SOFTWARE LICENSE AGREEMENT

This Software License Agreement (the "Agreement") is made and entered as of May __, 2019 (the "Effective Date"), by and between V-Soft Communications, L.L.C. ("V-Soft") whose principal place of business is 128 S. Chestnut St., Olathe, KS 66061, and Iowa Public Television, ("Licensee"), whose principal place of business is 6450 Corporate Dr., Johnston, IA 50131.

RECITALS

A.   V-Soft is the owner of the computer software products identified in Schedule A hereto.

B.   Licensee desires to obtain a license to use said licensed software products on the Licensee's system.

NOW, THEREFORE, in consideration of the mutual promises herein, the parties intending to be legally bound, hereby agree as follows:

1.   Definitions.

(a)   "Intellectual Property Rights" shall mean rights under patent, trademark, copyright and trade secret laws, and any other intellectual property or proprietary rights recognized in any country or jurisdiction worldwide, including but not limited to, moral rights and similar rights.

(b)   "License Fees" shall have the meaning set forth in Schedule B.

(c)   "Licensed Software" shall mean the object code version of each of the V-Soft products identified on Schedule A and any updates, fixes, patches, customizations and enhancements thereto delivered by V-Soft to Licensee.

(d)   "Minimum System Requirements" shall mean the hardware and software specifications set forth on Schedule A.

(e)   "Security Key" shall have the meaning set forth in Section 2(c).

2.   Grant of Rights.

(a)   License to Use Software.   Subject to the terms and conditions of this Agreement, V-Soft grants to Licensee a limited, non-exclusive, nontransferable right and license to use the Licensed Software (the "License").

(b)   Scope of Use.   Use of the Licensed Software hereunder is subject to the following restrictions:

(i)   The Licensed Software is for Licensee's internal business purposes only. Licensee shall not grant sub-licenses, leases or other rights in the Licensed Software to any third party, or provide or permit the use of the Licensed Software to any third party except when granted written permission from the V-Soft for Licensee's independent contractors or to other state agencies personnel such as the Office of the Chief Information Officer. Licensee shall not transmit the Licensed Software by telecommunications, or permit remote telecommunications access to the Licensed Software by any third party.

(ii)   The Licensed Software and the Security Key shall only be used by Licensee's employees. The Licensed Software must be installed and operated on a system meeting the Minimum System Requirements.

(iii)   Licensee may make a reasonable number of copies of the Licensed Software to the extent necessary to exercise the rights granted pursuant to the License hereunder and for bona fide back-up, recover, and archival purposes.

(iv)   The Licensed Software may only be used by Licensee in conjunction with the Security Key and in accordance with such other authorization and/or security measures (including, by way of example only, authentication codes, usernames and passwords) as are employed by V-Soft with respect to the Licensed Software, which measures may not be disabled or otherwise avoided.

(v)   Licensee shall not modify the Licensed Software or the Security Key, nor translate, decompile nor create or attempt to create, by reverse engineering or otherwise, the source code from the object code supplied hereunder, or adapt, reverse engineer or otherwise modify the Licensed Software or the Security Key, in any way or use it to create a derivative work therefrom. Portions of the Licensed Software may not be used independently of the Licensed Software. Licensee agrees to secure and protect the Licensed Software and ensure that there is no breach, compromise or violation of V-Soft's rights and title to the Licensed Software, by Licensee's employees, consultant's or independent contractors.

(vi)   Licensee agrees to comply fully with all relevant United States export controls. Software, including technical data, is subject to U.S. export control laws, including the U.S. Export Administration Act and its associated regulations and certain other export laws, restrictions, and regulations, and may be subject to export or import regulations in other countries; but only to the extent such laws apply to Licensee, which is a state agency Licensee agrees to comply fully with all laws and regulations of the United States and other countries ("Export Laws") that are applicable to Licensee to assure that neither the Licensed Software, nor any direct products thereof are (1) shipped, transferred, or exported, directly or indirectly, in violation of Export Laws, either to any countries that are subject to U.S export restrictions or to any end user who has been prohibited from participating in the U.S export transactions by any federal agency of the U.S government, or (2) used for any purpose prohibited by Export Laws.

All rights not expressly granted to Licensee hereunder are expressly reserved to V-Soft.

(c)   Lease of Security Key. Subject to the terms and conditions of this Agreement, V-Soft hereby leases to Licensee a hardwaresecurity key, which is required to be physically plugged into a computer to operate the Licensed Software ("Security Key"). Licensee shall not transfer or permit the Security Key to be used by any other person or entity without the prior written consent of V-Soft. In the event the Security Key leased to Licensee is lost, misplaced or stolen, without regard to whether Licensee is at fault, V-Soft will replace such Security Key for a fee equal to the cost of the replacement Security Key plus applicable shipping. All title and interest in the Security Key shall remain the property of V-Soft following such payment.

(d)   Right of Entry. Licensee hereby authorizes V-Soft to enter its premises in order to inspect the Licensed Software and Security Key in any reasonable manner during regular business hours to verify Licensee's compliance with the terms of this Agreement, provided however that any such inspection does not interrupt Licensee's business operations, programming and other business activities. V-Soft will not have access to any confidential or proprietary information of Licensee, and V-Soft will comply will all security and business procedures and any reasonable requests of Licensee while performing any inspection.

