have more than 18 years of professional experience in computer science and software engineering. I hold a doctorate in electrical engineering and computer science and presently work as a professor at Rose-Hulman Institute of Technology ("Rose-Hulman") in Computer Science and Software Engineering. In addition to my academic research in computer science and programming, I have served as a computer science and programming consultant and engineer to private industry, and an expert witness and consultant in several patent cases. I also invented and patented a new system for transforming graphical images

II. Scope of Assignment

2. CQG Attorneys explained to me that Trading Technologies International, Inc. ("TT") brought a lawsuit against CQG for infringement of U.S. Patent Nos. 6,766,304 ("the '304 patent") and 6,772,132 ("the '132 patent"). I understand that the lawsuit is pending in the United States District Court for the Northern District of Illinois, Eastern Division and was assigned case number 05-cv-4811.

3. CQG Attorneys explained that TT is interpreting the claim terms "common static price axis" and "static display of prices" (collectively, the "Static Limitation") of the independent claims of the '304 and '132 patents as covering

4. CQG Attorneys also explained to me that the patent law requires the inventor to have demonstrated at the time of the filing date of the patent application that he was in actual possession of the invention as claimed or asserted against others. CQG Attorneys referred to this requirement as the "written description requirement," and explained that this requirement prevents the inventor from claiming or asserting more than they actually invented as determined by the patent disclosure and figures. CQG Attorneys asked me to determine whether the '304 and '132 patents disclose written description support for TT's Static Interpretation.

III. Documents Reviewed in Forming my Opinions

5. I formed my opinions based upon my knowledge, background, education, experience and review of the following documents and things:

(a) U.S. Patent No. 6,766,304 (Ex. 1).

(b) U.S. Patent No. 6,772,132 (Ex. 2).

(c) Provisional Patent Application No. 60/186,322 (Ex. 3).

Order" from the related *Trading Technologies v. eSpeed* case regarding the '304 and '132 patents. I will call this case the *eSpeed* Case.

(e) A Memorandum and Opinion dated February 21, 2007 from Judge Moran for Case No. 05-cv-4811 bearing Document #: 120 (Ex. 5). CQG Attorneys explained to me that this Memorandum and Opinion represents the "Supplemental Claim Construction Order" from the *eSpeed* Case.

(f) A Westlaw document dated June 20, 2007 bearing citation 507 F.Supp.2d 854 (Ex. 6). CQG Attorneys explained to me that this document represents Judge Moran's decision on TT's motion for summary judgment of infringement. I will call this document the "*eSpeed* District Court Decision".

(g) A Westlaw document dated February 25, 2010 bearing citation 595 F.3d 1340 (Ex. 7). CQG Attorneys explained to me that this document represents the appellate decision issued by the

priority date, and prior use. I will call this document the *eSpeed* Federal Circuit Decision.

(h) The Random House College Dictionary, Revised Edition having a copyright date of 1980. Excerpts from the Random House College Dictionary are attached as Ex. 8.

(i) Webster's Collegiate Thesaurus, having a copyright date of 1988. Excerpts from Webster's Collegiate Thesaurus are attached as Ex. 9.

(j) Electric Circuit Analysis, Third Edition (1999) by David E. Johnson, Johnny R. Johnson, John L. Hilburn, Peter D. Scott. Excerpts from this text are attached as Ex. 10.

(k) Microelectronic Circuits, Fourth Edition (1998) by Adel S. Sedra, Kenneth C. Smith. Excerpts from this text are attached as Ex. 11.

(l) Excerpts from TT's Opening Statement in the *eSpeed* Case (Ex. 12).

professional experiences, I do not consider myself an expert on patent law. CQG Attorneys provided me with additional guidance on legal principles relating to those laws and in particular a primer on the component parts of a patent, claim construction, and the written description requirement.

7. I understand that a patent is composed of four main parts: (1) an abstract of disclosure; (2) one or more drawings or figures illustrating the invention, (3) a disclosure of the invention (sometimes called the specification), and (4) the claims. The abstract is a concise statement of the technical disclosure of the invention and generally identifies that which is new or improved to the industry. Drawings or figures of the invention are required when necessary to understand the invention. The disclosure is a textual description of the invention and the figures. The words of the claims, as interpreted by the court, determine the scope of the invention. The words or phrases in the claims are sometimes referred to as "elements" or "limitations."

8. I understand that when a patent application is filed with the U.S. Patent and Trademark Office, it is examined by an Examiner. The Examiner is an employee

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