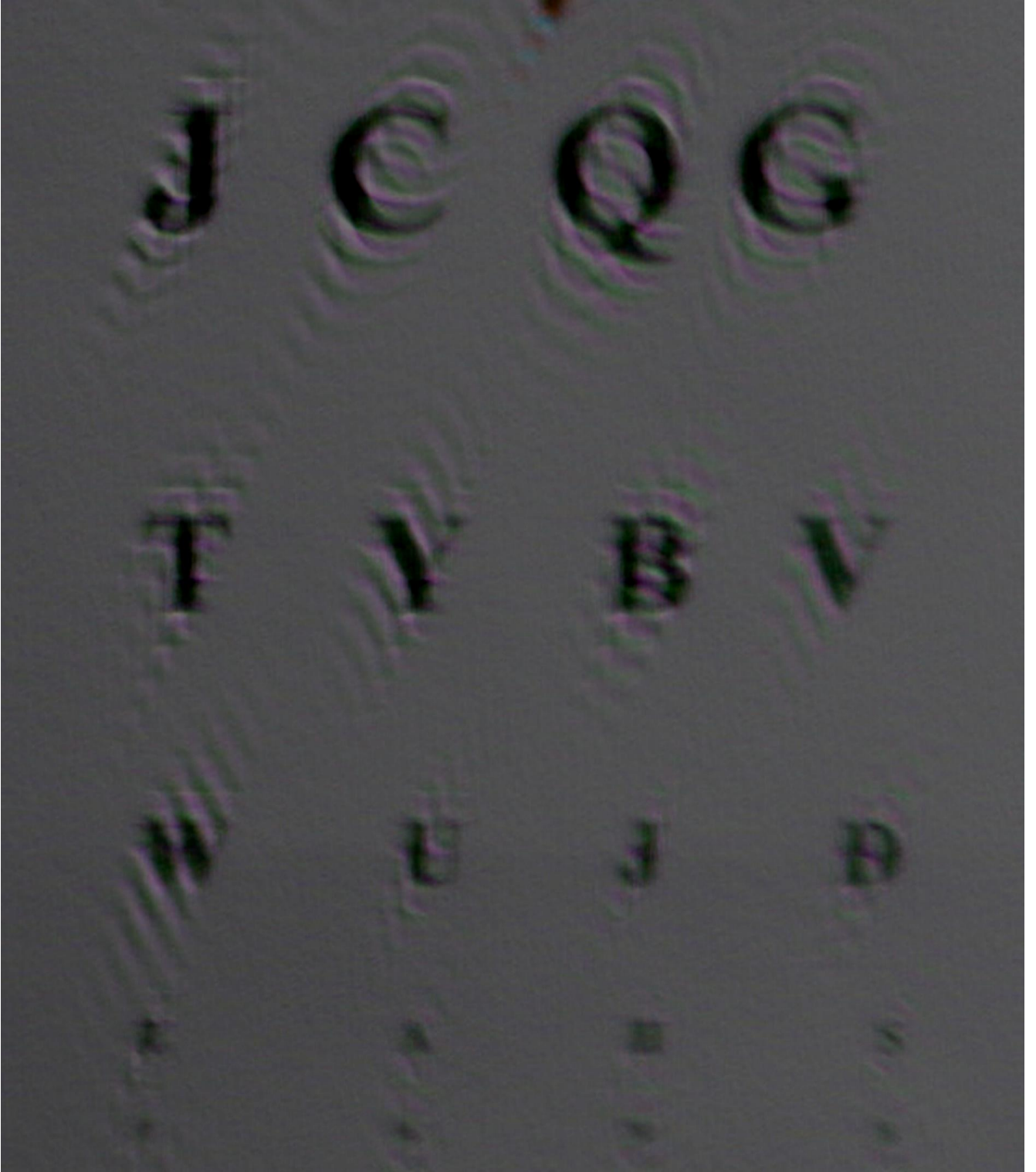
Q3_125cm_ID16

75 cm, 4th line:

Please save and submit your results using filename: 'Q3_75cm_Line4_YOURINITIALS'

75 cm, 5th line:

Please save and submit your results using filename: Q3_75cm_Line5_YOURINITIALS'

Use any space you need

any other results: optional:

Please save and submit your results using filenames: 'Q3_DISTANCEcm_LineNUMBER_YOURINITIALS'

Use any space you need

Question 4: Motion deblur test

Qn.4A:

Please specify (i) <u>all software tools or processing steps</u>, (ii) <u>all enhancement filters</u> used (in order) and (iii) <u>all specific parameter settings.</u> The information you provide should have sufficient detail so that anyone could independently reproduce your results.