3. Maintenance and Support of Product. For a period of thirty (30) days after delivery of the Licensed Software, V-Soft shall make available to Licensee, at no additional charge, direct telephone technical support during normal business hours, between 8 AM and 5 PM CST, Monday through Friday, excluding holidays. After such thirty (30) day period, V-Soft shall provide maintenance and support only if, and to the extent that, Licensee and V-Soft enter into a separate Software Support and Maintenance Agreement which terms acceptable to Licensee. V-Soft does not hold itself out as a professional expert and adviser regarding Licensee's computer systems or information needs. Licensor is not responsible for obsolescence of the Licensed Software that may result from changes in Licensee's requirements.

4.   Ownership of the Licensed Software and Security Key.

(a)   Sole and Exclusive Property. The Security Key and Licensed Software and all copies thereof provided to or made by Licensee, are and shall remain the sole and exclusive property of V-Soft. Licensee acknowledges and agrees that, as between V-Soft and Licensee, the Licensed Software and all improvements, enhancements, modifications and derivative works that are embodied in, related to, or represented by, the Licensed Software (and all Intellectual Property Rights thereof) are, and at all times will be, the sole and exclusive property of V-Soft. Licensee is not purchasing the Licensed Software, but rather is obtaining only a license thereto.

(b)   Notices. Licensee shall not delete, alter, cover, or distort any copyright, trademark, or other proprietary rights notice placed by V-Soft in or on the Licensed Software.

5. License Fees and Taxes.

(a)   License Fees. Subject to applicable laws, rules and procedures of the State of Iowa and its agencies, Licensee agrees to pay V-Soft the License Fee in the amount set forth in Schedule B. V-Soft shall submit an invoice to the Licensee for payment of the License Fee specified in Schedule B. All invoices submitted by V-Soft shall comply with all applicable laws, rules, regulations, policies, requirements (including any applicable federal laws, rules or requirements) concerning payment of such fees, charges or other claims and shall contain appropriate documentation as necessary to support the fees or charges included on the invoice and all information reasonably requested by the Licensee. The Licensee shall review the invoice for compliance with this Agreement and applicable laws, rules, regulations, policies, and requirements. The Licensee will pay all approved amounts in conformance with Iowa Code section 8A.514 and 11 Iowa Admin. Code 41.1(2), and all other applicable laws, rules, regulations, policies and requirements. Notwithstanding anything herein to the contrary, the Licensee shall have the right to dispute any invoice submitted for payment and withhold payment of any disputed amount and to offset against the payment of the License Fee any amount owed by V-Soft to the State of Iowa in accordance with State of Iowa laws.

(b)   Late Payments. If Licensee fails to timely pay any amount due to V-Soft hereunder, Licensee agrees to pay late charges in conformance with Iowa Code 8A.514.

6. Confidentiality. Except as provided or contemplated herein, and subject to applicable federal, state or international laws, rules or regulations (including, without limitation, Iowa Code Chapter 22) the Licensee shall not intentionally disclose to Third Parties (excluding governmental entities and independent contractors) any information of Licensor that is marked or otherwise clearly identified by Licensor as Confidential Information without the prior written consent of Licensor. Licensor shall limit such identification to information it reasonably believes is entitled to confidential protection pursuant to such applicable laws, rules and regulations, including Iowa Code Chapter 22. Notwithstanding the foregoing, the Licensee may disclose Licensor's confidential information pursuant to (i) any legal, judicial, or administrative processes; and/or (ii) applicable laws, including Iowa Code Chapter 22.Notwithstanding the foregoing, the Licensee may disclose Licensor's confidential information pursuant to (i) any legal, judicial, or administrative proceedings, subpoena, summons, order, ruling or other legal or administrative processes; and/or (ii) applicable laws, rules, or regulations. In such event, the Licensee shall provide prompt notice to Licensor of the circumstances giving rise to the Licensee's disclosure. Licensor acknowledges that the Licensee is subject to Iowa Code Chapter 22 and other laws, rules and regulations governing public records. If a request is made to view or otherwise access Licensor's confidential information pursuant to such laws, rules or regulations, the Licensee will promptly

notify Licensor of the request. In the event the Licensee reasonably determines that such information is not a confidential record or that it does not have enough information to determine whether the information is or is not a confidential record, the Licensee may release such information

6. Disclaimer of Warranty; Limitations on Liability.

Disclaimer of Warranties. THE LICENSED SOFTWARE IS PROVIDED "AS-IS." TO THE MAXIMUM EXTENT PERMISSIBLE BY LAW, V-SOFT DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

7. Term and Termination.

(a)   Term. The License granted under this Agreement shall be perpetual, unless sooner terminated in accordance with this Agreement.

Termination Upon Breach. In the event Licensee breaches any material provision of this Agreement and such breach is not cured within sixty (60) days after receipt of written notice of such breach, Licensor may terminate this Agreement at which time Licensee shall terminate any and all use of said software and return the security key to Licensor. . Licensee may terminate this agreement with 30 days written notice to V-Soft and return the Security Key.

