Dear User

GLOBALGRAF is a package of four specialist computer programmes which aid the identification of handwriting (signatures) and have been developed by experts of the Polish Forensic Association under the research and development project of the Ministry of Science and Higher Education. GLOBALGRAF programmes (saved on pendrive, included in the packet), are contained in four folders with 8 files[1] each, as described below:

GLOBALGRAF package			
Item	Folder name	File name	Purpose
1	GRAFOTYP	GRAFOTYP.exe	Executable file. Double click launches GRAFOTYP programme
		GRAFOTYP-pokaz.pps	Slide show guiding you throughout GRAFOTYP and intended for instruction purposes
2	KINEGRAF	KINEGRAF.exe	Executable file. Double click launches KINEGRAF programme
		KINEGRAF-pokaz.pps	Slide show guiding you throughout KINEGRAF and intended for instruction purposes
3	RAYGRAF	RAYGRAF.exe	Executable file. Double click launches RAYGRAF programme
		RAYGRAF-pokaz.pps	Slide show guiding you throughout RAYGRAF and intended for instruction purposes
4	SCANGRAF	SCANGRAF.exe	Executable file. Double click launches SCANGRAF programme
		SCANGRAF-pokaz.pps	Slide show guiding you throughout SCANGRAF and intended for instruction purposes

Licence:

Programmes included in the package are copyrighted and subject to a non-exclusive licence granted to the licensee for unlimited period of time (they do not require periodic renewal). Executable files, i.e. proper programmes (".exe") can be run only on the computer, whose operating system serial number was provided by the user when ordering licensed programmes. The attempt to launch the programmes on other computers generates an error message and terminates the programme. Other package files such as slide shows (".pps" files) can be run on any computer with no restrictions.

License is granted for the following scope of exploitation:
- ➢ acquisition, display, use and storage of programme package on the computer, whose ID (operating system serial number) was provided upon placing the order for the package in question;
- ➢ use of programme package exclusively for own purposes, without the possibility of using the programme in order to render services to third parties;
- ➢ backup, in the scope necessary for using the programme package;

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[1] Number of„.exe" files can be different when selected programmes have been purchased and not a complete GLOBALGRAF package. The table demonstrates the contents of a complete package.

➢ observe, study and test the operation of programme package in order to understand operation principles and concept by the person who has the right to use a copy of programme package, if, being authorised to perfom these operations, she or he does so during the acquisition, display, use and storage of programme package.

The user is obliged to:
➢ utilise programme package exclusively within the exploitation scope described above;
➢ use the programme(s) only on the computer for which it was purchased;
➢ protect software from being copied/duplicated in whole or in part by third parties;
➢ not performing expert services for third parties (subcontracting) with use of purchased software;
➢ not reselling or otherwise transferring the rights to use this software or its part, in particular, sublicensing is prohibited;
➢ software may not be rented, lent, leased or put into the possession by virtue of any other legal relationship;
➢ software on the pendrive may be copied only for backup purposes;
➢ it is forbidden to decompile the programme(s) nor modify it;
➢ in case the software or its part is rendered to third parties, or service is provided for the benefit of third parties with the use of the software, the licencee is obliged to redress damage, including covering any financial loss resulting from this damage to the authors or authorised distributor;
➢ distributor and the authors are not liable for the consequences of using the programme(s) in a manner inconsistent with the instruction and/or methodology of handwriting examination.

How to use programmes:
You can use the programmes, each time running them directly from a purchased USB flash drive. It is recommended to copy the contents of USB flash drive to your computer at any location and run programmes from there. A purchased USB flash drive can be used as a backup. Additionally, some extra copies can be made by user on CDs or DVDs, if required.

System and equipment requirements:

1. Programmes are compatible with the following operational systems:
   ➢ Windows XP
   ➢ Windows Vista

   ➢ Windows 7

   ➢ Windows 8

   ➢ Windows 10

2. To ensure a satisfactory performance (accuracy) of measurements, the required monitor (display) resolution is more than 1024×600 (the higher the better) and font size "9" at

maximum 120 dpi is recommended. With other resolution and font sizes the programmes cannot be started.
3. In Windows system, „.NET Framework" platform in v.2.0.50727 or more recent version should be installed. It is necessary for proper running of the programme.[2]
4. Nearly 50 MB of free memory on hard disk (for the whole package) is required. In case of a single programme – about 12 MB.

5. To view slide show („.pps" files) PowerPoint application (or PowerPoint Viewer) needs to be installed from Microsoft Office 2000 or more recent one.

Programmes at glance:

1. **GRAFOTYP** – is designed for examination of match between specimens with „ Shape coefficient – Wk" parameter (Wk degree of match is additionally verified statistically with quantile test) and „Grafotyp – G" parameter (G degree of match is determined in percentage). Furthermore, **GRAFOTYP** can be used to analyse:
   ➢ shape of margins,
   ➢ letter, word and line spacing,
   ➢ course of basic and upper lines,
   ➢ topography of signatures in sections,
   ➢ stamp prints.

2. **KINEGRAF** – is designed for examination of kinetic – geometrical handwriting parameters with respect to directions of writing of elements. This is achieved by the application of WPKG – kinetic and geometric similarity index. Moreover, the programme provides the possibility of evaluating the identification values of examined handwriting specimens, determined with Wi coefficients. This option is particularly useful in examination of illegible signatures (initials).

3. **RAYGRAF** – the programme enables a detailed analysis of geometrical and structural parameters of handwriting, by taking into account five parameters as below:
   ➢ linear similarity coefficient – **Wpl** to examine similarity between specimens in terms of linear size of their elements,

   ➢ angular similarity coefficient – **Wpk** to examine angular similarity of slopes of elements making up the specimens,

   ➢ morpheme density coefficient – **Wgm** and letter density coefficient – **Wgl** to enable examination of similarity between specimens in terms of widths of their elements (grammas, letters, morphemes, syllables, words, etc.),

   ➢ impulse density coefficient – **Wimp** to enable examination of similarity between specimens in terms of size of sparing between their elements (writing impulse).

4. **SCANGRAF** – is different from others, as not being a graphometric programme. Scangraf does not provide mathematically measurable parameters, but is a tool allowing for the visualization of pressure of a writing instrument applied to the background (shading system) in order to produce a handwriting entry. Therefore, a quick evaluation of similarity between shading distribution in examined specimens is possible. The programme can be also used for

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[2] This note applies only to computers with older versions of operational systems. Modern computers have manufacturer installed ".NET Framework" platform.

the analysis and evaluation of the uniformity of illumination of background (substrate) of examined specimens at the moment of formation of graphical lines. Additionally, the uniformity of illumination on blank areas, with no graphical elements, can be examined.

Final notes:

1. Before starting work with the programmes, it is recommended to become familiarized with training material (presented in „.pps" files). More detailed information on operation of each programme and examination of specimens, a <u>must-know by the user,</u> is described and available after starting the programme in „Information/Terminology" and "Information/User manual" menu options.
2. <u>All programmes described above constitute aiding tools to support expert's work by improving the examination objectivity. The programmes however, do not substitute experts who make a final decision on similarity or dissimilarity of handwriting specimens.</u>

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