EXPERIMENTAL LICENSE PROGRESS REPORT OF
THE ALFRED MANN FOUNDATION
May 16, 2014

As required under the experimental license renewal granted on November 16, 2009 (Call Sign WD2XLW; File No. 0228-EX-RR-2009), the Alfred Mann Foundation for Scientific Research ("AMF") submits this semi-annual progress report on the experimental operation of the medical micropower network ("MMN") system. AMF continues to make progress with its innovative system. AMF has implemented and continues to implement improvements that will enhance the radio communication performance and reliability of the MMN devices, including the following:

1. At this time the primary project focus is on the implant battery. The battery must be able to withstand the implant environment for many years to provide a patient with safe, consistent and reliable results. The battery is one of the higher-level technical challenges for the implant device. There were unforeseen delays with the program due to battery development. We have contracted with a new vendor for battery development and manufacturing. Prototype batteries are being tested. The test data will be used to further develop the battery to meet the project requirements.
2. The charging process is the most prevalent aspect of the user experience. The implant battery charging strategy is best accomplished using the MMN link to periodically report the charge progress. In focusing on the use case for the patient, improved methods for charging continue to be investigated.

Table 1 below specifies the four channels implemented in the MMN hardware:

Table 1 – Radio Channel Frequencies (MHz)

	Lower Edge	**Center**	**Upper Edge**
Band 1	413.919	416.405	418.891
Band 2	426.349	428.835	431.321
Band 3	438.779	441.265	443.751
Band 4	451.209	453.695	456.181
Guard bands 7.458 MHz		**Band Width 4.972 MHz**	