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# **CONFIDENTIAL**

Valuation of Small Cell LPN-16 Patent

Prepared for  
Wytec International, Inc.

By  
Inavisis, Inc.

## **Valuation of Small Cell LPN-16** **Patents** WII 21-02

**July 01, 2021**

## **Valuation of Small Cell LPN-16 Patent**

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## **1. Introduction and Executive Summary**

Inavisis Inc. (hereinafter “Inavisis<sup>®</sup>”) was retained to determine the fair market value of patents assigned to Wytec International, Inc. (WII). It is Inavisis’ understanding that the purpose of the valuation is for calculating the fair market value of the patents that describes outdoor small cells designed to increase Wi-Fi, cellular capacity and signal strength in densely populated areas.

This report sets forth Dr. Khoury’s conclusion, as well as the methodology and the procedures he used and the factors that were considered in formulating his opinion. Dr. Khoury had access to necessary material and personnel in the course of his investigation.

The Valuation Date for this appraisal assignment is July 1, 2021. For the purpose of our opinion, Fair Market Value is defined as follows:

*The price at which the subject asset would change hands between a willing buyer and a willing seller, each having reasonable knowledge of the relevant facts and neither being under compulsion to act.*

In determining the Fair Market Value of the patent portfolio, the appraiser:

1. Searched the literature for market data for the technology being valued and other comparable technologies.
2. Reviewed the patents and the strength of the claims.
3. Interviewed key company personnel that had good knowledge of the technology
4. Considered other relevant factors.

INAVISIS<sup>®</sup> specializes in the management and valuation of businesses and their intangible assets. We take a marketplace business approach to setting arm’s length values.

The author of this report is Dr. Sam Khoury, president of Inavisis, Inc. He has many years of experience in the area of business and technology valuations. A more detailed description of his expertise is outlined in Appendix B.

Dr. Khoury conducted the valuation using the Discount Cash Flow (DCF) model because he was able to find accurate market data to support this valuation approach. This valuation model gave the indication of value for the LPN-16 patented technology. Using the DCF model Dr. Khoury determined that the value of the technology is \$153.74 million.

## **2. Description of Technology**

The inventor of the technology is Robert W. Merola and the technology is a local area network system that includes modular, multi-frequency, multi-channel, upgradable transmission nodes. The portfolio consists of two patents, with the first patent having a publication number 2015/0264742 A1 has the broadest claims in describing the invention in detail. This filed patent was issued as US Patent # 9,807,032. US patent # 10,868,775 emphasizes the importance of shielding the RF frequency cards to minimize or eliminate any interference from multiple signals.

The patents are assigned to WII and the company refers to their technology as LPN-16. WII developed the LPN-16 to be a new cost effective and easily upgradable system for providing high transmission speeds through a neutral host and shared infrastructure solution that is better than other existing small cells.

The LPN provides transmission and network services for several mobile operators for wireless data, wireless video, wireless voice, and voice over internet protocol (VoIP), a local portal for emergency responders, single and multi-RF transmission, 2.4 GHz 802.11n and 5 GHz 802.11ac Wi-Fi access as well as a number of other like services. The RF slots allow an LPN-16 mobile operator to focus on one or more radio frequencies. Each RF slot covers an omnidirectional transmission. The LPN-16 may also house a non-standard RF module size which is not an option in current proprietary 4G small cell equipment.

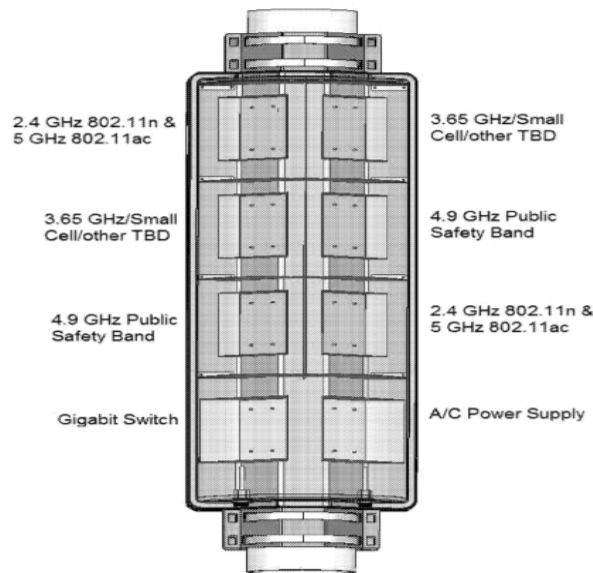


Figure 1  
Half LPN-16 Housing

The two patents describe and protect the total system to build and operate the LPN-16 that covers the individual node as well as the network that can be built based on this new concept.

### **3. Company and Technology Profile**

#### ***A. Brief History of Wytec International Inc. (WII)***

WII is a Nevada corporation that develops technology and products for the wide area networks designed to support the installation and operation of 5G infrastructure across the United States utilizing its patented LPN-16 small cell technology. WII was incorporated in November 2011 with the purchase of five United States patents directly related to local multipoint distribution service

(“LMDS”), utilized in broadband wireless access technology and originally designed for digital television transmission.

