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July 1, 2009

VIA ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Unlicensed Devices in the TV Broadcast Bands, ET Docket No. 04-186
Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, ET Docket No. 02-380
Erratum to *Ex Parte* Presentation

Dear Ms. Dortch:

On June 25, 2009, WSdb, LLC ("WSdb"), by its attorneys, submitted a notice of *ex parte* presentation ("Notice") in the above-referenced proceeding. Included with the Notice was a copy of presentation ("Presentation") discussed at the meeting described in the Notice. WSdb hereby submits this erratum to correct the spelling of Mr. Morton Meyerson's name in the Presentation. A conformed copy of the Presentation as modified by this erratum is attached for the sake of clarity and convenience.

Please direct any questions to the undersigned.

Respectfully submitted,

/s/ Tom W. Davidson
Tom W. Davidson, Esq.

Enclosures

WSDB LLC
JUNE 25, 2009 MEETING WITH THE FCC'S OFFICE OF ENGINEERING AND TECHNOLOGY
RE WHITE SPACE GEOLOCATION DATABASE

I. WSdb LLC ("WSdb") is small-business focused on the development of a database solution for white space devices in accordance with FCC rules.

A. WSdb was founded by Neil Keon, a former consultant of Media Technology Ventures, LLC f/k/a First Broadcasting, LLC ("First Broadcasting"). Mr. Keon designed and supervised development of "SpectraMax"™ software (patents pending) for First Broadcasting to identify business opportunities and specify re-engineering scenarios in broadcast radio and digital television. As a founder of RateFlex Systems, Inc., Mr. Keon developed a universal contact engine for mobile phones (patents pending). The focus of each of the aforementioned software programs was the establishment of scalable, efficient databases with fast response times.

B. Mr. Keon has a Ph.D in Systems Engineering from the University of Pennsylvania, a Masters of Science in Systems Science from the University of Ottawa, and a Bachelors Degree in Economics and Finance from McGill University. Mr. Keon also has been published in several technical journals, including the IEEE/ACM Transactions on Networking, Operations Research and INFORMS Journal on Computing. In addition, Mr. Keon is listed as the inventor on several pending applications for patent, such as "System and Method for Managing Use and Access of a Communication Network," "Systems and Methods for Calculating Height Above Average Terrain," and "Communication Spectrum Maximization Systems and Methods."

C. WSdb is funded by 2m Companies, Inc. ("2M Companies"), a private investment firm founded by Morton Meyerson, that invests in, *inter alia*, early-stage technology companies and small businesses in particular. 2M Companies is focused upon investing in businesses that will have a positive impact on society and believes that WSdb's open-access philosophy (discussed below) will have such an impact. Mr. Meyerson previously served as Chief Executive Officer and President of Perot Systems Corp. and President of Electronic Data Systems. Mr. Meyerson is a director of WSdb, and is committed to the company's development and success.

D. As a small-business, WSdb has the flexibility and access to capital (from 2M Companies) necessary to develop an innovative solution to the challenges faced by operation of white space devices in the television bands.

II. WSdb seeks to develop a scalable database to support mobile white space devices (*i.e.*, Mode II – Independent Personal/Portable Devices).

A. Designing a database to support mobile white space devices presents unique challenges, primarily due to the significant number of repeated database queries required to provide available channel lists on a real-time basis. This large volume of database queries may overburden servers and result in significant lag times between queries and

responses. Thus, a database solution that specifically targets mobile devices and minimizes response times is essential to the development of mobile white space devices.

B. Due to the difficulty in providing channel lists at the pace required to support mobile white space devices, WSdb anticipates that many database developers initially will build databases that primarily support fixed and Mode I – Client Personal/Portable Devices. Although such databases likely will be accessible by mobile devices pursuant to the FCC's white space order, WSdb believes they will be inadequate to serve mobile white space devices for the reasons discussed above. WSdb believes that focusing on fixed and Mode I devices likely will delay the development of mobile white space devices, and that a reliable database solution for mobile white space devices is essential to the development and marketing of such devices.

