AbstractID: 13695 Title: Remote PC Application Access to a Stereotactic Treatment Planning System SQL Database

**Purpose**: To implement remote access using Matlab to a PostgreSQL database, which supports the Leksell GammaPlan (LGP) version 8.1 treatment planning system.

**Method and Materials**: A postgreSQL Java Database Connectivity (JDBC) driver was downloaded from the official website of postgreSQL. The class path that specifies a series of files and directories, pointing to classes accessible to Matlab, must be edited to include the database driver. Table *patients* maintains information on patients. Table *examinations* maintains information on each examination. Table *skulls* maintains information on skull coordinates. Table *plans* maintains information on each treatment plan. Table *targets* maintains information on each target. Table *shots* maintains information on each shot. Table *examinations* is related to table *patients* through patient ID. Table *skulls* is related to table *examinations* through examination ID. Table *plans* is also related to table *examinations* through examination ID. Table *targets* is related to table *plans* through plan ID. Table *shots* is related to table *targets* through target ID.

**Results**: An application was implemented in Matlab. By entering the patient ID, any information about any treatment performed on any specific patient, from patient's name and birthday to the shot time of each shot, could be retrieved remotely on a PC from the database in a well-maintained data structure. The retrieved data were further used to verify LGP treatment plans through independent dose calculation and display.

**Conclusion**: A remote access to PostgreSQL database behind LGP is feasible in Matlab. Similar application could also be implemented in other environments like Visual C#. It is of great convenience for users who desire to develop their own applications that use information found in the LGP SQL database.