

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Amendment of Part 101 to permit	)	WT Docket No. 02-146 and
development and registration of millimeter	)	Public Notice DA 04-672
wave services	)	
	)	

**PROPOSAL TO DEVELOP AND MANAGE  
INDEPENDENT DATABASE OF SITE REGISTRATIONS  
BY LICENSEES IN THE 71-76 GHZ, 81-86 GHZ AND 92-95 GHZ BANDS**

Frequency Finder, Inc.<sup>TM</sup>, a female-owned and operated Florida Corporation, plans to offer the services contemplated by this Docket. Frequency Finder's offices are at 101 Demorest Square Suite E, Demorest, Georgia 30535, with off-site server facilities on Dick's Hill, Mount Airy, Georgia. Frequency Finder is well qualified to serve as a database manager, as it has for years provided wholesale coordination services to Part 90 Frequency Advisory Committees ("FACs"). Frequency Finder is jointly owned with RadioSoft<sup>TM</sup>, an established provider of radio engineering, service, interference calculation and coordination software.

The Public Notice sets forth requirements for successful millimeter wave database managers. We list and discuss each in turn.

***Database Manager duties and responsibilities.*** Pursuant to the *Report and Order*, the Database Managers will be required to

- develop, manage and use a single link registration database—to be shared with all Database Managers if WTB selects more than one during this filing window or in the future—which will serve as a clearinghouse and repository of current and historical link information for all registered non-Federal Government links;

Our existing client/server database will serve this purpose well, with a few additions as noted below. Should there be multiple managers selected, Frequency Finder will share its database in any reasonable manner. The language "develop ... a single ... database ... to be shared" leaves unclear whether such multiple managers may or must

- 1) jointly develop a database;
- 2) negotiate sharing all or part of a solely developed database, whether existing or to be designed; or
- 3) share data between separately maintained databases, as is now done between the database service providers (there are currently five) for the Part 90 FACs. We note that this data sharing could be done in a matter of seconds, rather than the current 24 hour requirement.

Frequency Finder is currently in the final phases of adding to its existing client/server database everything which would be required to include millimeter waves, and has sufficient experience to enable it to successfully conclude any of the above three scenarios.

- make all Database Manager services available to all parties on a first-come, first-served and non-discriminatory basis;

Frequency Finder has a "hands-off" coordination service already with its six Part 90 FACs, and will maintain service availability to all millimeter wave applicants on a first-come, first-served and non-discriminatory basis.

- ensure that non-Federal Government links are coordinated with Federal Government operations through NTIA’s planned automated coordination mechanism, and promptly notify the licensee when a link submission receives a green- or yellow-light response from NTIA;

Frequency Finder already is in discussion over database issues with NTIA, most of whose agencies now use RadioSoft’s engineering software for service and interference prediction. We expect the pass-through time to return NTIA green- or yellow-light status to be less than 500 ms after receipt from NTIA. If NTIA coordination response time is longer than a few seconds, or until the automatic NTIA response is available, an email with its response could be automatically generated if desired, or the application could be automatically set to proceed to the next processing step.

- verify that individual link registrations are compliant with Part 17 of our rules and, if required, properly registered on the Commission’s Antenna Structure Registration Database;

Frequency Finder maintains a web-based service for airport location and glide slope detection which flags all requisite structure locations, as well as checking against the ASR data. It is automatically updated.

- update the link registration database based on FCC actions on ULS affecting licenses in these bands, such as registration deletion, or license expiration, renewal, transfer or assignment;

Frequency Finder currently processes all ULS data daily for deletions, license expirations, renewals, transfers and assignments, and will add millimeter wave registrations as soon as available.

- add or delete link information to the database based upon review and processing of link submissions from licensees on a non-discriminatory, first-come, first-served basis;

Frequency Finder will do so.

- withdraw unconstructed and deleted links from the database, modify the database when it is determined that a licensee has not met construction and loading requirements, and maintain documentation of such actions (with notice to WTB for links also registered in ULS);

Typical database practice would serve this purpose by flagging a record rather than deleting it, much as is now done in ULS and CDBS. As for modifications for unconstructed or insufficiently loaded links, we doubt that it is intended that the database manager(s) should be the entities making such determinations. Those entities (FCC or users themselves, for their own registrations) will have administrative access to the database for flagging and documenting deleted assignments. Records of all such actions will be preserved and made accessible to appropriate inquiry.

