

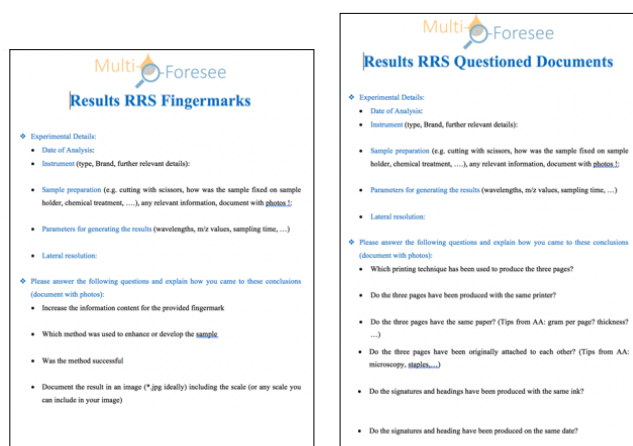
The meeting started on Nov 5th at 09:00 with an introduction of Martina Marchetti-Deschmann (MMD) followed by a summary for the Round Robin Studies (RRS) and discussion on further steps. The presentation with the full summary is available on OwnCloud (TU Wien secure server).

**1) Update on RRS (MMD):**

MMD summarizes who attended the meeting in Burssels (April 2018) and in Sheffield (July 2018) and gives an update on the current state of the RRS.

A summary of people that received samples is presented.

The reporting template is presented again to remind people to report consistently for future publication:



Ana Assis and Michal Levin have RRS samples with them and provide them to further RRS participants (documents: R. Heeren, S. Francese, M. Baileys; fingermarks: R. Heeren, Mimoza)

**2) Discussion of RRS 2 results of document analysis**

Results from Sheffield are presented and results from participants not available in Dubrovnik. Summary:

**Printing Technique:**

Alexandra Guedes (Raman / light microscopy)	?	
Andrei Tsiatsiyuev (light microscopy, visual)	electrophotographic, laser print (dense layer, color)	✓
Andy Becue (light microscopy ?)	electrophotographic printing system, non-magnetic toner	✓
Iva Bogdanovic (SIMS)	?	
Martin Nosko (SEM)	Laser technology	✓
Kristyna Pospiskova/Ivo Safarik (FTIR, microscope)	?	
Janis Spigulis (illuminator prototype)	electrophotography, non-magnetic	✓
Thomas Fischer (FTIR, Vis/NIR, multispectral, SEM-EDX)	laser printing	✓

### Same Printer?

Alexandra Guedes (Raman / light microscopy)	no: page 1+3 vs page 2 (spectra, ink)	✓
Andrei Tsiatsiyueu ( light microscopy)	no: page 1+3 vs page 2 (strokes)	✓
Andy Becue (light microscopy ?)	no: page 1+3 vs page 2 (toner morphology)	✓
Iva Bogdanovic (SIMS)	no: page 1+3 vs page 2 (m/z ions, x-ray energy)	✓
Martin Nosko (REM)	no: page 1+3 vs page 2 (morphology)	✓
Kristyna Pospiskova/Ivo Safarik (FTIR, microscope)	no: page 1+3 vs page 2 (% toner similarity)	✓
Janis Spigulis (illuminator prototype)	no: page 1+3 vs page 2 (gloss, satellites, defects)	✓
Thomas Fischer (FTIR, Vis/NIR, multispectral, SEM-EDX)	no: page 1+3 vs page 2 (spectra)	✓

### Same paper:

Alexandra Guedes (Raman / light microscopy)	?	
Andrei Tsiatsiyueu ( light microscopy, <del>visual</del> )	page 2 different from page 1+3 (color, micro-relief, weight)	✓
Andy Becue (light microscopy ?)	no (explanation?)	✓
Iva Bogdanovic (SIMS)	?	
Martin Nosko (Spectrophotometer)	page 2 different (brightness, printing footprints)	✓
Kristyna Pospiskova/Ivo Safarik (FTIR, microscope)	?	
Janis Spigulis (illuminator prototype)	page 2 different (brightness)	✓
Thomas Fischer (FTIR, Vis/NIR, multispectral, SEM-EDX)	different paper (thickness, spectra (all three pages diff))	✓ X