If you wish to provide results for different regions of interest in the image, please specify their coordinates and/or indicate the region in a small thumbnail, and use the filenames: "Q4A_RegionNUMBER_YOURINITIALS".

Region NUMBER: coordinates and/or thumbnail:

- **Open photo in Amped FIVE**
- **Crop the picture**
- **Resize Zoom**
- **Motion Deblurring size 102 angle 3 noise 0.0100 PHOTO 1**
- **Crop the picture**
- **Resize Zoom**
- **Motion Deblurring size 138 angle 8 noise 0.0126 PHOTO 2**
- **Crop the picture**
- **Resize Zoom**
- **Motion Deblurring size 116 angle 178 noise 0.0126 PHOTO 3**

Q4A_RegionNUMBER-_1_ID16

Q4A_RegionNUMBER-_2_ID16

Q4A_RegionNUMBER-_3_ID16
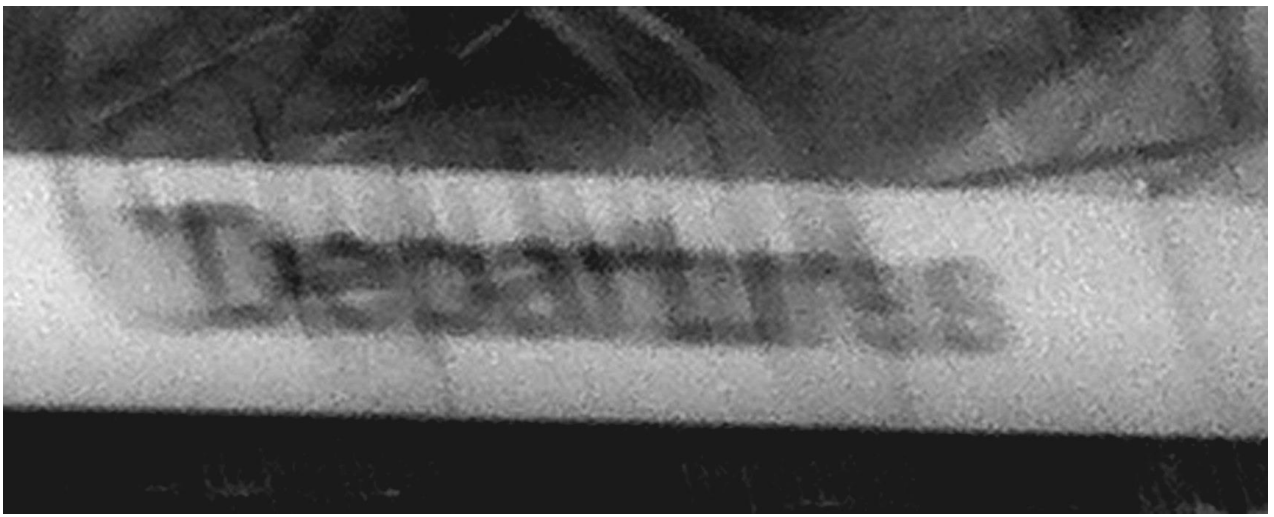
Qn.4B:

Please specify (i) <u>all software tools or processing steps</u>, (ii) <u>all enhancement filters</u> used (in order) and (iii) <u>all specific parameter settings.</u> The information you provide should have sufficient detail so that anyone could independently reproduce your results.
If you wish to provide results for different regions of interest in the image, please specify their coordinates and/or indicate the region in a small thumbnail, and use the filenames: "Q4A_RegionNUMBER_YOURINITIALS".

Region NUMBER: coordinates and/or thumbnail:

- **Open photo in Amped FIVE**
- **Crop the picture**
- **Resize Zoom**
- **Grayscale conversion**
- **Contrast Brightness PHOTO 1**
- **Crop the picture**
- **Resize Zoom**
- **Blind Deconvolution PHOTO 2**
- **Crop the picture**
- **Resize Zoom**
- **Negative**
- **Unsharp Mask**
- **Levels PHOTO 3**

Q4B_RegionNUMBER_1_ID16

Q4B_RegionNUMBER_2_ID16

Q4B_RegionNUMBER_3_ID16