Effect of Termination. Upon termination of the License, Licensee agrees immediately to: (i) cease all use of the Licensed Software; (ii) return to V-Soft the Security Key and all copies of the Licensed Software; (iii) remove all copies of the Licensed Software, and all parts thereof, from all storage media in its possession or under its control; and

(iv) provide V-Soft with written certification of its compliance with the foregoing. Termination of this Agreement shall not relieve Licensee from its confidentiality obligations hereunder, which shall expire upon one year after the date of termination. Upon termination, Licensor shall have the right to remotely disable the Licensed Software.

8. General Provisions

(a)   No Assignment. This Agreement may only be assigned by Licensee voluntarily to another agency or governmental entity of the State of Iowa with written permission of Licensor, or by operation of law. This Agreement shall apply to, inure to the benefit of, and be binding upon, the parties' permitted successors and assigns. Except as provided above, neither party may assign this Agreement to any other person, entity, firm or corporation, in whole or in part, without the express written approval of the other party

(b)   Notices. All notices and demands hereunder shall be in writing and shall be served by personal service or by mail at the address of the receiving party set forth in this Agreement (or at such different address as may be designated by such party by written notice to the other party). All notices or demands by mail shall be by certified or registered mail, return receipt requested, or by nationally- recognized private express courier, and shall be deemed complete upon receipt.

(c)   Governing Law. This Agreement shall be governed in all respects by, and construed in accordance with, the laws of the State of Iowa, without giving effect to the choice of law principles thereof. Any and all litigation or actions commenced in connection with this Agreement, including after expiration or termination of this Agreement, shall be brought in Des Moines, Iowa, in Polk County District Court for the State of Iowa, if jurisdiction is proper. However, if jurisdiction is not proper in the Iowa District Court for Polk County, but is proper only in a United States District Court, the matter shall be commenced in the United States District Court for the Southern District of Iowa, Central Division. V-Soft irrevocably; (i) consents and agrees that any legal or equitable action or proceeding arising under, in connection with or arising out of this Agreement shall be brought and maintained exclusively in the aforesaid courts; (iii) submits to and accepts, with respect to any such action or proceeding, for it and in respect of its properties and assets regardless of the physical or legal situs thereof, generally and unconditionally, the jurisdiction of the aforesaid courts; and (iii) waives any objection to such jurisdiction based on forum non conveniens or otherwise. This provision shall not be construed as waiving any immunity to suit or liability, in state or federal court, which may be available to the Licensee or the State of Iowa, including sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the Constitution of the United States or otherwise.

(d)   Severability. . If any provision of this Agreement is found to be illegal or unenforceable, then, notwithstanding such finding, this Agreement shall remain in full force and effect and such provision shall be deemed stricken.

(e)   Force Majeure. Neither party shall be responsible for delays or failure of performance resulting from acts beyond the reasonable control of such party. Such acts shall include, but not be limited to, acts of God, strikes, walkouts, riots, acts of war, epidemics, failure of suppliers

to perform, governmental regulations, power failure(s), earthquakes, or other disasters. Performance times shall be.

(f) Survival of Certain Provisions. Sections 4, 6, 8(d) and 9 shall survive termination or expiration of this Agreement.

(g) InjunctiveRelief. Licensee acknowledges that, in the event of its breach of any of the provisions of this Agreement, V-Soft will not have an adequate remedy in money or damages. V-Soft shall therefore be entitled to seek an injunction against such breach from the court specified above. V-Soft's right to seek injunctive relief shall not limit its right to seek further remedies.

(h) All Amendments in Writing. No provisions in Licensee's purchase orders or in any other business forms employed by Licensee and sent to V-Soft will supersede the terms and conditions of this Agreement, and no supplement, modification, or amendment of this Agreement shall be binding, unless executed in writing by a duly authorized representative of each party to this Agreement.

(i) No Waiver. A failure of either party to exercise any right provided for herein shall not be deemed to be a waiver of any right hereunder.

considered to be extended for a period of time equivalent to the time lost because of such delay.

(j) Entire Agreement. The parties have read this Agreement and agree to be bound by its terms, and further agree that it, along with any Schedules hereto, and any Software Support and Maintenance Agreement between the parties constitutes the complete and entire agreement of the parties and supersedes all and merges all previous communications, oral or written, and all other communications between them relating to the License and to the subject matter hereof. No representations or statements of any kind made by either party that are not expressly stated herein shall be binding on such party.

(k) No Third Party Beneficiaries. The parties agree that this Agreement is for the benefit of the parties hereto and is not intended to confer any rights or benefits on any third party, and that there are no third party beneficiaries to this Agreement or any party or specific provision of this Agreement.

IN WITNESS WHEREOF, the parties, have executed this Software License Agreement by their duly authorized representatives as of the date set forth above.

V-Soft Communications, L.L.C.