C. WSdb is focusing its efforts on developing a scalable database to support mobile white space devices. Specifically, WSdb is developing a proprietary method to compute white spaces in compliance with the applicable FCC rules and to process large numbers of scenarios, all while reducing response times significantly. It is WSdb's belief that the simplest and most profound benefit of designing a database to support mobile white spaces devices is increased capacity over a master/client architecture. Moreover, WSdb believes that its scalable database solution will be a viable alternative if sensing technologies prove to be unworkable, or if such technologies significantly increase the costs of mobile devices. The database developed by WSdb also can be used to address concerns relating to spectrum inventory (*e.g.*, it can offer a type of emergency service that could alert public safety or military agencies as to the availability of open spectrum in bands other than the television band).

D. WSdb believes the development of a white spaces network presents a unique and significant opportunity to enable and encourage roaming (as compared to wifi networks) and therefore is developing a business plan that will encourage individual, open networks. More specifically, WSdb intends to create a price and cost structure to offer its database services to a large number of users of various devices.

III. WSdb supports a secure database architecture that will encourage the development of next generation white space devices while protecting proprietary methods of calculating white spaces.

A. As an initial matter, WSdb believes that the rules for white space devices adopted by the Commission establish a good framework for the development of white space databases. The rules are very specific with respect to the definition of white spaces, and leave no room for ambiguity. At the same time, the rules are drafted in such a manner as to provide potential database administrators with flexibility to develop innovative database solutions. For example, the rules as drafted permit – but do not require - the proposal of the White Spaces Database Group to split database functionality. Although WSdb does not object to the White Spaces Database Group proposal, it nevertheless emphasizes that the FCC should not modify its rules or draft the Public Notice to require such a functional split because to do so would impose unnecessary costs on a potential database provider that would otherwise choose to create its own database of license and

spectrum use information. Rather, the Public Notice should be drafted broadly to encourage innovation.

B. WSdb intends to apply with the FCC for authority to serve as a database administrator (in addition to any other parties the FCC believes have the requisite qualifications). As an independent entity providing database administration services, WSdb can encourage competition among providers, which will ultimately spur development of new white space devices. Moreover, as discussed, WSdb is willing to cooperate on the use of standards in order to facilitate the development of an open-access white spaces network. In addition, WSdb encourages the FCC to consider an entity's status as a small business when selecting a white spaces database administrator because a well-funded small business database provider can offer significant benefits in terms of innovation and flexibility.

C. Because, as discussed, rapid responses to database queries are essential to mobility, WSdb urges the FCC to encourage database administrators to develop solutions that will support mobility and provide prompt responses and evaluate potential database administrators based on the foregoing criteria.

D. As is contemplated by the FCC's White Space Order, database administrators should agree to a standard protocol to share device registration data that is not otherwise captured in the FCC's databases. In addition, the industry should work together to develop standards for serving channel lists to device manufacturers. Standards for channel list requests and replies are necessary to ensure portability of devices from one database administrator to another, and thus are critical for roaming and encouraging the development of open networks.

E. The specific methods a database administrator develops to calculate white spaces and determine available channels should remain proprietary. This will enable developers to compete to develop systems that reduce response times in accordance with the FCC's stated objectives. Importantly, the FCC should develop a means to ensure that solutions developed by potential database administrators will produce accurate results. To this end, WSdb encourages the FCC to outline in the Public Notice a process to create a library of test points and develop a definitive set of elevation data and F(50,50)/F(50,90) tables to be used by potential database administrators.

F. WSdb believes that security will be a critical issue in systems design and thereby urges the FCC to permit potential database providers to use dynamic IP addressing. In addition to addressing security issues, dynamic addressing also promotes scalability of database solutions.