In June 2014, Wytec filed a provisional patent for its small cell (“Small Cell”) technology which they called the “LPN-16.” In December 2017, WII was granted US patent # 9,807,032 for their LPN-16. In addition to the main patent, WII has another issued US patent # 10,868,775 that covers the concept of shielding the RF frequencies from interfering with one another. The patents describe an “Upgradeable, High Data Transfer Speed, Multichannel Transmission System (“UHTMTS”).

The design of the LPN-16 has been purposed as a Small Cell device to be installed on multiple utility and other poles throughout the United States capable of supporting multiple frequencies transmitting from multiple radios without interference due to its unique patented design.

WII believes that its most significant users will include municipal governments, school systems, cable operators, wireless Internet Service Providers (“WISPs”), and carriers.

While WII is a public reporting company, its common stock is not yet quoted for public trading.

## ***B. WII Patent Analysis***

The valuation will be conducted for the following patents:

*US patent # 9,807,032 B2: “UPGRADABLE, HIGH DATA TRANSFER SPEED, MULTICHANNEL TRANSMISSION SYSTEM”*

The patent has a total of twenty-five claims. Of those claims there are two independent claims. The first independent claim describes a transmission node that has a chassis, plurality of sectors, plurality of card slots, RF Module, a switch module and Power over Ethernet (PoE) connectors and a power source. The second independent claim describes a local area network using plurality of transmission nodes or sites.

*US patent # 10,868,775: “UPGRADABLE, HIGH DATA TRANSFER SPEED, MULTICHANNEL TRANSMISSION SYSTEM”*

The patent has ten claims. Of those claims there is one independent claim that describes a transmission node similar to what is outlined in US patent # 9,807,032 B2 with specific emphasis on the radio frequency (RF) module orientation and the introduction of RF shields to lower the interference between the modules housed within the LPN-16.

### **C. Competing Patents**

The appraiser searched the patent literature for technologies that would be close to WII technology. There were two patents that could be considered close relevant art.

US patent publication 2019/0165446: “A CONCEALED COMMUNICATIONS ANTENNA AND LIGHTING FEATURE”

The patent is assigned to an Australian company called ENE-HUB PTY LTD. The technology describes a concealed communication antenna withing a lighting structure.

US patent publication 2018/0172243: “ROADWAY FIXTURE SYSTEMS WITH INTEGRATED TRANSCIEIVING EQUIPMENT”

The patent is assigned to General Electric Company out of Schenectady, NY. The technology describes a roadway fixture system that includes a lighting fixture having an outer housing that holds one or more light devise and a housing that has a radio frequency transceiver configured to send and receive cellular communications.

### **D. Conclusions**

The competing patents are different than WII patents and they involve including the RF transceiver along with a street lighting system.

The appraiser reviewed WII issued patents and confirmed that the claims cover the product and the market application that WII is pursuing. Detailed review of the patents show that the claims are broad enough and competitors might not be able to design around the WII patents.

The appraiser concludes that the competing technology will not render WII technology obsolete.

## **4. Industry Perspective**

Over the past four decades, cellular systems have evolved considerably but they are all built on the same basic components: subscriber/user devices, wireless/cellular licensed spectrum; cell sites which have antennas, radios, baseband units and power supplies and the connections that provide wired links between the cell site and the rest of the network.

The original analog cellular systems (known as 1G) simply used analog radio signals to connect between the user equipment and the cell site. In the early 1990s the industry moved to the 2G systems that are based on digital air interface. Third generation (3G) systems were introduced in the early 2000s and met the need of the consumer for mobile data. The popularity of 3G mobile data services and introduction of smartphones made it clear to the wireless industry that a more efficient network technology was required. The first 4G LTE (Long Term

Evolution) networks were introduced globally in 2009 and 2010. Several important changes were introduced by LTE, especially the Radio Access Networks (RAN) resulting in increased backhaul capacity to the cell; use of remote radio heads (RRH) on the tower, and the use of Multiple Input Multiple Output (MIMO) antennas that significantly increased the capacity for data transmission.

The consumer shifted their behavior to conduct all their activities on the cell phone. Consumers use their cell phones for entertainment, video conferencing, banking and controlling their home devices such as thermostats. The introduction of IOT, the autonomous driving car and development of social media over the internet for all forms of communication will increase the need for even higher data transmission. Current infrastructure cannot meet the future demand with existing technology and the need for advanced LTE and 5G networks are going to be critical to increase the cell density and move more application processing and content to the edge of the network<sup>1</sup>.

It is accepted in the telecommunication industry that for a successful roll out of 5G networks telecoms will need to rely on small cell technology. Small cells make use of low-power, short-range wireless transmission systems that cover small geographical areas or small proximity indoor and outdoor spaces.