By: _____

Gray _____

Title: Vice President _____

Date: May 17, 2019 _____

Iowa Public Television

By: _ame: _____ John

Name: Bill Hayes _____

Title: _____

Date: _____

SCHEDULE A
TO
V-Soft Communications, L.L.C.
SOFTWARE LICENSE AGREEMENT

Licensee Name:	Iowa Public Television	Security Key #:	21109 (HASP HL NetHASP USB + Web)
Licensee Contact:	Bill Hayes	Agreement Date:	May 17, 2019
Bill To:	PO Box 6450	Ship To:	6450 Corporate Dr.
	Johnston, IA 50131		Johnston, IA 50131

Licensed Software

Probe 5 - Professional (1 license), USGS 1:100k and 1:250k DRG Topo Maps (1 license)

*Previously purchased software, not covered under this license:

Probe 3- Professional (1 license), SearchTV Pro (1 license), Probe 4 - Professional (1 license), NED 03 Sec. (1 license), USGS 03 Sec. (1 license), 2000 U.S. Census with Housing Breakdown (1 license), 1990 U.S. Census (1 license), 2010 U.S. Census - Probe 3/4 AM Pro 2 (1 license), 2000 U.S. Census P.L. (1 license), 2015 U.S. Census Estimate (1 license), FCC 30 meter (2015) US (1 license), PlotPath (1 license), 2012 U.S. Census Estimate (1 license), 2017 U.S. Census Estimate (1 license)

Minimum System Requirements

For Probe 5:
x86 Based Processor with 4 GB RAM 64-
Bit Windows 7, 8, 10
6 gigabytes of hard drive space for installation of supporting databases.
. Additional raster and terrain data may take up to 300 GB but can be run off of external USB Hard Drive.

For TVStudy:
x86 Based Processor with 4 GB RAM 64-
Bit Windows 7, 8, 10
100 gigabytes of hard drive space for installation of supporting databases.

For All Other V-Soft Software:
x86 Based processor with 1 GB RAM
Windows XP, Vista, 7, 8, or 10 operating systems.
6 gigabytes of hard drive space for installation of all supporting databases.
High resolution terrain data may require up to an additional 30 GB.

SCHEDULE B
TO
V-Soft Communications, L.L.C.
SOFTWARE LICENSE AGREEMENT

Licensee Name:	Iowa Public Television	Security Key #:	21109 (HASP HL NetHASP USB + Web)
Licensee Contact:	Bill Hayes	Agreement Date:	May 17, 2019

<u>License Fees:</u>

The one-time, fully-paid-up License Fee to be paid by Licensee for use of the Licensed Software shall be $3,825.00, which shall be paid to V-Soft in one lump-sum according to Section 5. Notwithstanding any other provision in the Software License Agreement between the parties, Licensee shall not install or use the Licensed Software until such time as V-Soft has been paid the License Fees in full.

VSoft
COMMUNICATIONS®
R.F. Communications Software
and Engineering Consulting

PO Box 1033
Cedar Falls, IA 50613

Quotation

DATE	QUOTE NO.
4/15/2019	1348

NAME / ADDRESS
Iowa Public Television PO Box 6450 Johnston, IA 50131

Ship To
Iowa Public Television Attn: Bill Hayes Director, Engineering 6450 Corporate Dr. Johnston, IA 50131

FOB	

ITEM	DESCRIPTION	COST	QTY	Total
Probe 5 Upgrade.	Upgrade of Probe 4 Professional to Probe 5 Professional	4,500.00	1	4,500.00
Key Exchange	HASP Key exchange - Move from Network to Network + web security (including this Key Exchange with Probe 5 Upgrade)	0.00	1	0.00
	Subtotal			4,500.00
NAB Discount	NAB show discount	-15.00%		-675.00
Shipping	Standard Shipping Charges	25.00	1	25.00

RECEIVED

MAY 6 2019

BUSINESS OFFICE

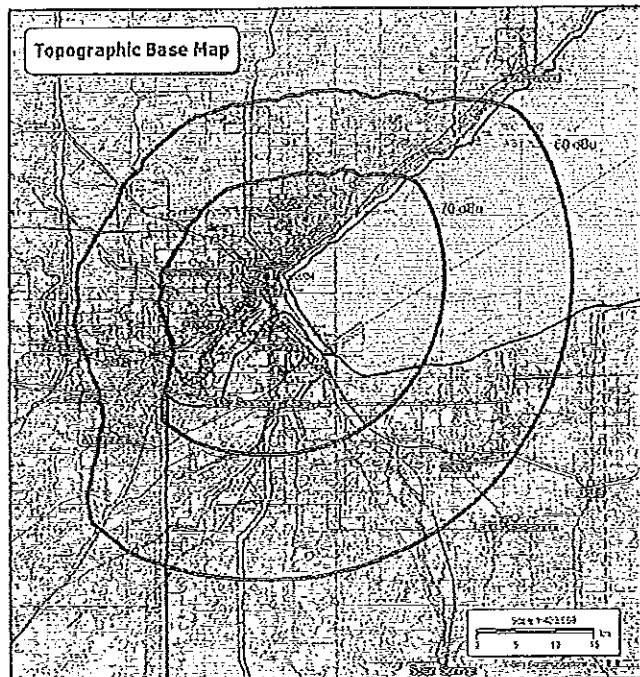| If Sales/Use Tax was not included, your state may require you to file a tax return & pay any tax due.	**Total**	$3,850.00