- maintain a complete and accurate history of all links;

As above, historical data will be preserved as well as all current data, along with date/time stamped records of all actions.

- administer the formal interference protection procedures, based upon “first-in-time” information recorded in the database;

Once notified of an interference complaint, Frequency Finder will notify the relevant licensee(s) about their interference protection rights, which are date-sensitive and are based either on the date and time NTIA coordination is triggered (in the case of a yellow light), or on the date and time that the link is first registered (in the case of a green light). In the event of harmful interference, the first-in-time registered link is entitled to protection, and the later-in-time registered link must be discontinued or modified to resolve the problem. Thus, a licensee who experiences harmful interference should report this to the us, so that we may identify the problem link. If the complaining licensee’s link is not first-in-time, we will explain that the licensee can either accept the interference or move the link. If the complaining licensee’s link is first-in-time, we will inform the later-registered overlapping operator, who must resolve any identified interference immediately. Should there be multiple database managers, we will provide for lateral agreements and notification procedures for prompt interference resolution.

- provide NTIA, FCC and all interested parties access to the database at all times;

Frequency Finder’s databases are accessible 24/7/365 save for planned and announced maintenance.

- establish, at a minimum, the following report capabilities/utilities for NTIA and FCC:

- ability to query on basic link elements such as licensee name, FCC call sign, registration number, transmit coordinates and transmit frequency or frequency band;
- ability to query and retrieve all link registrations associated with a specific licensee or FCC call sign;
- ability to retrieve all link registrations within a specified geographic area;
- ability to retrieve all link registrations filed or accepted within a specified time period;
- ability to retrieve or request a report of all links removed or deleted from the database within a specified time period;
- provide automated interface or reports as required by NTIA to allow them to maintain an accurate and complete database;
- upon request, a complete download of the registration database in a format specified by FCC;
- ability to provide other reports to NTIA and FCC and respond to information requests as necessary;

Frequency Finder's existing Query engine now provides all these functions save the last three, which will be added.

- enter into a Memorandum of Understanding (MOU) with the United States Government memorializing its duties and responsibilities, and agreeing to serve a five-year term, which could be renewed by the Commission.

Frequency Finder will do so.

The Public Notice also sets forth requirements for successful millimeter wave database proposals:

***Database Manager proposals.*** Each proposal must include:

- a reference to this public notice (DA 04-672) and WT Docket No. 02-146;
- the name and a description of the entity proposing to be a database manager, and a description of its qualifications;

These first two are in the initial paragraph.

- a description of measures the applicant will take to:
  - accept registration filings and maintain the database as specified in this public notice;

Filings will be accepted by

- 1) Web-based form entry
- 2) Client/Server direct upload
- 3) Email, in various formats for both single and batch filing

Web-based entry is appropriate for small numbers of link registrations, and will be similar to entry forms now available in ULS, though optimized for templates and entry of only those fields required of millimeter wave applicants. Error checking will be applied on all possible fields to ensure proper data entry. For example, maps with appropriate references will be generated for user coordinate validation; terrain databases can roughly validate site AMSL entry, glide slope can be tested, etc.

Client/Server programs permit batch data entry, validation and submission, as well as all the above features. Email submission will be possible only by pre-arrangement with customers to reduce data error.

- ensure registrations are properly coordinated with Federal Government operations;

We will coordinate with NTIA using their notification process until an automatic process evolves and is tested. Discussions are underway with NTIA about the specific transfer protocols.

- ensure antenna registration and compliance with Part 17;

We will test submitted links against the ASB data location and height data, structure height against airport runway glide slope data, and any other requirements that are or may be required by Part 17.

- update the database to reflect link registrations that have lost protection rights;

Updating records by flagging records for loss of protection will normally be by notification from designated entities. Other entities (FCC or NTIA, for example) may be granted direct access in order to delete protection rights. The effect of these flags will be practically instantaneous.

- provide public access to the link registration database;

Public access will be provided for limited queries.

- otherwise meet the requirements set forth in this *Public Notice*;

- how it will ensure that link information is added to or deleted from the database (based upon review and processing of link submissions from licensees) on a non-discriminatory, first-come, first-served basis;

All data submitted will be time/date stamped. Upon automatic validation of data entry, which will occur after a user sends or saves link information in the case of manually typed entry, and immediately upon receipt in the case of batch filed data, another time/date stamp will be recorded as the information is sent to ULS and/or NTIA for approval. Frequency Finder and its affiliates will have no opportunity to delete, delay or discriminate in any way with data flow.

