IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS MARSHALL DIVISION

SAINT LAWRENCE COMMUNICATIONS	§
LLC,	§
	§
Plaintiff,	§
	§
V.	§
	§
LG ELECTRONICS, INC.,	§
LG ELECTRONICS ALABAMA, INC.,	§
AND LG ELECTRONICS USA, INC.,	§
	§
Defendants.	§
	§

Case No. 2:14-cv-1055-JRG

Jury Trial Requested

JOINT CLAIM CONSTRUCTION AND PREHEARING STATEMENT

Pursuant to the Court's Docket Control Order (D.I. 25) and P.R. 4-3, Plaintiff Saint Lawrence Communications LLC ("St. Lawrence") and Defendants LG Electronics, Inc., LG Electronics Alabama, Inc., and LG Electronics USA, Inc. (collectively, "LG"), hereby submit their Joint Claim Construction and Prehearing Statement.

I. P.R. 4-3(a) – AGREED CLAIM CONSTRUCTIONS

Exhibit A, attached hereto, provides the construction of those claim terms on which the parties have agreed on a construction.

II. P.R. 4-3(b) – DISPUTED CLAIM CONSTRUCTIONS

In Exhibit B, Plaintiff St. Lawrence proposes claim constructions for the disputed claim terms/phrases of the patents-in-suit and identifies intrinsic and extrinsic evidence upon which it may rely to support its proposed constructions.

In Exhibit C, the LG Defendants propose claim constructions for the disputed claim terms/phrases of the patents-in-suit and identify intrinsic and extrinsic evidence upon which they may rely to support their proposed constructions.

III. P.R. 4-3(c) – LENGTH OF CLAIM CONSTRUCTION HEARING

The Claim Construction Hearing is set to begin at 1:30 p.m. in Marshall, Texas before Judge Rodney Gilstrap on October 9, 2015. The parties propose that the Court allow a total of 4 hours (2 hours per side) for the hearing.

IV. P.R. 4-3(d) – LIVE WITNESS TESTIMONY AT CLAIM CONSTRUCTION HEARING

At this time, the parties do not intend to call live witnesses at the claim construction hearing.

V. P.R. 4-3(e) – OTHER ISSUES

At this time, the parties are not aware of any other issues for a prehearing conference.

Dated: July 17, 2015

/s/ Melissa R. Smith (by permission BES)

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ATTORNEYS FOR DEFENDANTS LG ELECTRONICS, INC., LG ELECTRONICS USA, INC. and LG ELECTRONICS ALABAMA, INC.

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ATTORNEYS FOR PLAINTIFF SAINT LAWRENCE COMMUNICATIONS LLC

CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3) on July 17, 2015.

/s/ Brian E. Simmons Brian E. Simmons

4820-2553-5781, v. 1

EXHIBIT A

EXHIBIT A

P.R. 4-3 Joint Claim Construction Statement

St. Lawrence's and LG's Agreed Proposed Constructions

At the time of the submission of this Joint Claim Construction Statement, the parties have been able to reduce the number of terms for construction from those presented in their respective P.R. 4-1 and P.R. 4-2 disclosures. At the present time, there are no additional terms upon which any agreement has been reached. After the submission of this Joint Claim Construction Statement, the parties will meet and confer to determine whether agreements can be reached that will result in further narrowing of the claim construction issues for the Court.

4829-7161-5013, v. 1

EXHIBIT B

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EXHIBIT B

P.R. 4-3 Joint Claim Construction Statement

St. Lawrence's Proposed Constructions and Support

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Patent(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support ^{1, 2}
°805, °524, °802, and °123 Patents	"[synthesized] [weighted] wideband [speech] signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	No construction is necessary. The The '805, '524, '802, '123, and '521 Patents, meaning of the term or phrase, as used in the context of the claims, is well understood.
*805, *524, *802, *123, and *521 Patents	"[cellular/communication] network element"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	No construction is necessary. The rearing of the term or phrase, as used in the context of the claims, including their claims and file histories is well understood.