Probe 5™

R.F. Propagation Prediction Software
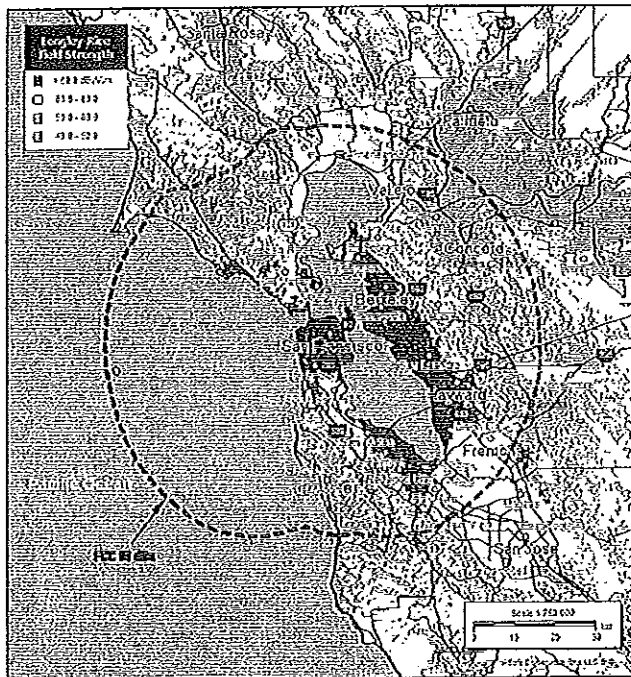
Probe 5™ FM Longley-Rice Coverage Study

FCC Contours on a Topographic Base Map

Probe 5™ is designed to have all the tools you will ever need for predicting radio propagation in the 20 to 20,000 MHz frequency range. The WYSIWYG interface allows you to produce maps of any size with user configurable labels, legends, and map scales.

This new version is designed to handle the simplest to most difficult propagation prediction studies for FM, TV and DTV. Probe 5 features numerous propagation models including standard FCC, Longley-Rice, NSMA OHLOSS, Okumura/Hata/Davidson and COST-231/Hata, point-to-point path analysis, line of sight/shadow, the FCC's PTP and PTP2 methods. ITU models are also available.

Probe 5 uses a unique geographic mapping engine that combines the best polygon graphics with precision coordinate information, map projections and USGS topographic maps. The program produces stunning output, with appearances that rival even the best of the atlas makers. Features such as highway colors, line thickness, road markers, city names, lake and ocean colors, font names and sizes are fully selectable. The user can configure every aspect of Probe 5's maps right down to the street level to give them that perfect look.

Single or multiple station coverage studies, incoming or outgoing interference, D/U ratio, and DTV OET-69 analysis are available for user selection. For interference studies,

Probe 5 automatically identifies stations to which interference is caused as well as those stations that cause interference.

Probe 5 can use the finely detailed FCC 30 meter terrain elevation data base, our latest 3 arc-second terrain database based on satellite corrected National Elevation data, USGS and SRTM 3 arc-second databases, and several of our 30 arc-second terrain databases. Earth-wide coverage prediction is also available using our world terrain elevation and mapping databases.

Signal values can be examined down to the street level, including street names. Custom tick-marks can be added by street address or by using a set of latitude and longitude coordinates. Color maps in the PDF format can be produced directly or output as graphic files, such as BMP, JPEG, & GIF. Other geographic data output formats supported include SHP, MIF, KML, and KMZ.

For coverage and interference analysis, Probe 5 includes high resolution; block level, decennial U.S. Census population data. Mexico, Canada, and world population databases are also available.

Probe 5 contains a complete set of editing tools for adding text and other information to maps. It comes packaged with mapping data and the latest TV, DTV and FM FCC engineering databases with directional antenna patterns.
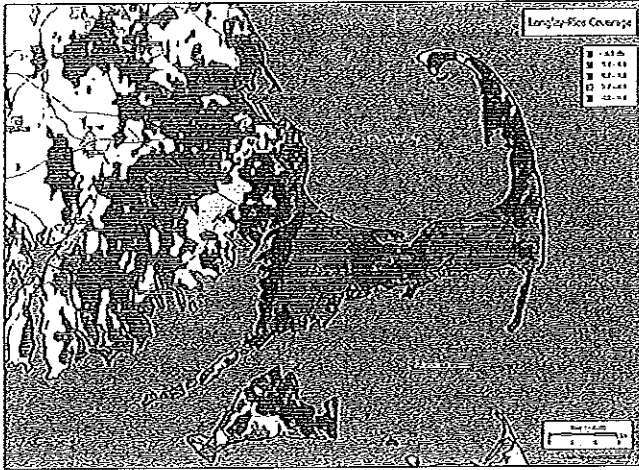
V-Soft Communications - The Leader in Broadcast Engineering Software

For more information on this or one of our many products, please visit our website at www.V-Soft.com or call us at (800) 743-3684.

Probe 5™ Program Levels – Pick the level that is right for you.

