GENOLAB – FORENSIC BIOSTATISTICS IN A CLOUD

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In the past years the number of forensic cases has grown constantly. Moreover with the rapid development of high-throughput technologies, forensic investigation has generated a huge amount of data. New technologies like next generation sequencing (NGS) will speed up this process and deliver an unprecedented amount of information, which must be analyzed. In addition, the ongoing development of new biostatistic methods for mixture analysis, complex paternity cases or disaster victim identification cannot be solved in sufficient time with standard computer hardware of a forensic laboratory.

For that reason we developed a cloud based solution for forensic biostatistics. This solution solves the problems and will fit the future needs for biostatistics analysis. The combination of specially designed biostatistic algorithms and method with the advantages of cloud technology provides the capability to analyze also cases with several hundred or thousands of DNA profiles.

We will show several practical examples like complex paternity cases, analysis of mass graves and disaster victim identification. These examples will demonstrate how cloud computing, combined with new biostatistical algorithms, can dramatically improve the time needed for data analysis. These include also cases which cannot be solved with typical forensic laboratory software and hardware solution in a sufficient time span.