¹ Plaintiff reserves the right to rely on and/or distinguish any intrinsic or extrinsic evidence identified by the LG Defendants in the P.R. 4-3 submission and the https://www.usherbrooke.ca/gelecinfo/fr/departement/profs/left-fr/left-en/, as a witness who may testify as to the meaning of any term or the definiteness of any testify as to the meaning of that term to one skilled in the art. For terms identified by a party as being subject to 35 U.S.C. § 112(6), Dr. Lefebvre may testify that the term is not subject to 35 U.S.C. § 112(6), for example because the claim recites sufficient structure for carrying out the function, or may testify that the term ² In addition to the intrinsic and extrinsic evidence identified in the column below, SLC identified Dr. Roch Lefebvre, of the University of Sherbrooke, term, including the constructions proposed by SLC and those proposed by LG. For terms identified by a party where a construction is offered, Dr. Lefebvre may is not indefinite because the specification discloses structure for the function. For other terms that LG identifies as indefinite (but not subject to 35 U.S.C. LG Defendants' P.R. 4-2 disclosure. Plaintiff reserves the right to rely on any intrinsic or extrinsic evidence identified by the Plaintiff in its P.R. 4-2 disclosure. § 112(6), Dr. Lefebvre may testify that the claims point out and distinctly claim the subject matter of the invention.

The '805 Patent, including its claims and file St. Lawrence's Support history history history No construction is necessary. The No construction is necessary. The alternative construction. The term indefinite and does not propose an indefinite and does not propose an No construction is necessary. The alternative construction. The term meaning of the term or phrase, as meaning of the term or phrase, as correct the dependency of claims from claim 11. The recitation of used in the context of the claims, used in the context of the claims, 12 and 13 such that they depend St. Lawrence's Construction LG has alleged that this term is LG has alleged that this term is SLC will request that the Court claims 12 and 13 depend was a mistake that is readily apparent claim "10" as the claim upon from the face of the patent. is well understood. is well understood. is not indefinite. is not indefinite. "factor generator for calculating a "innovation filter for filtering the periodicity factor related to the periodicity as defined in claim "a method for enhancing wideband speech signal" "low frequency portion" Claim Term [10/13]" 12, 13, 16 Claim(s) 1, 21, 31, 51, 61 31, 51, 61 , 11, 21, 1, 21, 31

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U.S. Patent No. 6,795,805

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Filed 07/17/15
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Case 2:14-cv-01055-JRG Document 59-2 Filed 07/17/15

tion St. Lawrence's Support	se, as history aims,	 adicity The '805 Patent, including its claims and file history, including: we '805 Patent: 2:42-4:25; 14:20-15:50. *221 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2. \$2q.
St. Lawrence's Construction	meaning of the term or phrase, as used in the context of the claims, is well understood.	Function: calculating a periodicity factor in response to the pitch codevector and the innovative codevector Structure, material, or acts: $\alpha=0.125 (1+r_v)$ or $\alpha=qR_p$ bounded by $\alpha < q$ or $\sigma=0.25 (1+r_v)$ or $\sigma=2qR_p$ bounded by $\sigma < 2q$.
Claim Term	innovative codevector in relation to said periodicity factor to thereby reduce energy of a low frequency portion of the innovative codevector and enhance periodicity of a low frequency portion of the excitation signal"	"means for calculating a periodicity factor in response to the pitch codevector and the innovative codevector"
Claim(s)		2, 12, 22, 32, 42, 52, 62

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		or equivalents thereof	
6, 26, 36, 56, 66	"means for calculating said periodicity factor α using the relation: $\alpha = 0.125(1+r_v)$, where $r_v = (E_v - E_c)/(E_v + E_c)$ where E_v is	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function	The '805 Patent, including its claims and file history, including: '805 Patent: 2:42-4:25; 14:20-15:50.
	the energy of the pitch codevector and E _c is the energy of the innovative codevector"	Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		Function: calculating said periodicity factor α .	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed
		Structure, material, or acts:	above in Footnote 2.
		$\alpha=0.125(1+r_v)$, where $r_v=(E_v - E_c)/(E_v + E_c)$ where E_v is the energy of the pitch codevector and E_c is the energy of the innovative codevector, or equivalents thereof.	
21, 31	"signal fragmenting device for receiving an encoded wideband speech signal and extracting from said encoded wideband speech signal at least pitch codebook parameters, innovative codebook parameters, and synthesis filter coefficients"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood. The term is not subject to 35 U.S.C. § 112(6).	The '805 Patent, including its claims and file history
21, 31	"combiner circuit for combining said pitch codevector and said	No construction is necessary. The meaning of the term or phrase, as	The '805 Patent, including its claims and file history

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Crannel	innovative codevector filtered by said innovation filter to thereby produce said periodicity enhanced excitation signal" / "combiner circuit for combining said pitch	St. Lawrence's Construction used in the context of the claims, is well understood.	St. Lawrence's Support
21, 31	"signal synthesis filter for filtering said [periodicity enhanced] excitation signal in relation to said synthesis filter coefficients to thereby produce said synthesized wideband speech signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '805 Patent, including its claims and file history