Basic Level

The basic level of Probe 5 is an affordable tool for plotting coverage. This level provides the user with the ability to perform detailed Longley-Rice and FCC contour coverage studies. It comes with the latest decennial U.S. Census database for basic population reports and a land cover database for coverage studies. An antenna pattern editor is part of basic package as well.

The WYSIWYG mapping and selectable map scales makes mapping with Probe 5-Basic simple and pleasing to the eye. Colors and font sizes are user defined for custom map making. Navigating the FCC database for existing stations is easy with the program's extensive database searching capabilities.

Probe 5-Basic is an affordable program for users looking for an excellent cost-effective solution to coverage mapping needs. The Longley-Rice map on the left was created using Probe 5-Basic. The basic level can be upgraded at any time to the next standard level.

Standard Level

Probe 5-Standard includes all the features of the basic level, and more. In addition to coverage studies, the standard level performs Longley-Rice FM interference studies. After the reference station is determined, the program automatically searches the FCC database for interferers and plots the interference signal areas on a map (see incoming interference study graphic on reverse page).

Probe 5-Standard also includes a profile viewer to analyze path profiles using the selected terrain database. An FCC database culling engine allows advanced searches by call sign, state, city, licensee, or stations within a certain distance from a reference point. The detailed population reports include county, racial, and housing figures based on U.S. census information.
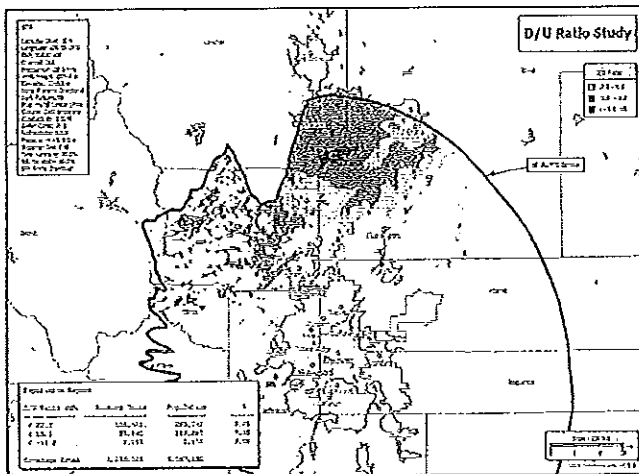
Additional features in the standard version are street level roads, gradient shading for Longley-Rice coverage, Delta h calculation, Okamura/Hata/Davidson and PTP1 propagation models. Upgrades to the professional level are available.
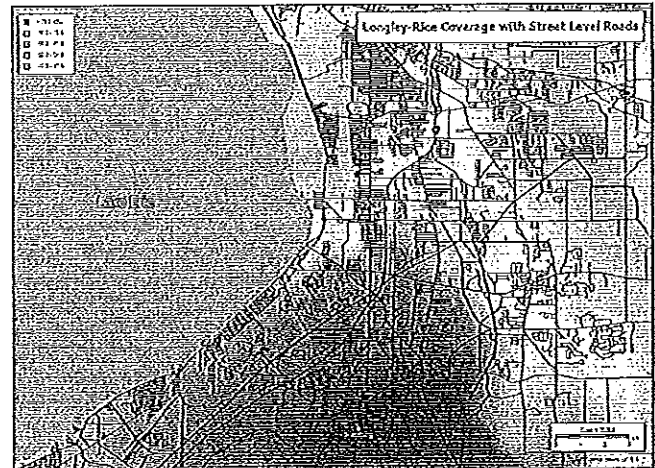
Professional Level

The professional level of Probe 5 offers top-of-the line propagation prediction tools for the most demanding needs. Map backgrounds can be selected from rasterized topographic maps to the V-Soft shape maps. Among the many powerful Probe 5-Professional features is a capability that allows the user to plot city boundary polygons and to show the extent of coverage to the city. To do this Probe 5 uses a contour/polygon overlap tool that automatically finds the area of overlaps, shades them, and counts population and area within those regions.

The D/U study in Probe 5-Professional allows the user to choose the "desired" and "undesired" stations, define the D/U ratios, and set the minimum signal threshold. Antenna pattern directivity can also be evaluated. Other tools include census density, terrain, and land cover backdrops, Longley-Rice urban clutter factor, NSMA OHLOSS Propagation Model and more.

V**Soft**
COMMUNICATIONS®
R.F. Communications Software
and Engineering Consulting

For more information on this or one of our many products, please visit our website at www.V-Soft.com or call us at (800) 743-3684.

Sole Source Letter

This letter is to provide notification that V-Soft Communications is the sole source provider of R.F. propagation analysis and broadcast engineering software applications developed by the company. These software applications include:
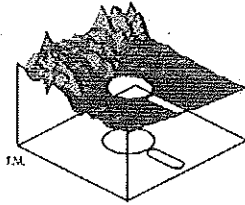
- Probe™
- AM-Pro™
- FMCommander™
- RFHaz™
- Microwave Pro™
- PlotPath™
- TVStudy for Windows™

John Gray
Vice President, Director of Research & Development
jgray@v-soft.com

V-Soft Communications LLC
128 S. Chestnut St.
Olathe, KS 66062

SOFTWRIGHT LLC

Terrain Analysis Package™ Overview and New System Price List

SoftWright LLC, a GSA contract holder, is the developer of the Terrain Analysis Package (TAP™). TAP™ is used by federal agencies, state/local public safety departments, energy companies, utilities, and consultants to evaluate radio transmitter sites; predict radio coverage; conduct intermodulation and adjacent channel interference studies; and design microwave/vhf/uhf links. TAP™ is used on all seven continents in over seventy countries.