Small cells have all the same characteristics of the classic base stations that have been used by the telecom companies for years. The unique aspect of small cells is their ability to handle high data rates for mobile broadband and consumer products using IOT, and high densities of low-speed-power devices. This feature makes small cells perfect for the 5G rollout that promises ultra-high speeds, connecting millions of devices with IOT capabilities and latencies in the millisecond range<sup>2</sup>.

There are three types of small cells in the industry today: Femtocells, Picocells and microcells. Table – 1 lists the different characteristics and capabilities of each cell.

LPN-16 is designed to mainly house the picocells with placement on utility poles and street light fixtures. Picocells are ideal small cells for use in large buildings, hospitals, shopping malls, schools and universities.

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<sup>1</sup> <https://www.commscope.com/globalassets/digizuite/2707-igr-evolution-of-cell-sites-wp.pdf?r=1>

<sup>2</sup> <https://www.telit.com/blog/5g-networks-guide-to-small-cell-technology/>

**Table – 1  
Types of Small Cells and Their Properties<sup>3</sup>**

Type of Small Cell	Coverage Radius	Indoor Outdoor	Transmit Power	Number of Users	Backhaul Type	Cost
<b>Femtocells</b>	30 - 165 ft 10 - 50 m	Indoor	100 mW 20 dBm	8 - 16	Wired, Fiber	Low
<b>Picocells</b>	330 - 820 ft 100 - 250 m	Indoor Outdoor	250 mW 24 dBm	32 - 64	Wired, Fiber	Low
<b>Microcells</b>	1600 - 8000 ft 500 - 2500 m	Outdoor	2000 - 5000 mW 33 - 37 dBm	200	Wired, Fiber, Microwave	Medium

## 5. Technology Valuation Methods

The following is a brief discussion of the most popular approaches used in the valuation of businesses and intangible assets. Of these, the Relief from Royalty, and the Income approaches are the basic approaches that can be used to extract the value of the technology from the value of the business as a whole. However, it is important to understand all approaches in order to clarify the importance of the method(s) used.

### *Market Approach*

Intangible assets are valued by comparing the technology under consideration to purchased or licensed transactions involving similar assets that have occurred recently in similar markets.

The Market Approach is applicable to all forms of intangible assets when there are reliable transactions that reflect value patterns or trends in the market. When data on transactions are available, the Market Approach is considered the most direct and systematic approach to the estimation of value. This approach is best if an active market exists with recent examples of arm’s length transactions for comparable intangible assets, and adequate information on their terms and conditions.

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<sup>3</sup> *ibid*



The conditions of the market will influence the expected sales or license price for an intangible asset. When using this method, one needs to consider contributing factors such as historical transactions and the participants' influences on them. With the use of Market Approach valuation, data analysis is most critical. Empirical sales and license data must be selected, analyzed, and adjusted before it can be applied to the valuation of the intangible asset. Then this data must be analyzed in the context of:

- The economic income generated by the transaction
- The risks associated with achieving that economic income
- The remaining useful life of the asset involved
- The transaction date, and
- The type of arrangement (exclusivity, lump sum, running royalties, milestone payments, paid-up value, etc.)

Most intangible assets are not traded frequently enough to rely on for a comparable market value. Moreover, it is very difficult to get enough detail on comparable transactions to be certain that we have all the elements of value that make a good comparison. In this assignment we did not find a direct comparable that we could use to value the technology.

### ***Cost Approach***

The Cost Approach borrows from the economic principle of substitution and competitive equilibrium price, i.e., an investor will pay no more for an investment than the cost to obtain another investment of equal utility. Put another way, an efficient market will adjust the value of an investment so that its market price always reflects its utility compared to available substitutes, and thus remains in equilibrium.

The price of an intangible asset is not necessarily set by the historical cost of creating the asset, nor is it necessarily set by the sum of the costs for which a willing seller would like to be compensated. Value is not necessarily related to cost. Cost, in an economic sense, is more equal to an accounting measure of cost that has been increased or decreased by existing market conditions.

The Cost Approach applied to intangible asset valuation involves different analytical methods. Two of the most common methods are the "reproduction cost method" and the "replacement cost method." The reproduction cost method uses the cost to construct an exact replica of the intangible asset being valued. The cost of the reproduction however does not consider the actual demand for the asset in the marketplace.

The replacement cost method on the other hand focuses on the cost to recreate the function or utility of the intangible asset. This replica may not perform or appear exactly the same as the intangible asset being imitated, which consequently makes it difficult to appraise.

In the Cost Approach, the original cost to develop the technology is sometimes used to determine its value. This approach does not directly consider the quantity

or duration of economic benefits that may be achieved. Therefore, this usually is not an accurate approach because the cost to develop the technology and its market value are not the same.

This approach is useful for certain intellectual properties when:

- The flow of income or other economic benefits related to the asset cannot be reasonably and/or accurately quantified.
- The intangible asset is only a small part of a larger collection of assets.
- Another form of evaluation approach is inappropriate or cannot be used.