U.S. Patent No. 6,807,524

Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	"[enhanced] high frequency content"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '524 Patent, including its claims and file history
		LG has alleged that this term is indefinite and does not propose an alternative construction. The term is not indefinite.	
	"weighting of said wideband speech signal in a formant region	No construction is necessary. The meaning of the term or phrase, as	No construction is necessary. The 7De '524 Patent, including its claims and file meaning of the term or phrase. as history

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	is substantially decoupled from a spectral tilt of said wideband speech signal"	used in the context of the claims, is well understood. LG has alleged that this term is indefinite and does not propose an alternative construction. The term is not indefinite.	
_	"signal preemphasis filter responsive to the wideband speech signal for enhancing a high frequency content of the wideband speech signal to thereby produce a preemphasised signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '524 Patent, including its claims and file history
	"a synthesis filter calculator responsive to said preemphasised signal for producing synthesis filter coefficients"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '524 Patent, including its claims and file history
1, 8	"a perceptual weighting filter, responsive to said preemphasised signal and said synthesis filter coefficients, for filtering said preemphasised signal in relation to said synthesis filter coefficients to thereby produce said perceptually weighted signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '524 Patent, including its claims and file history
15	"pitch codebook search device responsive to said perceptually	No construction is necessary. The meaning of the term or phrase, as	The '524 Patent, including its claims and file history

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	weighted signal for producing pitch codebook parameters and an innovative search target vector"	used in the context of the claims, is well understood.	
		The term is not subject to 35 U.S.C. § 112(6).	
15	"innovative codebook search device, responsive to said synthesis filter coefficients and to said innovative search target	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '524 Patent, including its claims and file history
	codebook parameters"	The term is not subject to 35 U.S.C. § 112(6).	
15	"signal forming device for producing an encoded wideband speech signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '524 Patent, including its claims and file history
		The term is not subject to 35 U.S.C. § 112(6).	

U.S. Patent No. 7,151,802

Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
9, 25	"signal fragmenting device for receiving an encoded version of a wideband signal previously down- sampled during encoding and extracting from said encoded	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	Vo construction is necessary. TheThe '802 Patent, including its claims and fileneaning of the term or phrase, ashistorysed in the context of the claims,sed in the context of the claims,s well understood.history

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	wideband signal version at least pitch codebook parameters, innovative codebook parameters, and linear prediction filter coefficients"	The term is not subject to 35 U.S.C. § 112(6).	
1, 9, 25	"combiner circuit for combining said pitch codevector and said innovative codevector to thereby produce an excitation signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '802 Patent, including its claims and file history
1, 9, 25	"signal synthesis device including a linear prediction filter for filtering said excitation signal in relation to said linear prediction filter coefficients to thereby produce a synthesized wideband signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood. The term is not subject to 35 U.S.C. § 112(6).	The '802 Patent, including its claims and file history
1, 9, 25	"oversampler responsive to said synthesized wideband signal for producing an over-sampled signal version of the synthesized wideband signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '802 Patent, including its claims and file history
1, 9, 25	"said full-spectrum synthesized wideband signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood. LG has alleged that this term is indefinite and does not propose an alternative construction. The term	The '802 Patent, including its claims and file history

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Claim(s)	Claim Term	St. Lawrence's Construction is not indefinite.	St. Lawrence's Support
1, 9, 25	"random noise generator for producing a noise sequence having a given spectrum"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '802 Patent, including its claims and file history
1, 9, 25	"spectral shaping unit for shaping the spectrum of the noise sequence in relation to linear prediction filter coefficients related to said down-sampled wideband signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood. The term is not subject to 35 U.S.C. § 112(6).	The '802 Patent, including its claims and file history
1, 9, 25	"signal injection circuit for injecting said spectrally-shaped noise sequence in said over- sampled synthesized signal version"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '802 Patent, including its claims and file history
3, 11, 27, 35	"gain adjustment module, responsive to said white noise sequence and a set of gain adjusting parameters, for producing a scaled white noise sequence"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood. The term is not subject to 35 U.S.C. § 112(6).	The '802 Patent, including its claims and file history
3, 11, 27, 35, 49, 50, 52, 53	"spectral shaper for filtering the [said scaled white] noise sequence in relation to a bandwidth	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims,	The '802 Patent, including its claims and file history