TAP™ is comprised of individually licensed software modules, which may be purchased in almost any combination depending on user requirements for area coverage studies, path profiles, interference studies, presentation of results, and budget. Popular TAP™ configurations are described below.

Package A: TAP™ Minimum for Basic Coverage Studies and Path Profiles

TAP™ Module	Price
Basic Mapping	$1313.70
RF Facilities	$1821.60
Longley-Rice Propagation	$1653.30
Total	$4788.60

Package B: TAP™ Minimum for Path Analysis

TAP™ Module	Price
Basic Mapping	$1313.70
RF Facilities	$1821.60
Microwave Reliability	$1197.90
VHF/UHF Reliability	$1197.90
Total	$5531.10

Package C: Most Popular TAP™ Package for Area Coverage Studies

TAP™ Module	Price
Basic Mapping	$1313.70
RF Facilities	$1821.60
Longley-Rice Propagation	$1653.30
Bullington Propagation	$1653.30
Land Use	$623.70
3D Display	$569.25
Aggregate Coverage	$975.15
Adjacent Channel Int	$975.15
Total	$9585.15

Package D: Most Popular TAP™ Package for Microwave/VHF/UHF Path Analysis

TAP™ Module	Price	TAP™ Module	Price
Basic Mapping	$1313.70	Microwave Reliability	$1197.90
RF Facilities	$1821.60	VHF/UHF Reliability	$1197.90
3D Display	$569.25	Shadow Map	$480.15
Land Use	$623.70	Antenna Elevation	$405.90
		Total	$7610.10

Other Products & Services: SoftWright offers global topographical and land use data, annual software maintenance subscriptions, and many options for training and support. Contact sales@softwright.com.
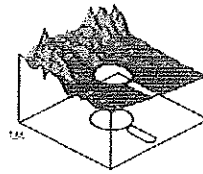
SOFTWRIGHT LLC
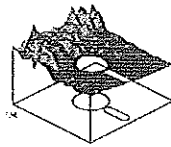
TAP™ is comprised of individually licensed software modules. A 10% discount is given for an initial new license purchase. A 40% discount is given for additional license purchases. TAP™ may be installed on individual computers running 64-bit Windows operating systems or on a server for use as a single- or multi-seat network installation. Software annual maintenance is provided at 20% of Individual Module pricing. See www.softwright.com for complete module descriptions and example applications.

Complete TAP Module Listing, Brief Description, and Pricing

TAP™ Module	Description	Price (Individual Module)	Price (New License)	Price (Additional License)
Basic Mapping	Required for all TAP users	$1463.00	$1316.70	$877.80
RF Facilities	Required to save facility descriptions	$2024.00	$1821.60	$1214.40
Longley-Rice	Most popular and flexible propagation model	$1837.00	$1653.30	$1102.20
Bullington	Knife-edge diffraction propagation, preferred in rough terrain and for air-to-ground studies	$1837.00	$1653.30	$1102.20
Okumura	VHF and UHF land mobile radio propagation	$1837.00	$1653.30	$1102.20
Rounded Obstacle	Diffraction over a single isolated obstacle – good for buildings and other discrete interferers	$1837.00	$1653.30	$1102.20
Broadcast / SMR	(FCC Part 73) VHF and UHF propagation for TV and FM broadcasting and specialized mobile radio (from FCC Part 90)	$1254.00	$1128.60	$752.40
Carey	(FCC Part 22) Land mobile radio propagation	$1254.00	$1128.60	$752.40
Hata-Davidson	Propagation in 30 – 1500 MHz uses Height Above Avg Terrain (HAAT)	$1254.00	$1128.60	$752.40
Egli	Simple RF propagation model for gently rolling terrain	$1254.00	$1128.60	$752.40
3D Display	Export 3D coverage and path studies to Google Earth, Maptitude, ArcGIS, etc.	$632.50	$569.25	$379.50
Shadow Mapping	Quickly ID areas with line of sight, Fresnel zone clearance, etc.	$533.50	$480.15	$320.10
Pattern Distortion	Model the horizontal plane pattern distortion of an omni-directional antenna when mounted on a metal tower	$533.50	$480.15	$320.10
Stacked Antenna	Add multiple vertically-stacked horizontal plane antenna patterns	$247.50	$222.75	$148.50
Aggregate Coverage	Uses multiple area coverage studies to calculate a resultant composite area coverage	$1083.50	$975.15	$650.10
Adjacent Channel Int.	Compute the interfering effects between stations	$1083.50	$975.15	$650.10
AutoCoverage*	Automate setting up coverage specifications	$665.50	$598.95	$399.30
Microwave Reliability	Design and evaluate microwave link reliability	$1331.00	$1197.90	$798.60
Antenna Elevation	Calculate a suitable antenna elevation above ground level	$451.00	$405.90	$270.60
Reflection Analysis*	Locate potential reflection points along a path	$495.00	$445.50	$297.00
VHF/UHF Reliability	Design and evaluate link reliability in UHF and VHF bands	$1331.00	$1197.90	$798.60
AutoPath*	Automate path specifications eliminating manual data entry	$451.00	$405.90	$270.60
Land Use	Import USGS Land Use Land Cover (LULC) files and then use them in the analysis	$693.00	$623.70	$415.80
Intermod	Compute intermodulation products	$1149.50	$1034.55	$689.70

* These modules are only available in the legacy TAP 6.3 software at this time.