For technologies in the earliest stages of development, the Cost Approach might be appropriate since it reflects the cost a company could avoid by purchasing, rather than duplicating, a similar R&D effort.

WII technology is ready for commercial launch and the cost approach would not capture the true value of the technology. Also, the patent claims are broad enough that it will be difficult to engineer around the LPN-16 technology.

### ***Income Approach***

The Income Approach focuses on the income-producing capability of the property. The theory of this approach is that the value of property can be measured by the present value of the anticipated net economic benefit to be received over the property's life. While the Market and Cost approaches have particular applications in certain situations and with certain types of intangibles, the Income Approach is generally applicable to all situations and types of intangible assets and intellectual properties.

The income approach is based on determining the future income or cash flow streams expected from the business under consideration. The income approach is one of the most widely used approaches because the business that developed the technology often has relatively accurate information on the main parameters that determine value.

These parameters include the following elements:

- The expected size and duration of future income or cash flows
- The size and nature of the potential market, factors affecting demand, recent and expected future trends, etc.
- The risk factors associated with the generation of the income or cash flow stream such as competitive actions, ability to attract customers, etc.

Technically, the valuation of free cash flows is recommended. This requires additional assumptions or estimates as to annual depreciation amounts, specific capital expenditures for a given situation, and additional estimates for anticipated

changes in working capital. However, all of these factors vary greatly depending on the owner or licensor of the technology.

In a typical time period, we can reasonably assume that capital expenditures will approximately equal depreciation and that changes in working capital required to finance changes in inventory requirements, or an imbalance in receivables, will have an insignificant impact on the valuation. Since no historical or other precise data of this type exists for this technology, we may rely on pre-tax profit as an acceptable surrogate for cash flow.

### ***Relief from Royalty Approach***

In the Relief from Royalty approach, the value of intangible assets is equal to the present value of the pre-tax royalties that the company is relieved from paying by owning the assets. This approach quantifies the royalties a licensee would be willing to pay for the use of the technologies and typically is based on a percentage of revenues. It is a function of the rights being granted by the licensee and the royalty payments that would be necessary to acquire those rights.

Prospective royalty payments are projected and then present valued at a suitable discount rate. Royalties are generally derived from a percentage of revenue. Since this is so, the process of forecasting avoided royalties requires a reasonable forecast of revenues from the sale of products or services associated with the intangible asset and the determination of a fair royalty rate for that asset in the market.

The relief from royalty method generally uses royalty rates that are market driven and applied to the projection of revenue as determined by the income approach.

Inavisis searched the literature to find comparable royalties. There were no royalties found for technology similar to WII technology. There were royalties that large telecom companies such as Ericson and Huawei would charge per cell phone that contains 5G technology.

### ***Conclusion***

Dr. Khoury will use the Income approach as an indication of value for the patented technology. There is enough market data to support a detailed financial forecast for the current and future growth of the revenue and the net income that could be derived from the implementation of the technology.

The income approach includes more robust numbers derived from published works of industry experts and other public information. Inavisis will use the income approach as the main determination for the value of the technology.

## **6. Economic Conditions**

### ***Global Economy***

The global market can be divided into two types of economies. The advanced economies that include U.S., Europe, Japan, China and the emerging economies that include India, South America, Africa and other Asian countries.

The global advanced GDP dropped to -4.3% in 2020 but it is expected to grow to 3.3% and 3.5% in 2021 and 2022 respectively. The US will have the highest recovery compared to Europe and Japan. China's economic growth dropped to 2% in 2020 but the forecast is for China to have a growth to 7.4% and 5.2% in 2021 and 2022 respectively.

The growth in emerging economies fell -2.6% in 2020 as a result of COVID-19 pandemic. The emerging markets forecast growth for 2021 and 2022 is expected to be 5% and 4.2% respectively. Countries in the emerging economies that depend on tourism suffered the most because of lack of travel. Recessions due to COVID-19 was reported in about 80% of the countries<sup>4</sup>.

### ***United States***

The decline in U.S. activity in the first half of 2020 was nearly three times as large as the peak decline during the global financial crisis, underscoring the depth of the recession.

For the year 2020 the U.S. output is estimated to have fallen by -3.6%. The Growth forecasts for 2021 and 2022 are projected to be 3.5% and 3.3% respectively. The potential for additional fiscal support and improved COVID-19 pandemic management in the future could result in stronger than expected growth outcomes<sup>5</sup>.

### ***Telecommunication Industry***

US telecommunications networks did an excellent job of adapting to changes to how people live, work, learn, and play since the COVID-19 pandemic. Telecommunication companies will play a large role as 5G wireless technology begins to gain traction among companies and consumers. In particular, 5G promises to provide enterprises with unprecedented, real-time visibility, insights and control over their assets, products and services.

The good news is the telecommunication industry, companies and consumers are all in agreement about the importance of moving into 5G & WiFi6. As the telecommunication industry moved from 1G to 4G the productivity improvement

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<sup>4</sup> The world Bank Group Global Economic prospects January, 2021.