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The '802 Patent, including its claims and file The '802 Patent, including its claims and file St. Lawrence's Support history history No construction is necessary. The No construction is necessary. The indefinite and does not propose an alternative construction. The term meaning of the term or phrase, as meaning of the term or phrase, as used in the context of the claims, used in the context of the claims, St. Lawrence's Construction LG has alleged that this term is is well understood. is well understood. is well understood. is not indefinite. higher than a frequency bandwidth "a frequency bandwidth generally produce a filtered [scaled white] "a band-pass filter responsive to sequence for producing a bandpass filtered scaled white noise said filtered scaled white noise prediction filter coefficients to expanded version of the linear synthesized signal version" of the [said] over-sampled Claim Term noise sequence" sequence" 3, 11, 27, 35 35, 49, 50, Claim(s) 3, 11, 27, 52, 53

U.S. Patent No. 7,191,123

Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	"a factor $\lambda=0$ indicates a pure	No construction is necessary. The	No construction is necessary. The 7 The '123 Patent, including its claims and file
	voiced signal and a factor $\lambda=1$	meaning of the term or phrase, as	history
	indicates a pure unvoiced signal"	used in the context of the claims,	
		is well understood.	
		LG has alleged that this term is	

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The '123 Patent, including its claims and file St. Lawrence's Support history history history history No construction is necessary. The indefinite and does not propose an alternative construction. The term indefinite and does not propose an alternative construction. The term meaning of the term or phrase, as used in the context of the claims, St. Lawrence's Construction LG has alleged that this term is is well understood. is well understood. is well understood. is well understood. is not indefinite. s not indefinite. "codevector finder . . . delivering a said at least one second wideband representative of stability of said "the first λ and second θ factors" said at least one third wideband representative of voicing in the said at least one first wideband wideband signal in response to wideband signal in response to codevector found in relation to "stability factor calculator. signal encoding parameter" "voicing factor calculator. signal encoding parameter" signal encoding parameter" delivering a second factor Claim Term delivering a first factor 65, 66, 68, 81, 82, 84 33, 34, 36, 13, 14, 16, Claim(s) 20 20 20

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
20	"smoothing gain calculator delivering a smoothing gain based on said first and second factors"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '123 Patent, including its claims and file history
20	"amplifier amplifying said found codevector with said smoothing gain to thereby produce said gain-smoothed codevector"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '123 Patent, including its claims and file history
21, 53, 69, 102, 103	"means for finding a codevector in relation to at least one first wideband signal encoding parameter of said set"	Function: finding a codevector in relation to at least one first wideband signal encoding parameter of said set	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 14:53-15:12; see also claim 20.
		Structure, materials, or acts: codebook or equivalents thereof:	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
21, 53, 69	"means for calculating a first factor representative of voicing in the wideband signal in response to at least one second wideband signal encoding parameter of said set"	Function: calculating a first factor representative of voicing in the wideband signal in response to at least one second wideband signal encoding parameter of said set Structure, materials, or acts:	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 15:13-50; 18:21-20:55; see also claim 20. '521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		rv=(Ev-Ec)/(Ev+Ec)	November 8, 2006 Amendment
		or equivalents thereof	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
21, 53, 69	"means for calculating a second factor representative of stability of said wideband signal in response to at least one third wideband signal encoding parameter of said	Function: calculating a second factor representative of stability of said wideband signal in response to at least one third wideband signal encoding parameter of said	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 15:61-16:60; see also claim 20.
	set"	set Structure, material, or acts:	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		$\theta = 1.25 - D_s/40000.0$ or equivalents thereof	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
21, 53, 69	"means for calculating a smoothing gain based on said first and second factors"	Function: calculating a smoothing gain based on said first and second factors Structure, material, or acts: $\lambda=0.5(1-rv)$ $S_m=\lambda\theta$	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 15:13-17:3; see also claim 20. '521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
			DJ. NOCH LETEDVIE may result as to the meaning and/or definiteness of this term as discussed above in Footnote 2.