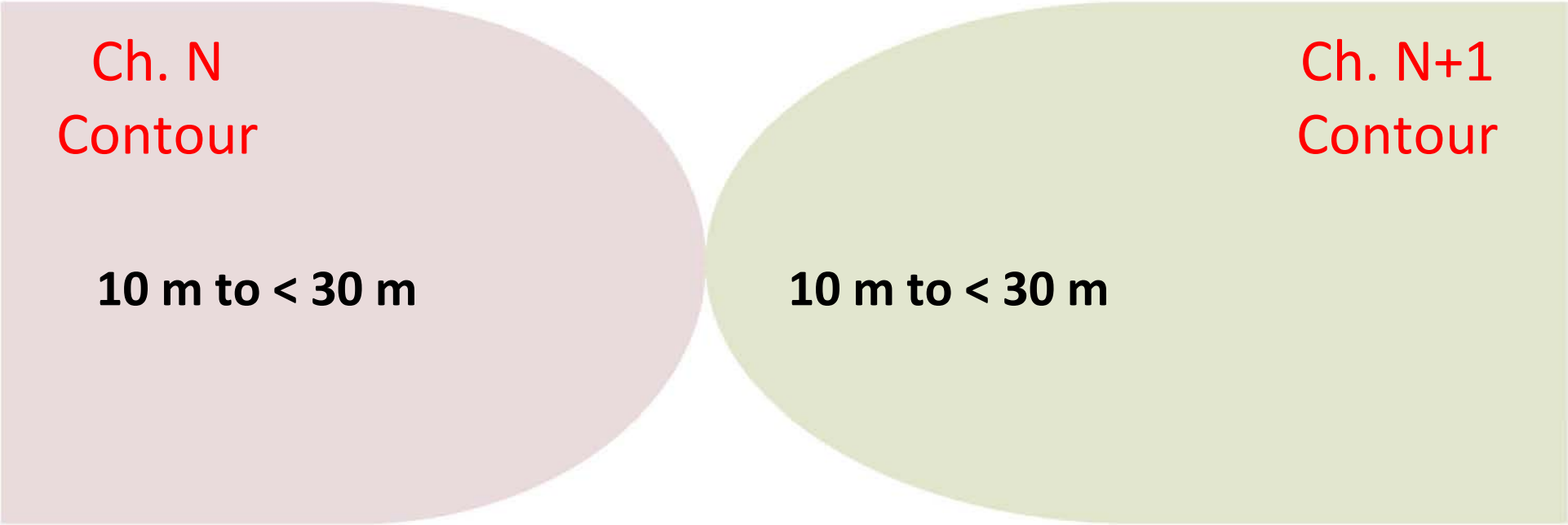
WSdb LLC
Meeting with OET/FCC

June 25, 2009

Neil Keon

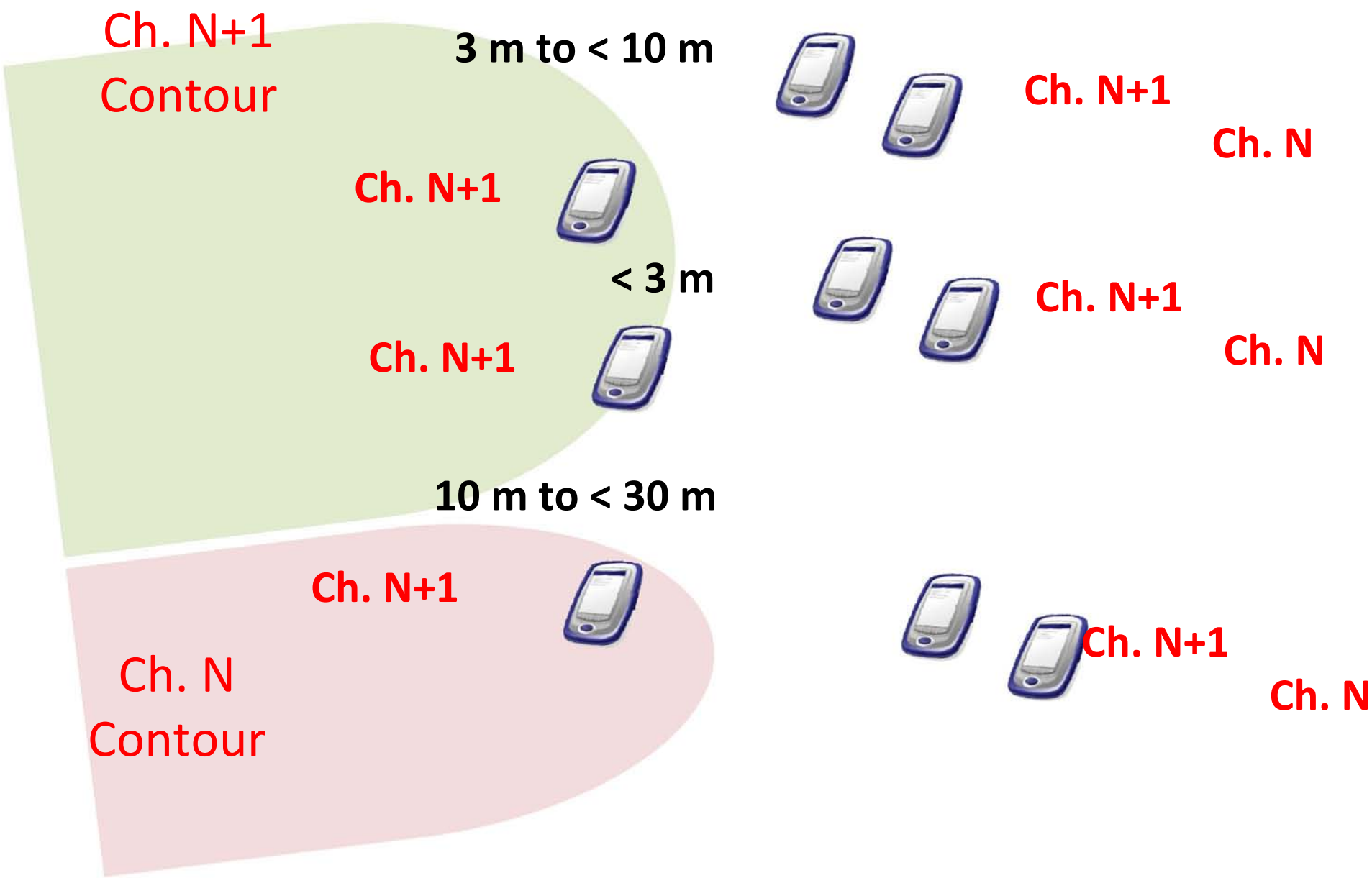
Founder

Mobility in White Space

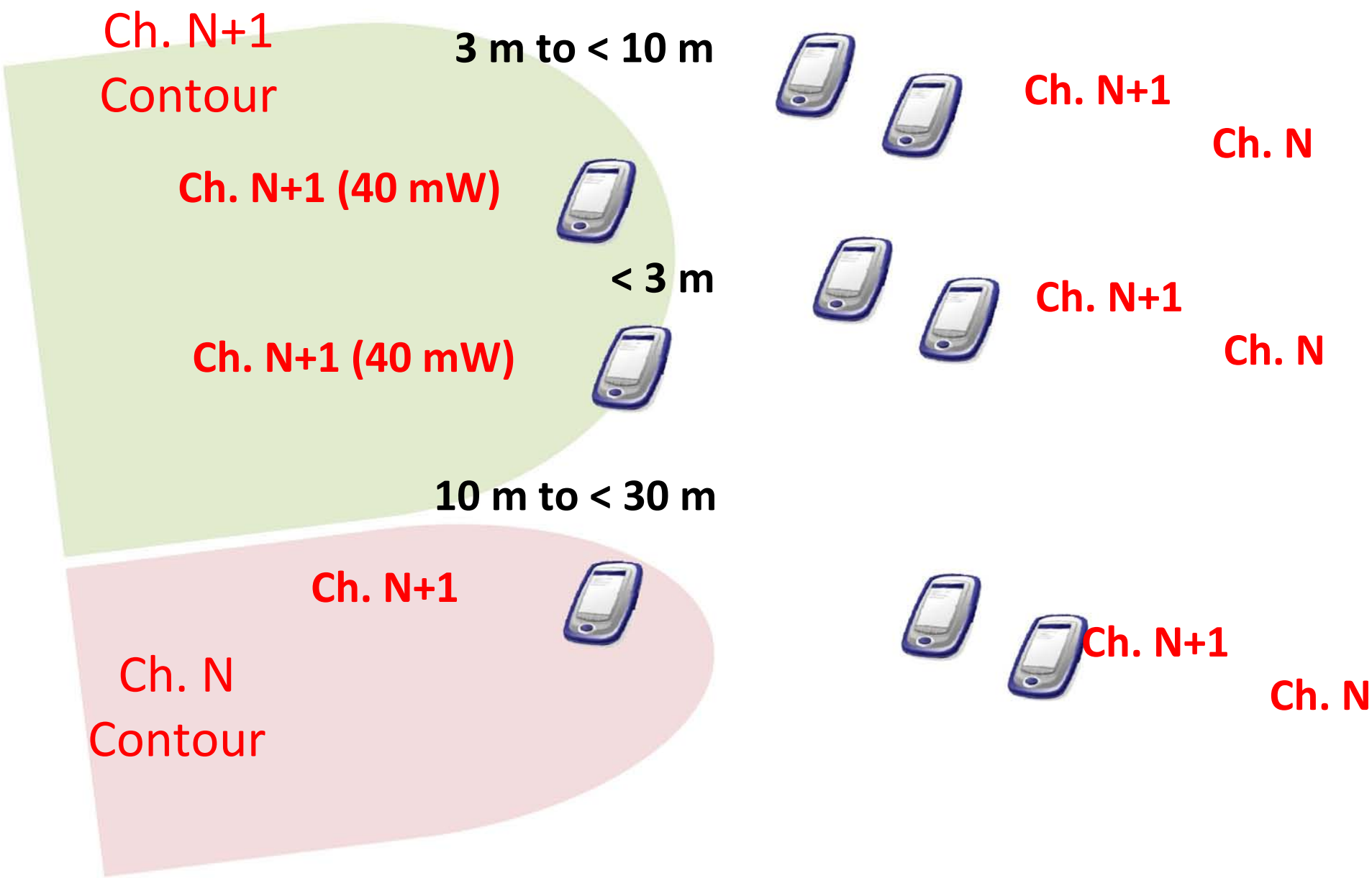


100	km/hr
x 1000/3600	(m/km) x (hr/sec)
x 1/50	request/m
0.56	request/s

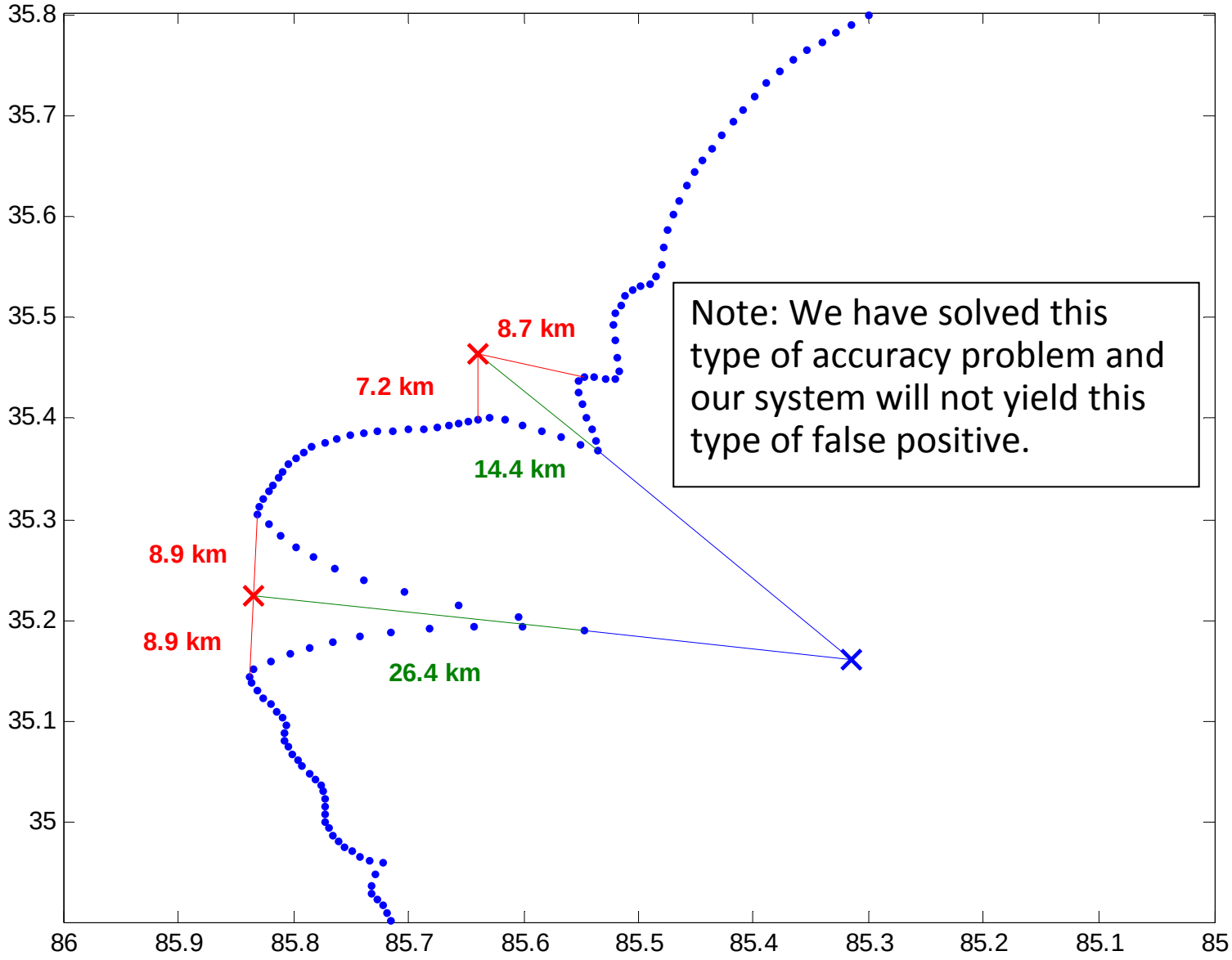
Mode 1 P/P Capacity Example