<sup>5</sup> Ibid

in all aspects of business and consumer life was achieved and recognized by consumers and businesses. The 5G & WiFi6 capabilities have the potential to revolutionize every industry from manufacturing to health care to government operations. Telecommunication companies are focused on bringing the full capabilities of 5G networks to full implementation. This often involves integrating edge computing capabilities with a variety of IOT devices and other sensors.

Telecommunication industry was one of the few industries that were positively impacted by the shut down due to COVID-19. The length of the pandemic will result in an irreversible change of how companies conduct their business operations, how retailers sell over the internet and how consumers get their entertainment and enhance their communications with family and friends.

***Wytec International Inc. (WII)***

No technology exists in vacuum, and every business is impacted by the economic conditions in the U.S., rest of the world and the industry that the business operates in. WII business provides a cost savings and improvements in the telecommunication sites that will be needed to implement the 5G network.

The telecommunication industry is healthy, the federal government is providing funding to all the states because the federal government recognized the importance of internet communications for distant learning and education and having the citizens being able to schedule their vaccination appointments and monitoring the spread of diseases within the country. The Biden administration considers the implementation of the 5G networks and upgrading the US telecommunication industry as part of the essential infrastructure of the country.

All these economic conditions will have a positive impact on WII business and the implementation of its LPN-16 technology.

The appraiser will not include additional risk due to unfavorable economic conditions in the discount factor when calculating the value of the technology.

**7. Valuation Variables**

- A. Commercial Readiness Date
- B. Valuation End Date
- C. Geographic Scope
- D. Revenue Analysis
- E. Market Potential
- F. Company Net Income
- G. Discount Rate

**A. Commercial Readiness Date**

The valuation report will determine the value of the technology as of July 1, 2021. WII tested the technology on March 2014 in San Antonio, Texas. In multiple trials, WII was able to confirm the proof of concept for the LPN-16 technology. WII retained the services of South West Research Institute to conduct a validation and verification trial of the technology using different types of cell phones and different types of frequencies.

These 5G, LTE and other types of radio frequencies can be housed in the LPN-16 and can be used in telecommunications for cell phones, media streaming, autonomous driving vehicles and trucks and connecting all types of sensors in manufacturing and consumer products through IOT.

The implementation of 5G technology for transmitting of voice and data over cell phones is the immediate source of revenue. The need and the demand for transferring large amount of data in urban community is increasing and the consumer would select the service provider that can provide them with the most efficient and reliable connection. These market applications are in the implementation stage and is expected to grow exponentially in 2021.

Two other important properties in implementing the 5G network is the short latency time between transmitting and receiving of information and reliable large data transmission. These properties are very critical in the autonomous vehicles and trucks market application. The quick response between sending and receiving of data from a sensor on an automobile or a truck will be essential in the successful implementation of this technology. The timing for this market application will be 2023 for commercial trucks and complete autonomous vehicles could be around 2026<sup>6</sup>.

IOT market applications are being used today<sup>7</sup>. As automation in enterprise applications expand the need for 5G communication will increase. This market application is being used today using enhance 4G networks but as the increase in the use of IOT increase into the billions of sensors, the need to switch to 5G networks will become obvious. This market application using the 5G networks will be starting in 2023.

WII will be testing their system to host all those market applications on their LPN-16 in 2021. Revenue from LPN-16 is expected to start in 2022 and grow exponentially upon successful launch of the technology in the different market applications.

The appraiser will assume that the commercial revenue for WII from LPN-16 will begin January 1, 2022 and will grow as different market applications will need to use the neutral host LPN-16 to transmit all types of information on the 5G network.

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<sup>6</sup> <https://www.telekom.com/en/company/details/5g-network-as-foundation-for-autonomous-driving-561986>

<sup>7</sup> <https://www.gsma.com/iot/wp-content/uploads/2019/11/201911-GSMA-IoT-Report-IoT-in-the-5G-Era.pdf>

***B. Valuation End Date***

In business valuation the appraiser usually projects the revenue for few years into the future and then uses a finance formula to calculate the terminal value of the business with the assumption that the company will be operating into perpetuity.

In the valuation of patented technology, patents have limited life of 20 years from the patent filing date. In patent licensing agreements the standard is for revenue to be calculated until the last patent expires. The patent has a zero value once the patent expires since the technology becomes part of the public domain and any company could practice the patented technology. The most recent US patent #10,868,775 was filed by WII on October 25, 2017. However, the patent is a continuation in part of the previous US patent # 9,807,032 that was filed on March 24, 2014. The patent will expire on 83<sup>rd</sup> day of 2034 and the valuation will be carried out to that date.

***C. Geographic Scope***

The small cell LPN-16 technology is protected by issued U.S. patents. The appraiser will carry out the calculation with North America as the market territory. WII business could be expanded internationally. The appraisal assignment being for US patents only, Inavisis will limit the market analysis to the U.S. market only.