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		$\label{eq:generalized_state} \begin{split} \begin{tabular}{lllllllllllllllllllllllllllllllllll$	
		$g_s = S_m * g_0 + (1 - S_m) * g$	
		or equivalents thereof	
21, 53, 69, 102, 103	"means for amplifying the found codevector with said smoothing gain to thereby produce said gain- smoothed codevector"	Function: amplifying the found codevector with said smoothing gain to thereby produce said gain- smoothed codevector	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 13:22-61; 16:44-17:3; 18:5-14; see also claim 20
		Structure, material, acts:	'521 Patent File History, including: June 8, 2006 Office Action
		multiplying the found codevector by the smoothing gain	September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		or equivalents thereof	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
22, 24, 35, 54, 56, 67,	"means for finding an innovative codevector in an innovative	This term is not subject to 35 U.S.C. § 112(6) as the claim	The '123 Patent, including its claims and file history, including:
70, 72, 83	codebook in relation to said at least one first wideband signal	recites sufficient structure to perform the recited function.	'123 Patent: Abstract; 2:33-5:12; 14:53-15:12; see also claim 20.
	Province Parameter	Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary
		Function: finding an innovative codevector in an innovative	November 8, 2006 Amendment
		codebook in relation to said at least one first wideband signal	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		encoding parameter Structure: , materials, or acts: innovative codebook or	above in Footnote 2.
22, 54, 70	"means for calculating the smoothing gain also in relation to an innovative codebook gain forming a fourth wideband signal encoding parameter of said set"	Function: calculating the smoothing gain also in relation to an innovative codebook gain forming a fourth wideband signal encoding parameter of said set Structure, material, or acts: $\lambda=0.5(1-rv)$	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 15:13-16:43; 16:44-17:3; see also claim 20. '521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		$S_m = \lambda \Theta$ $\lim_{a \to a} \frac{i[g \le g - 1]_{\text{then}}}{i[g \le g - 1]_{\text{then}}} \frac{g^3 - g^{3}_{-1} 19}{g^3 - g^{2}_{-1} 19} $	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
		$g_s = S_m * g_0 + (1 - S_m) * g$ or equivalents thereof	
23, 55, 71	"means for finding a codevector in a codebook in relation to said at least one first wideband signal encoding parameter"	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function.	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 14:53-16:43; see also claim 20.

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	'521 Patent File History, including: June 8, 2006 Office Action Sentember 6, 2006 Fyaminer Interview Summary
		Function: finding a codevector in a codebook in relation to said at least one first wideband signal encoding parameter	November 8, 2006 Amendment Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed
		Structure, materials, or acts: codebook or equivalents thereof	above in Footnote 2.
26, 58, 74	"means for finding an innovative codevector in an innovative codebook in relation to an index k of said innovative codebook"	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function.	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 14:53-16:43; see also claim 20.
		Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	 '521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary
		runction: minimized in muovauve codevector in an innovative codebook in relation to an index k of said innovative codebook	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2
		Structure, materials, or acts: innovative codebook or equivalents thereof	
26, 58, 74	"means for computing a voicing factor rv bv means of the	This term is not subject to 35 U.S.C. § 112(6) as the claim	The '123 Patent, including its claims and file history, including:
	following relation: rv=(Ev- Ec)/(Ev+Ec)"	recites sufficient structure to perform the recited function.	"123 Patent: Abstract; 2:33-5:12; 15:13-50; 18:21-20:55; see also claim 20.

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	'521 Patent File History, including: June 8, 2006 Office Action
		Function: computing a voicing factor rv.	September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		Structure, material, or acts:	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed
		"", "rv=(Ev- Ec)/(Ev+Ec)"	above III Footnote 2.
		or equivalents thereof	
28, 60, 76	"means for computing a factor λ using the following relation: $\lambda=0.5(1-rv)$ "	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function.	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 15:13-60; 18:21-20:55: see also claim 20.
		Alternatively, if the Court finds	'521 Patent File History, including:
		Function: means for computing a	June 8, 2000 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		factor λ. Structure material or acts:	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed
		λ=0.5(1-1V)	above in Footnote 2.
		or equivalents thereof	
30, 62, 78	"means for determining a distance measure giving a similarity	Function: determining a distance measure giving a similarity	The '123 Patent, including its claims and file history, including:

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Claim(S)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	between adjacent, successive	between adjacent, successive	'123 Patent: Abstract; 2:33-5:12; 15:13-16:31;
	linear prediction filters computed	linear prediction filters computed	see also claim 20.
	during encoding of the wideband	during encoding of the wideband	
	signal"	signal	'521 Patent File History, including:
			June 8, 2006 Office Action
		Structure, material, acts:	September 6, 2006 Examiner Interview Summary
			November 8, 2006 Amendment
		$D_{s} = \sum_{i=1}^{p-1} (isp_{i}^{(n)} - isp_{i}^{(n-1)})^{2}$	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
		Or equivalents thereof	
31, 63, 79	"means for calculating an	This term is not subject to 35	The '123 Patent, including its claims and file
	Imimitance Spectral Pair distance	U.S.C. § 112(6) as the claim	history, including:
	measure between the Immitance	recites sufficient structure to	'123 Patent: Abstract; 2:33-5:12; 15:13-16:31;
	Spectral Pairs in a present frame n	perform the recited function	see also claim 20.
	of the wideband signal and the		
	Immutance Spectral Pairs of a past	Alternatively, if the Court finds	'521 Patent File History, including:
	frame n-1 of the wideband signal	that 35 U.S.C. § 112(6) applies:	June 8, 2006 Office Action
	through the following relation		September 6, 2006 Examiner Interview Summary
	where p is the order of the linear	Function: calculating an	November 8, 2006 Amendment
	prediction filters"	Imimitance Spectral Pair distance	and the second state of the second
		measure between the Immitance	Dr. Roch Lefebvre may testify as to the meaning
		Spectral Pairs in a present frame n	and/or definiteness of this term as discussed
		of the wideband signal and the	above in Footnote 2.
		Immitance Spectral Pairs of a past	
		frame n-1 of the wideband signal.	
		Structure, material, or acts:	
		$D_s = \sum_{i=1}^{p-1} (isp_i^{(n)} - isp_t^{(n-1)})^2$ where p is the order of the linear	

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Claim(s)	Claim Term	St. Lawrence's Construction prediction filters	St. Lawrence's Support
		or equivalents thereof.	
33, 36, 65, 68, 81, 84	"means for calculating a gain smoothing factor Sm based on both the first λ and second θ	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 15:13-16:43;
	relation: Sm= $\lambda\theta^{n}$	Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	 521 Patent File History, including: June 8, 2006 Office Action Sentember 6, 2006 Evaminer Interview Summary
		Function: calculating a gain	November 8, 2006 Amendment
		smoothing factor Sin based on both the first λ and second θ factors	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2
		Structure, material, or acts:	
		$Sm=\lambda\theta$	
		or equivalents thereof	
35, 67, 83	"means for computing an initial modified gain g0"	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function.	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 16:43-60; see also claim 20.
		Specifically, the recited structure is described with respect to the term	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		"means for comparing an innovative codebook gain g" which immediately follows this term.	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
35, 67, 83	"means for comparing an innovative codebook gain g computed during encoding of the wideband signal to a threshold given by the initial modified gain from the past subframe g-1 as follows if $g < g-1$ then $g0 = g \times$ 1.19 bounded by $g0 \le g-1$ and if $g \ge g-1$ then $g0 = g/1.19$ bounded by $g0 \ge g-1$ "	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies: Function: comparing an innovative codebook gain g computed during encoding of the wideband signal to a threshold given by the initial modified gain from the past subframe g-1 Structure, material, or acts: $\inf_{g \leq g-1} \inf_{g = g \times 1.19} \lim_{bounded by g 0 \geq g-1}$ and if $g \geq g-1$ then $g 0 = g \times 1.19$ bounded by $g 0 \geq g-1$ or equivalents thereof	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 16:43–60; see also claim 20. '521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
36	"a gain-smoothed codevector	LG has alleged that this term is	The '123 Patent, including its claims and file

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	producing method as claimed in claim 35"	indefinite and does not propose an alternative construction. The term is not indefinite.	history, including: '123 Patent: Abstract; 2:33-5:12; 14:53-17:3; Claims 35 and 36.
		SLC will request that the Court correct the reference to a "method" such that the claim refers to a "device." The recitation of a "method" was a mistake that is readily apparent from the face of the patent.	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
36, 68, 84	"means for determining said smoothing gain through the following relation: gs =Sm *g0+(1-S m)*g"	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 16:43–17:3; see also claim 20.
		Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary
		Function: determining said smoothing gain	November 8, 2006 Amendment
		Structure, material, or acts:	Dr. Kocn Lerebyre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
		gs =Sm *g0+(1–S m)*g	
		or equivalents thereof	
53, 69	"means for transmitting the encoded wideband signal"	Function: transmitting the encoded wideband signal	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 6:12-7:4.