Mode 2 P/P Capacity Example

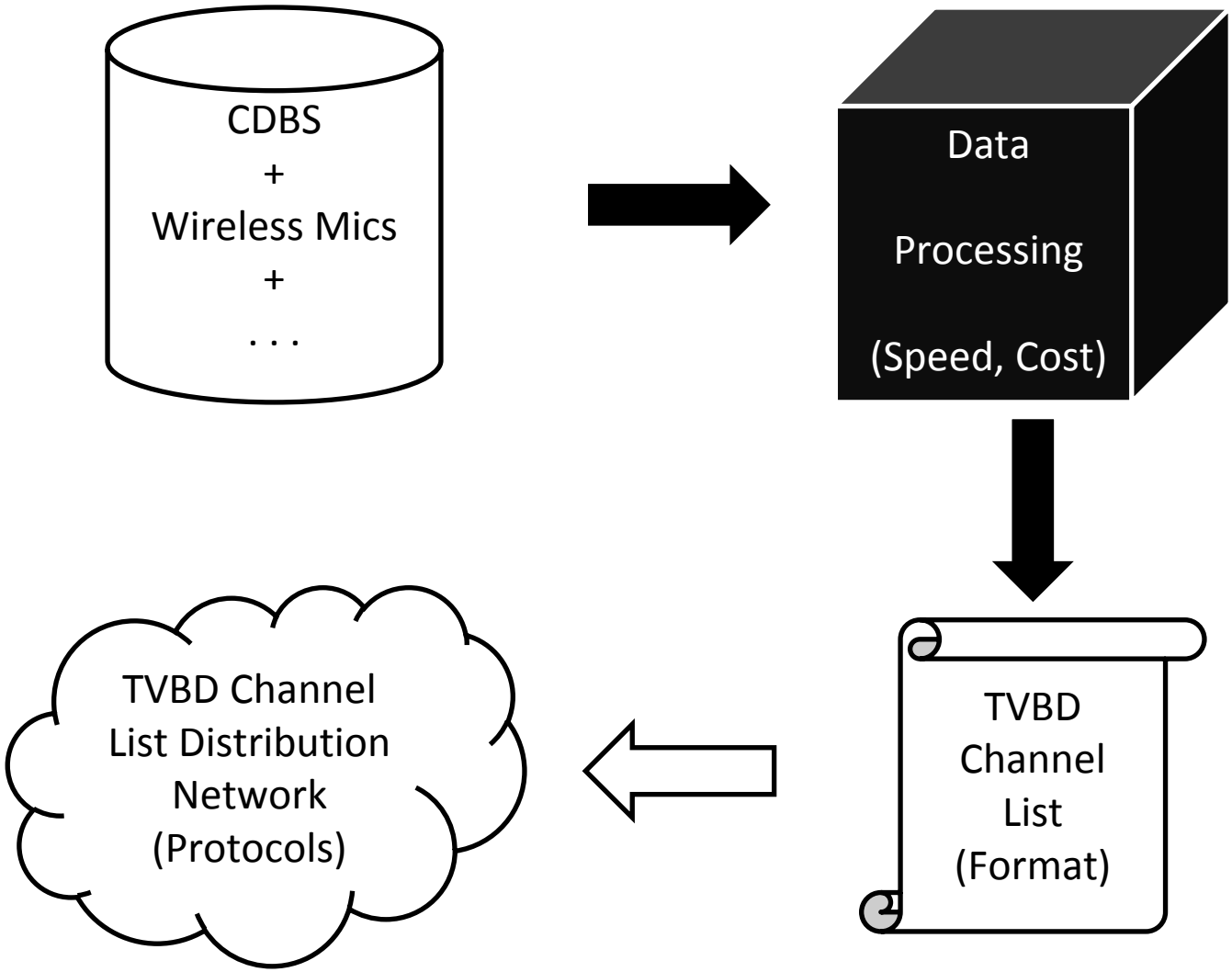


TVBD Database Accuracy



Note: We have solved this type of accuracy problem and our system will not yield this type of false positive.

Open and Competitive TVBD Database



TVBD Database Speed (Test Client)

Channel	Available	Channel	Available
1	Yes	26	Yes
2	Yes	27	No
3	No	28	Yes
4	No	29	Yes
5	Yes	30	Yes
6	Yes	31	No