- a description of security measures the applicant will take to safeguard database information, including off-site data back-up facilities and measures to ensure continuity of access to the database in the event its operations are interrupted;

Our database is and will be maintained in our server farms on a mountaintop concrete enclosure with full UPS, buried utility entry, backup power systems, redundant bandwidth and climate control. It currently serves thousands of users from small business and public safety entities to large corporations such as Motorola and Clear Channel. Data is backed up multiple times daily. Access to the data may be configured from any internet-capable site through our Gateway servers, permitting off-site backup and/or fully functional storage at any desired location.

- a description of the query capabilities and reports the applicant proposes to provide to the Commission and NTIA;

FCC and NTIA will be able to query on any single field or combination of fields or on a list of field values—for example, a file of licensee names could be referenced and the query asked to match any of the names in the list. Many fields (dates, for example) will allow a range to be specified as a query or part of a query. The query form requires no typing or syntax, only checkboxes and simple field entry.

- a certification that the applicant will be able and willing to work with other Database Managers should WTB decide to designate more than one;

Frequency Finder and RadioSoft certify that they will individually and jointly be willing and able to work with other Database Managers, in the way that already exists between Part 90 FACs or in any other convenient manner.

- how it will prevent any conflicts of interest, including but not limited to link registrations relative to any entity that is affiliated directly or indirectly with the Database Manager (or clients/customers of same); alternatively, certify and agree that neither it nor any affiliates will be licensees;

Since we now have customers which will no doubt be licensees, Frequency Finder can only certify and agree that it will not itself, nor will any of its direct affiliates be licensees. However, our database entry system provides for status tracking and external reporting in all phases of data entry and coordination, making it impossible for us to successfully exhibit any form of preferential treatment between any users or FACs. Existing records may be queried so that any user may independently establish its validity, date/time stamp or status. We assume this data is to be a matter of public record much like the Part 90 Granted data and will enable querying of it in much the same manner as we now do in Part 90.

- a description of optional services it intends to offer, including specifically whether it intends to offer coordination services;

Frequency Finder will offer wholesale, retail and license preparation assistance coordination services in addition to other services that may be developed as the band evolves. We can easily foresee, for example, an automatic site optimization service which could, given the submission of more possible sites than would be necessary, analyze existing links to produce viable links with a minimum of sites, add factors such as site acquisition costs, etc.

- its proposed timetable for testing, demonstration and operational launch of the database; and

As with WTB and NTIA, there are at least two contemplated offerings. A small modification of the existing service we now provide to Part 90 users can permit initiation of database registration as early as late May of 2004, provided that notification of our selection and successful execution of MOU's is completed in April, 2004. However, we have a different database in development that will permit, among other things:

- 1) Distributed processing using gateway computer services
- 2) Three dimensional visualization of link coordination
- 3) User-configurable interfaces
- 4) Command-line batch processing
- 5) Very high resolution map reference data (1 meter lateral in most places)

We do not expect to be able to fully demonstrate this improved service, which will be very useful for millimeter wave links, before August of 2004. The engine on which this database will be run is in testing now, and will be demonstrable in April, 2004. Implementation can begin six months after selection notification.

- the name, address, telephone number and signature of a contact person familiar with the proposal.

The contact person familiar with the proposal is

Peter Moncure

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/s Peter Moncure (I certify by this line that I have personally typed and submitted this document on behalf of Frequency Finder, Inc. and that my signature is on file at the FCC)

We submit that there are unique requirements for the millimeter wave service that will closely fit with our current development plans in other services, thus permitting considerable public service advantages. RadioSoft and Frequency Finder are jointly in development of a true three-dimensional near- and far-field propagation tool, the reason for which is to better be able to model, quantify and visualize reflections and multipath effects. This tool is ideally suited to millimeter wave applications well into the visible spectrum, and is perfectly married to our existing database structures, which will permit web-based and client/server input, querying and visualization. Since we are in the third year of development of this tool, much of the cost of development will not have to be borne by users of the millimeter wave registration system, thus providing services quickly, at very low cost, and in some cases without any cost to the public.

Frequency Finder, Inc. has been following this proceeding with great interest and will be very happy to be part of the future of last-mile wireless systems. Though with the number of locations to be managed and coordinated data processing challenges loom, we stand ready and applaud the Commission for its decision to maximize the use of millimeter wave spectrum by site-specific licensing.

Peter Moncure, Vice President

Frequency Finder, Inc.

March 26, 2004