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		Structure: transmission circuit or equivalents thereof	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
53, 69	"means for receiving a transmitted encoded wideband signal"	Function: receiving a transmitted encoded wideband signal Structure: receiving circuit or equivalents thereof	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 6:12-7:4. '521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
53, 69	"means responsive to a set of wideband signal encoding parameters for decoding the received encoded wideband signal"	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function. Specifically, the claim further recites "wherein said wideband signal decoding means comprises a device as recited in claim 21, for producing a gain-smoothed codevector during decoding of the	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 6:12–7:4; 14:53–15:30; claim 21. '521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment Dr. Roch Lefebvre may testify as to the meaning

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St. Lawrence's Support	and/or definiteness of this term as discussed above in Footnote 2.						The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 15:13-50; 18:21-20:55; see also claim 20.	'521 Patent File History, including: June 8, 2006 Office Action	September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
St. Lawrence's Construction	encoded wideband signal from said set of wideband signal encoding parameters."	Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	Function: responsive to a set of wideband signal encoding parameters for decoding the received encoded wideband signal	Structure, material, or acts:	a device as recited in claim 21, for producing a gain-smoothed codevector during decoding of the encoded wideband signal from said set of wideband signal encoding parameters	or equivalents thereof	Function: calculating a factor representative of voicing in the wideband signal in response to at least one second wideband signal encoding parameter of said set	Structure, materials, or acts:	rv=(Ev-Ec)/(Ev+Ec)
Claim Term							"means for calculating a factor representative of voicing in the wideband signal in response to at least one second wideband signal encoding parameter of said set"		
Claim(s)							102		

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		or equivalents thereof	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
102	"means for calculating a smoothing gain using a non linear operation based on said voicing representative factor"	Function: calculating a smoothing gain using a non linear operation based on said voicing representative factor	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract, 2:33-5:12; 15:13-17:3; see also claim 20.
		Structure, material, or acts: $\lambda = 0.5(1 - rv)$	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		$S_m = \lambda \Theta$	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed
		$\label{eq:second} \begin{array}{llllllllllllllllllllllllllllllllllll$	above in Footnote 2.
		$g_s = S_m * g_0 + (1 - S_m) * g$	
		or equivalents thereof	
103	"means for calculating a factor representative of stability of said wideband signal in response to at least one second wideband signal	Function: calculating a factor representative of stability of said wideband signal in response to at least one second wideband signal	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 15:13-17:3; see also claim 20.
	encoding parameter of said set	encoding parameter of said set Structure, material, or acts:	'521 Patent File History, including: June 8, 2006 Office Action

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		$\theta = 1.25 - D_s / 400000.0$	September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		or equivalents thereof	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.
103	"means for calculating a smoothing gain using a non linear operation based on said stability representative factor"	Function: calculating a smoothing gain using a non linear operation based on said stability representative factor	The '123 Patent, including its claims and file history, including: '123 Patent: Abstract; 2:33-5:12; 15:13-17:3; see also claim 20.
		Structure, material, or acts:	'521 Patent File History, including:
		λ=0.5(1- <i>rv</i>)	September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		$S_m = \lambda \Theta$	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed
		if $g < g$ 1 then $g() - g^{k}$ 1.19 bounded by $g0 \le g - 1$ and if $g \le g - 1$ then $g() = g1.19$ bounded by $g0 \le g - 1$	
		$g_s = S_m * g_0 + (1 - S_m) * g$	
		or equivalents thereof	

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St. Lawrence's Construction Claim Term Claim(s)

St. Lawrence's Support

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Claim(s)	Claim Term "a pitch codebook search device	St. Lawrence's Construction No construction is necessary. The	St. Lawrence's Support The '521 Patent, including its claims and file
	configured to generate a pitch code vector"	meaning of the term or phrase, as used in the context of the claims, is well understood. The term is not subject to 35	history
1, 2, 7, 8, 10, 11, 17, 29, 35, 38, 44, 55, 56, 59, 62	"signal path" / "signal paths"	U.S.C. § 112(6). No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
	"pitch prediction error calculating device for calculating a pitch prediction error of said pitch codevector from said pitch codebook search device"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood. The term is not subject to 35 U.S.C. § 112(6).	The '521 Patent, including its claims and file history
, 2, 3	"filter for filtering the pitch codevector before supplying said pitch codevector to the pitch prediction error calculating device"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
	"a selector for comparing the pitch prediction errors calculated in said at least two signal paths, for choosing the signal path having	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	the lowest calculated pitch prediction error and for selecting the set of pitch codebook parameters associated to the chosen signal path"		
5, 14, 32, 41	"convolution unit for convolving the pitch codevector with a weighted synthesis filter impulse response signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
		The term is not subject to 35 U.S.C. § 112(6).	
5, 14, 32, 41	"pitch gain calculator for calculating a pitch gain in response to the convolved pitch codevector and a pitch search target vector"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
5, 14, 32, 41	"amplifier for multiplying the convolved pitch codevector by the pitch gain"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
5, 14, 32, 41	"combiner circuit for combining the amplified convolved pitch codevector with the pitch search target vector to thereby produce the pitch prediction error"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
5, 15, 33, 42	6, 15, 33, 42 "means for calculating said pitch	This term is not subject to 35	The '521 Patent, including its claims and file