SOFTWRIGHT LLC

TERRAIN ANALYSIS PACKAGE (TAP™)

United States Topographical and Land Use Data Price Sheet

SoftWright LLC, a GSA contract holder, is the developer of the Terrain Analysis Package (TAP™). As a terrestrial RF propagation modeling tool, TAP™ requires local elevation data in order to perform propagation calculations. The more accurate the elevation data, the more accurate the TAP™ field strength predictions will be. Digital elevation data are available from a wide variety of sources; however, many SoftWright customers choose to purchase topographical data directly from SoftWright. These data are shipped along with the software at the time of purchase. Depending on the size of the data file, it is provided on DVD or USB hard drive for use with TAP™.

Land Use – Land Cover data further improve the accuracy of TAP™ calculations by allowing the software to consider local land use characteristics (e.g., urban, suburban, agricultural, forested, etc.) in the calculations.

SoftWright currently recommends U.S. elevation data of 1/3 second (≈10m) resolution in FLT format. Elevation data are also available in 1 second (≈30m) and, in limited urban areas, 1/9 second (≈3m). SoftWright also offers the latest USGS NLCD 2011 Land Use – Land Cover data (1 second resolution) for the continental United States. These data sets are priced by CONUS, individual state, or square degree. *Discount of 40% provided for a duplicate copy of data purchased at the same time as the original set.*

Recommended CONUS Complete Data Set

Data Description	Price
CONUS 1/3 Sec FLT	$3500
CONUS NLCD 2011	$1600
3TB USB 3.0 Hard Drive	$125
Total	$5225

CONUS Data Pricing by Square Degree

Data Description	Price per square degree
1/3 Sec FLT	$25
NLCD 2011	$15

Data Delivery on Solid State Drives

For large studies, data access accounts for the majority of study execution time. USB 3.0 SSDs may reduce study times by 80% or more compared to rotating hard disk drives.

Large data sets (e.g., CONUS) will be delivered on SSDs at no additional charge. For delivery of smaller data sets on SSDs, contact SoftWright for current pricing information.

Other Products & Services: SoftWright offers annual software maintenance subscriptions and many options for training and support. Contact sales@softwright.com.

SOFTWRIGHT LLC
TERRAIN ANALYSIS PACKAGE (TAP™)
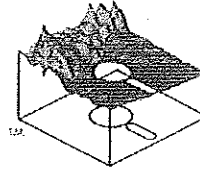
Topographical and Land Use Data Price by State

State-by-State Pricing Based on Area: Note that due to overlap, the price of purchasing adjacent states is typically less than the sum of the prices of the individual states

State-by-State Pricing for 1/3 Sec FLT Elevation and NLCD 2011 Land Use – Land Cover Data

State	1/3 Sec FLT Price	NLCD 2011 Price	State	1/3 Sec FLT Price	NLCD 2011 Price
Alabama	$475	$285	Montana	$1300	$780
Alaska	$2450*	-	Nebraska	$675	$405
Arizona	$875	$525	Nevada	$875	$525
Arkansas	$550	$330	New Hampshire	$250	$150
California	$1575	$945	New Jersey	$225	$135
Colorado	$700	$420	New Mexico	$975	$585
Connecticut	$175	$105	New York	$775	$465
Delaware	$50	$30	North Carolina	$675	$405
Florida	$675	$405	North Dakota	$875	$525
Georgia	$650	$390	Ohio	$475	$285
Hawaii	$350	$210	Oklahoma	$650	$390
Idaho	$850	$510	Oregon	$950	$570
Illinois	$875	$405	Pennsylvania	$550	$330
Indiana	$525	$315	Rhode Island	$50	$30
Iowa	$650	$390	South Carolina	$450	$270
Kansas	$675	$405	South Dakota	$750	$450
Kentucky	$575	$345	Tennessee	$625	$375
Louisiana	$650	$390	Texas	$2250	$1350
Maine	$575	$345	Utah	$700	$420
Maryland	$250	$150	Vermont	$250	$150
Massachusetts	$200	$120	Virginia	$625	$375
Michigan	$800	$480	Washington	$750	$450
Minnesota	$1075	$645	West Virginia	$400	$240
Mississippi	$450	$270	Wisconsin	$725	$435
Missouri	$700	$420	Wyoming	$800	$480

*Alaska 1/3 Sec FLT Data Set is incomplete – contact SoftWright for a map of the coverage area