UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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YMAX CORPORATION,
Petitioner

v.

FOCAL IP, LLC,
Patent Owner

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*Inter Partes* Review No.: Unassigned

U.S. Patent No. 7,764,777

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**DECLARATION OF TAL LAVIAN, PH.D.**
**IN SUPPORT OF PETITION FOR**
**INTER PARTES REVIEW OF PATENT NO. 7,764,777**

BHN, et al. v. FOCAL IP, LLC

an insubstantial difference over the prior art, or a reconfiguration of a known system).

18.     I understand that the obviousness analysis must focus on the knowledge available to one of skill in the art at the time of the invention in order to avoid impermissible hindsight. I further understand that the obviousness inquiry assumes that the person having ordinary skill in the art would have knowledge of all relevant references available at the time of the invention.

## III.     Person Of Ordinary Skill In The Art

19.     It is my opinion that a person of ordinary skill in the art with respect to the '777 patent in 1999-2000 would have a bachelor's degree in electrical engineering, computer science, or the equivalent thereof and approximately 2 years of professional experience within the field of telecommunications or network communications.

20.     The '777 patent concerns the basic architecture of the telephone network that has existed in the United States for many decades, as well as basic Internet technology that was well known by 1999-2000.   These topics were covered in detail by that time in books, in publications by standards bodies, and by vendors that provided products and solutions in these areas.   Because the technology involved in the '777 patent involves well-known technologies and

publications by standards bodies, and by vendors that provided products and solutions in these areas. Exhibits 1004 and 1019-1023 are just few examples of standard bodies publications and products at this time period.

### A. THE PSTN / Circuit Switching Networks

39. The PSTN (public switched telephone network) is the world's collection of interconnected circuit-switching telephone networks.

40. In the United States, the PSTN is the conventional telephone network, primarily built by AT&T when it was "the" telephone company in the United States. Telephone calls have been made over the PSTN in the United States for over a century.

41. In the United States, the PSTN is a countrywide network of switches connected to each other by wires. The wires and switches between them connect the telephone of a calling party to the telephone of the called party. Once a telephone call between two landline telephones is established, there is a continuous physical path of wires, linked by one or more switches, between the telephones at each end of the call that is dedicated solely to that call. This is the meaning of the term "circuit switching." The term refers to the switching of infrastructure from one dedicated use to another. The network focus is on circuit-based, or connection-oriented, systems designed for delivery of voice communications.

42.     Even more specifically, the PSTN uses a hierarchy of switches.[3] This makes it possible to scale the telecommunications network to accommodate a large number of end users across the country.  Traffic is managed between the various switching offices depending on the type of traffic that was to be connected: local traffic, long distance traffic, and international traffic.

43.     The switches in the PSTN use a five-level hierarchy: edge or end (class 5), toll or tandem (class 4), primary (class 3), sectional (class 2) and regional (class 1). Landline phones in people's houses are generally connected to a geographically local class 5 switch (also called an edge switch, end switch, or central office switch).  Tandem/Class 4 switches generally connect edge/class 5 switches together, although nearby class 5 switches can be connected directly.  In the PSTN, class 2 and 3 switches are used infrequently, and class 4 switches can be connected to one another as well as by a class 1 switch.  The basic architecture of the PSTN can therefore be illustrated by the following diagram:

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[3] *See* Ex. 1012.
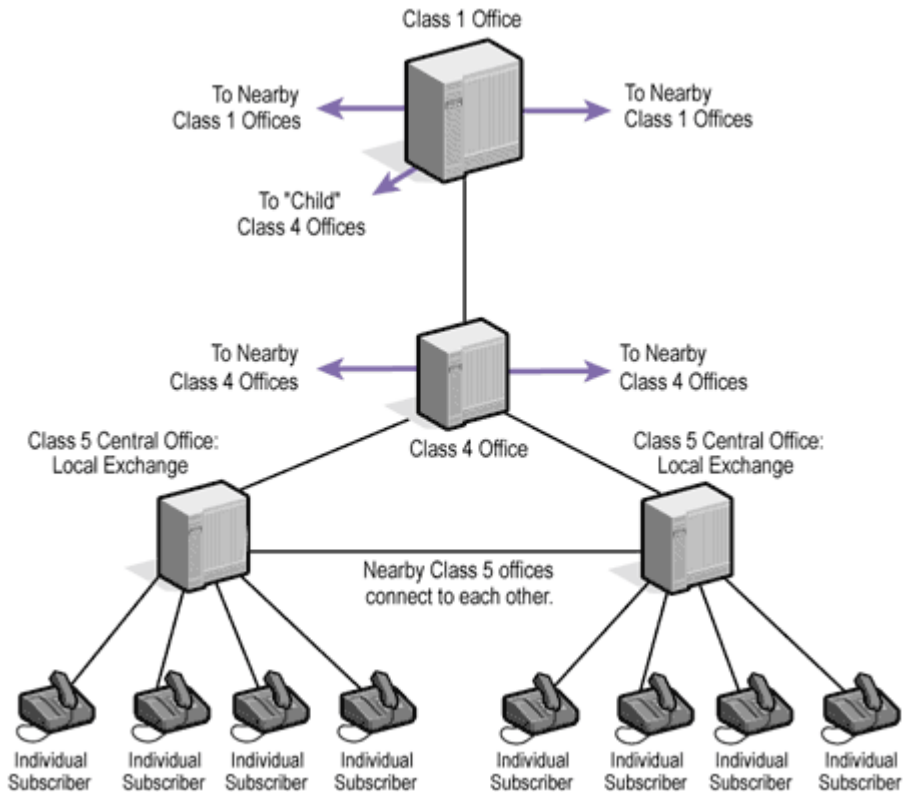
44.     The PSTN switch hierarchy does not mandate physical separation.

Switches from one or more adjacent classes (specifically edge and tandem) can be

located together in the same physical facility.  A combined class 4/class 5 switch is

often called a "hybrid" switch.

45.     When a telephone call is placed on the PSTN, the call typically travels

from the caller's phone to the edge switch in the caller's local central office.

Unless the recipient is in the same geographical area and directly connected to the

same central office, the call is then typically routed to one or more tandem

switches (in sequence), until it reaches the edge switch that is directly connected to

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