The calculation will be based on a neutral host scenario where WII is providing the equipment to multiple telecommunication service providers since that is one of the advantages of the technology versus other competitive products.

It will also host RF cards for autonomous driving vehicles and IOT applications.

***D. Revenue Analysis***

WII revenue will come from multiple sources. WII LPN-16 product includes multi-frequency, multi-channel, upgradable transmission nodes. These transmission nodes include radio frequency modules that may be configured to include 5G and LTE and other frequency bands.

***E. Market Potential***

The total number of small cell sites to cover the USA is 1,682,000 based on a detailed analysis of the densely urban, urban and densely suburban locations. The total potential number of covered population when fully deployed is about 154 million based on census data on the number of people that live in these areas where the technology will be needed in the near future. The capital to install one site is estimated to be \$15,000.

The lease per slot within the LPN-16 is \$250-\$500 per month depending on the location and the density of the residents using 5G network. Inavisis assumed that on average WII will be able to lease seven of the sixteen slots available on each LPN-16 module. The annual revenue per site will range from \$21,000 to \$42,000 for an average of \$31,500.

The appraiser assumed that WII will be able to implement the technology in 2022 and will be able to have rapid growth the first three years to 2025. This growth rate is reasonable considering that the industry is expected to expand at a compound annual growth rate (CAGR) of 59.6% through 2027<sup>8</sup>. In 2025 WII will start national roll out of the technology. The appraiser assumed that the growth of WII market penetration will level off to 15% growth rate.

Inavisis using the above growth rates shows that the total sales of WII by 2027 will be 19,027 units. The global market in 2027 is 26,726,000 units<sup>9</sup>. The north America market is the second largest market and in 2020 it represented 27% of the global market<sup>10</sup>. This gives WII a market penetration rate in North America of 0.26%.

#### ***F. Company Net Income***

The company revenue was derived from two sources. The first source is the sale of the LPN-16 hardware to city or state governments. City and state governments will get their funding from the federal government and state and local taxes to generate the connected city concept.

The unit price for the LPN-16 hardware is \$15,000 per unit. The second source of revenue is from leasing of the slots within the LPN-16. The lease revenue will be shared by the state or city and WII. This revenue was calculated from the yearly lease rate per slot times occupancy rate of seven slots of the sixteen slots available on the LPN-16 module.

This is possible because of the neutral host concept that WII is implementing in their business that allows for such an occupancy density. WII is sharing half the revenues from the lease program with the city that bought the LPN-16 modules. The final revenue for WII was calculated by dividing the total revenue from each module by half.

Inavisis calculated the typical cost of goods sold (COGS) to be about 70% of revenue.

The total sales, administration and research & development (SARD) is 17%.

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<sup>8</sup> <https://www.grandviewresearch.com/industry-analysis/5g-infrastructure-market>

<sup>9</sup> <https://www.grandviewresearch.com/industry-analysis/small-cell-5g-network-market>

<sup>10</sup> <https://www.grandviewresearch.com/industry-analysis/5g-services-market>



This will result in earnings before interest, tax, depreciation and amortization (EBITDA) of 13%. The appraiser compared this EBITDA used for WII with the EBITDA of three companies in the telecommunication industry. The average EBITDA for Nokia, Fujitsu and CASA Systems, Inc. was 13%.

The appraiser assumed that the depreciation and amortization of the LPN-16 module will cancel out and the interest will be minimal with little or no impact on the final valuation.

A tax rate of 27% was used based on the new rules for taxing businesses under the Trump administration that provides a federal rate of 21% and an average state tax rate of 6%.

This tax rate is in line with the analysis that KPMG did and showed how the tax rate for the Americas is 27%<sup>11</sup>.

### ***G. Discount Rate***

The discount rate is the measure of risk of the asset being valued. The valuation exercise is for intangible assets, this type of asset has a higher risk than the return on equity for the business.

The appraiser will use the discount rate using the general formula calculated using the Capital Asset Pricing Model (CAPM) where WII is an operating business.

$$\text{DR} = \text{Risk Free Rate} + \beta (\text{Equity Risk Premium}) + \text{Asset Class Risk} + \text{ERP}_{\text{Adj}}$$

**Table 1**  
**Elements of the CAPM Calculation**

<b><i>Cost of Equity Calculations</i></b>	
<b>Risk Free Rate<sup>12</sup> (R<sub>f</sub>)</b>	2.5%
<i>Duff and Phelps Adjusted Risk Free Rate</i>	
<b><i>Premia</i></b>	
<b>Market Risk Premium over Risk Free Rate(MRP)<sup>13</sup></b>	5.5%
<i>The long-horizon expected return of stocks over risk free securities in terms of the combined effect of market risk and size risk.</i>	
<b>Beta for Telecom Equipment<sup>14</sup></b>	0.87%

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<sup>11</sup> <https://home.kpmg.com/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html>