### Originally attached to each other?

Alexandra Guedes (Raman / light microscopy)	?	
Andrei Tsiatsiyueu ( light microscopy, <del>visual</del> )	Page 1+3 stapled 2-times	✓
Andy Becue (light microscopy ?)	Page 1+3 stapled twice	✓
Iva Bogdanovic (SIMS)	Page 1+3 stapled twice	✓
Martin Nosko (Spectrophotometer)	Page 1+3 stapled twice	✓
Kristyna Pospiskova/Ivo Safarik (FTIR, microscope)	Page 1+3 stapled twice	✓
Janis Spigulis (illuminator prototype)	Page 1+3 stapled twice	✓
Thomas Fischer (FTIR, Vis/NIR, multispectral, SEM-EDX)	not answered with applied techniques	

### Same ink?

Alexandra Guedes (Raman / light microscopy)	yes – same Raman spectrum	X
Andrei Tsiatsiyueu ( light microscopy, <del>visual</del> )	no (with help of Thinlayer Chrom; liquid ink - "A-2" ballpoint pen, "A-1", "A-3" gel pen. pastes: "B-1", "B-2", "B-3" do not differ, "C-1", "C-3" differ from the paste "C-2")	✓
Andy Becue (light microscopy ?)	no (ball point pen vs liquid ink, no ink differentiation)	✓
Iva Bogdanovic (SIMS)	no (on all three pages: PB15:3, Basic Violet 3 BV3, Basic Violet 3 BV3 + Basic Blue 26 BB26)	✓
Martin Nosko (Spectrophotometer)	Conclusion is missing	✓ X
Kristyna Pospiskova/Ivo Safarik (FTIR, microscope)	sign 1 + 3 – all same ink, sign 1 different on page 2; inks not compared versus each other	✓
Janis Spigulis (illuminator prototype)	unclear answer (ballpoint, different ink for all sign., no diff between pages)	✓ X
Thomas Fischer (FTIR, Vis/NIR, multispectral, SEM-EDX)	contradictive answers	✓ X

### Same day (aging)?

Alexandra Guedes (Raman / light microscopy)	?
Andrei Tsiatsiyueu ( light microscopy, <del>visual</del> )	?
Andy Becue (light microscopy ?)	?
Iva Bogdanovic (SIMS)	?
Martin Nosko (Spectrophotometer)	?
Kristyna Pospiskova/Ivo Safarik (FTIR, microscope)	?
Janis Spigulis (illuminator prototype)	?
Thomas Fischer (FTIR, Vis/NIR, multispectral, SEM-EDX)	?

Ana Assis provides all pencils used for analysis, WG members can make reference samples (ink database).

### 3) Discussion of RRS 2 results of fingerprint analysis

Alexandra Guedes (Raman / light microscopy)	no results	X
Andy Becue (microscopy)	conventional camera: results, no increase	X
	luminescence + camera: results, increase (ridges)	✓
Melanie Bailey (SIMS)	increase	✓
Simona Francese (MALDI TOF)	increase	✓
Nunzianda Frascione (Fluorescence)	results, no increase	X
Kristyna Pospiskova/Ivo Safarik (FTIR, microscope)	no results, analysis not applicable	X
John O'Hara (examiner)	results (chem treatment), no increase	X
Jose Luis Lerma (spectroscopy, statistics)	results after PCA, no increase	X
Mara Rapele (microscopy)	results (chem treatment), no increase	X

### 4) Further discussions:

The group decides to make all results available online on a secure server at TU Wien (OenCloud).  
Slides will only be available to people who provided data.  
Meeting minutes will be available to all WG 1 members.

The group starts a discussion on how to proceed. The following the decisions were made:

- a) 2 manuscripts will be put together (document and fingerprint) – Part I and Part II  
Only those who provided data are co-authors
- b) The method on how fingerprints were produced shall be provide by Michal Levin

STSM:

MMD asks that results of STSMs should be presented to community. A decision was made that all STSM holder have to upload a public summary on website

The WG1 meeting ended at 12:30.

Vienna,  
December 2018



Martina Marchetti-Deschmann (WG1 Chair)

**ANNEX (Available on OwnCloud for those who provided data)**