7	No	32	No
8	Yes	33	Yes
9	Yes	34	No
10	Yes	35	Yes
11	Yes	36	No
12	Yes	37	Yes
13	Yes	38	Yes
14	Yes	39	Yes
15	Yes	40	No
16	Yes	41	Yes
17	Yes	42	Yes
18	Yes	43	Yes
19	Yes	44	No
20	Yes	45	Yes
21	No	46	Yes
22	Yes	47	Yes
23	Yes	48	Yes
24	Yes	49	Yes
25	Yes	50	Yes

46 ms RTT (!) – fastest observed

Server version	Typical RTT	Typical Server Time
UDP	140 ms	1-10 ms (scalable)
TCP	300 ms	
Web Service†	200 ms	

†more sophisticated use of TCP

Note: The data used by the server test module is not actual CDBS data. Our system includes several components, being developed in parallel prior to integration. The server design is independent of data content and relies only on our proprietary data format.

Why Encourage Mobility

National TVBD Network

↓

Many Fixed TVBDs (Physical Requirement, e.g. 242,000 cellular towers†)

↓

Many Mobile TVBDs (Economic Requirement, e.g. 270 million cellular subs†)

↓

System Capacity (QoS Requirement – network delay/loss)

↓

Independent TVBDs (Capacity Maximization)

↓

Real-time, Scalable Database (QoS Requirement – connection setup/roaming)

(Beta Database feasible by end of year 2009)