<sup>12</sup> <https://www.duffandphelps.com/-/media/assets/pdfs/publications/articles/dp-erp-rf-table-2020.pdf?la=en&hash=CEC22C0DD9928B72337F9B7E7536C753B0513063>

<sup>13</sup> <https://www.duffandphelps.com/insights/publications/cost-of-capital/us-equity-risk-premium-recommendation-2017?gclid=EAlaIqObChM19a7bzY-w2gIVFdkCh2kvgzO>

<sup>14</sup> [http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/Betas.html](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/Betas.html)

<b>Asset Class Risk<sup>15</sup> (Patents)</b>	8%
<b>Adjustments</b>	
<b>ERP Adjustment</b>	1.0%
<i>An adjustment made to reconcile a historically-derived ERP with a forward-looking ERP as of the valuation date.</i>	

$$\begin{aligned} \text{DR} &= 2.5\% + 0.87 (5.5\%) + 8\% + 1.0\% \\ \text{DR} &= 16.28\% \end{aligned}$$

## **8. Valuation of WII LPN-16 Patent**

Appendix C outlines the mathematical calculation using the different independent variables discussed above.

The value of patent using the discount cash flow model gave an indication of value for the patent of \$153.74 million.

## **9. Summary and Conclusion**

The appraiser reviewed the claims in the patent portfolio to check for the strength and breadth of the protection they provide.

The valuation approach selected to arrive for an indication of value is the Income approach.

The different independent variables used in determining the value of the technology were investigated and researched for accuracy.

Inavisis calculated the fair value of the LPN-16 patent using the DCF Model to be \$ 153.26 million.

The appraiser will rely on the DCF model as the final value of the technology.

***The valuation exercise supports a final value is \$ 153.74 million.***

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<sup>15</sup> The appraiser added a 8% additional risk for the valuation asset class being for patents, knowhow and trade secrets.

## **Certification**

The undersigned appraiser certifies that:

- This report was prepared by Dr. Sam Khoury, president of Inavisis, Inc. and it is in compliance with Uniform Standards of Professional Appraisal Practice (USPAP) of the Appraisal Foundation.
- Inavisis, Inc. and the appraiser has no present or contemplated future interest in the subject company, or of the subject assets of this appraisal report. In addition, the appraiser has no personal interest in, or bias, with respect to the parties involved.
- Data were obtained from sources believed to be reliable. All facts known to the appraiser, which have bearing on the values of the subject assets, have been considered, and no facts of importance have been intentionally omitted herein.
- When Data was not available, the appraiser relied on his own experience and knowledge from previous valuations.
- The appraiser's compensation for this report was in no way contingent upon the value estimates contained in this report, nor was it contingent upon anything other than delivery of this report.
- To the best of the appraiser's knowledge and belief, the reported analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the Business Valuation Standard of the American Society of Appraisers (ASA), the Uniform Standards of Professional Appraisal Practice and the Code of Professional Ethics.
- The statements of fact contained in this written appraisal report, upon which the analyses, opinions, and conclusions expressed herein are true and accurate.
- Our work with respect to prospective financial information did not constitute an audit or an examination, compilation, or agreed upon procedures engagement of a financial forecast in accordance with standards established by the American Institute of Certified Public Accountants, and we do not express assurance of any kind thereon.
- Inavisis, Inc. or the appraiser is not required to give testimony or be in attendance at any court or administrative proceeding with reference to the business appraised unless additional arrangement, including compensation have been agreed to in advance.

**Inavisis, Inc.**



Sam Khoury  
President  
Inavisis, Inc.

Date: June 30, 2021

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## **Appendices**

A - Inavisis, Inc.

B - Biography Dr. Sam Khoury

C - NPV Calculation for LPN-16

D- Statement of Limiting Conditions

## **A - Inavisis Inc.**

Inavisis, Inc. (INAVISIS®) specializes in the management and valuation of technology driven businesses and their intangible assets. We take a marketplace business approach to setting arm's length values and imputed royalty rates.

The INAVISIS® licensing team works with all aspects of licensing. Companies hire us to do parts or all of this process. We are often hired to identify the most marketable technologies or trademarks so that internal corporate discussions and projections can be resolved or substantiated.

It is INAVISIS®'s objective to help corporations generate additional revenue utilizing their intellectual assets. We give our clients the tools necessary to succeed throughout the licensing process, and help them form new partnerships.

INAVISIS® is contacted frequently to determine the damages that result from infringement of a patent, theft of a trade secret, or confusion in a trademark or trade dress. As expert witnesses, we stand ready to support attorneys, arbitrators, and mediators in the demanding task of litigation and dispute resolution.

INAVISIS® clients are Fortune 500 companies that are interested in the effective management of their intellectual properties and in determining their potential value.

INAVISIS® consults with their clients on all aspects of intellectual asset management and helps them to derive significant value from their patents, trademarks, trade secrets and know-how.

**B - Biographies**  
**Sam Khoury Ph.D., MBA**  
**President**

**Current Status**

Dr. Khoury is serving as the president of Inavisis, Inc., a national consulting firm headquartered in San Diego, California. The company is dedicated to leveraging intellectual properties and valuing intangible assets.

Dr. Khoury conducted the valuation of patented technology in several industries and his work passed the audits of the IRS and other auditing firms such as KPMG. In damage calculations and litigation Dr. Khoury's reports resulted in quick settlement of disputes with both parties recognizing the valuation report as fair and balanced.

**Previous Professional Experience**

Dr. Khoury served as the president of CONSOR<sup>SM</sup> for about two years. He is an educator on the principles of valuation of intellectual property and prolific writer on the topic of intellectual asset management. Dr. Khoury served as a trustee of the Licensing Executive Society (LES) and coordinated the operations of four committees. He is a regular invited international speaker at the LES, American Institute of Patent Lawyers Association (AIPLA) and American Society of Appraisers. Dr. Khoury has developed the curriculum and training courses for the National Technology Transfer Center in Wheeling, West Virginia, on technology assessment and technology valuation. Those courses are offered to educate industry, university and government professionals.

Dr. Khoury was one of the main architects of the Intellectual Asset Management Model that helped The Dow Chemical Company generate significant revenue from proper management of intellectual properties. Dr. Khoury served for two years as Dow's Intellectual Asset Manager for Chemicals and Metals. In that capacity, he implemented the intellectual asset management model and the processes for the proper management of intellectual properties in the Chemicals and Metals business. The implementation of this process reduced the costs of maintaining the patents by over \$10 million and led to a more focused effort on business relevant research.

Dr. Khoury was the Sr. Intangible Asset Appraiser for The Dow Chemical Company. He worked in the Licensing & Catalyst Business and as an Intangible Asset Appraiser for five years. Over this period Dr. Khoury valued many technologies with a wide range of market applications. As the Senior Intangible Asset Appraiser for Dow, Dr. Khoury took all the course work necessary to value businesses from the American Society of Appraisers.

Dr. Khoury has presented on the topic of valuation of intellectual properties at numerous meetings, conferences, and seminars. These include the Licensing Executive Society, Institute for International Research (IIR), Industrial Research Institute (IRI), AIPLA and the American Society of Appraisers. Professionals from NASA, Navy, and U.S. government laboratories and

*Inavisis, Inc.*

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agencies have attended his valuation courses, as well as personnel from Du Pont, Ford, Eastman Chemical, Allied Signal, Delphi, and many other Fortune 100 companies.

## **C- NPV Calculation**





## **D - Statement of Limiting Conditions**

### **The appraisal report is subject to the following general assumptions and limiting conditions:**

1. No investigation has been made of, and no responsibility is assumed for, the legal description of the property being valued or legal matters, including title or encumbrances. Title to the property is assumed to be good and marketable unless otherwise stated. The property is assumed to be free and clear of any liens, easements, or encumbrances unless otherwise stated.
2. Information furnished by others, upon which all or portions of this appraisal are based, is believed to be reliable but has not been verified except as set forth in this report. No warranty is given as to the accuracy of such information.
3. This report has been made only for the purpose stated herein and shall not be used for any other purpose.
4. Neither INAVISIS<sup>®</sup> nor any individual signing or associated with this report shall be required by reason of this report to give further consultation, provide testimony, or appear in court or at other legal proceedings unless specific arrangements have been made.
5. No responsibility is taken for changes in market conditions, and no obligation is assumed to revise this report to reflect events or conditions that occur subsequent to the date hereof.
6. It is assumed that all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can readily be obtained or renewed for any use on which the value estimate contained in this report is based.
7. Full compliance with all applicable federal, state, and local zoning, use, environmental, and similar laws and regulations is assumed unless otherwise stated.
8. Responsible ownership and competent management are assumed.
9. The opinion of value is predicated on the financial structure prevailing as of the date of the appraisal.
10. Other than matters involving (i) negligence, misconduct or omission, (ii) violation of any law, regulation or ruling, (iii) any act outside the scope of any assignment authorized by the client or (iv) failure to perform or breach of any term or condition of an assignment, INAVISIS<sup>®</sup>'s maximum liability relating to services rendered under this report (regardless of form of action, whether in contract, negligence, or otherwise) shall be limited to the charges paid to INAVISIS<sup>®</sup> for the portion of its services or work products giving rise to liability and INAVISIS<sup>®</sup> shall not be liable for consequential, special, incidental, or punitive losses, damages or expenses (including, without limitation, lost profits, opportunity costs, etc.) even if it has been advised of their possible existence

11. INAVISIS® shall: (i) promptly notify the client in writing (by fax and confirmation letter) of any claim, suit, action or proceeding that is to be subject to this indemnity, (ii) permit the client in its discretion to control the defense or settlement of such claim, suit, action or proceeding, and (iii) cooperate fully with the client in such defense or settlement. This provision shall survive the termination of this assignment for any reason.