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	gain b(j) using the relation: $b^{(j)=x^ty^{(j)}/ y^{(j)} ^{2,\gamma}}$	U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function.	history, including: '521 Patent: Abstract; 3:27-51; 11:66-12:56.
		Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies:	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		Function: calculating said pitch gain b(j).	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed
		Structure, material, or acts:	above in Footnote 2.
		$b^{(j)} = x^t y^{(j)} y^{(j)} ^2$ where $j=0, 1, 2, \ldots, K$, and K corresponds to a number of signal paths, and where x is said pitch search target vector and $y_{(j)}$ is said convolved pitch codevector	
		or equivalents thereof.	
8, 17, 35, 44	"means for calculating an energy of the corresponding pitch prediction error"	Function: calculating an energy of the corresponding pitch prediction error	The '521 Patent, including its claims and file history, including: '521 Patent: Abstract; 3:3-51; 9:40-13:25.
		Structure, material, or acts: $E = x - by_T ^2$	'521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment
		or equivalents thereof	Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
			above in Footnote 2.
			Simon Haykin & Barry Van Veen, Signals and Systems 20-21 (1999)
			HUIBERT KWAKERNAAK & RAPHAEL SIVAN, MODERN SIGNALS AND SYSTEMS 33-34 (1991)
			JOHN G. PROAKIS & MASOUD SALEHI, COMMUNICATION SYSTEMS ENGINEERING 41-42 (2d ed. 2002)
8, 17, 35, 44	"means for comparing the energies of said pitch prediction errors of the different signal paths and for choosing as the signal path having the lowest calculated pitch prediction error the signal path having the lowest calculated energy of the pitch prediction error"	This term is not subject to 35 U.S.C. § 112(6) as the claim recites sufficient structure to perform the recited function. Alternatively, if the Court finds that 35 U.S.C. § 112(6) applies: Function: comparing the energies of said pitch prediction errors of the different signal paths and choosing as the signal path having the lowest calculated pitch prediction error Structure, material, or acts: choosing the signal path having the lowest calculated energy of the pitch prediction error	The '521 Patent, including its claims and file history, including: '521 Patent: Abstract; 3:3-51; 9:40-13:25. '521 Patent File History, including: June 8, 2006 Office Action September 6, 2006 Examiner Interview Summary November 8, 2006 Amendment Dr. Roch Lefebvre may testify as to the meaning and/or definiteness of this term as discussed above in Footnote 2.

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		or equivalents thereof.	
10	"linear prediction synthesis filter calculatorfor producing linear prediction synthesis filter coefficients"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
10	"perceptual weighting filterfor producing a perceptually weighted signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
10	"impulse response generatorfor producing a weighted synthesis filter impulse response signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
10	"pitch search unit for producing pitch codebook parameters"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
		The term is not subject to 35 U.S.C. § 112(6).	
10	"pitch codebook search device responsive to the perceptually weighted signal and linear prediction synthesis filter coefficients for producing the	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history

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Claim(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
	search target vector"	U.S.C. § 112(6).	
10	"pitch analysis device responsive to the pitch codevector for selecting, from said sets of pitch codebook parameters, the set of pitch codebook parameters associated to the single path having the lower calculated pitch prediction error"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood. The term is not subject to 35 U.S.C. § 112(6).	The '521 Patent, including its claims and file history
10	"innovative codebook search devicefor producing innovative codebook parameters"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
		The term is not subject to 35 U.S.C. § 112(6).	
10	"signal forming device for producing an encoded wideband signal"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history
		The term is not subject to 35 U.S.C. § 112(6).	
55	"pitch codebook search device"	No construction is necessary. The meaning of the term or phrase, as used in the context of the claims, is well understood.	The '521 Patent, including its claims and file history

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Claum(s)	Claim Term	St. Lawrence's Construction	St. Lawrence's Support
		LG has alleged that this term is	
		indefinite and does not propose an	
		alternative construction. The term	
		is not indefinite.	

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EXHIBIT C

	-1	LG's Proposed Constructions and Support	ort
By LG's co	By LG's count, 84 claim terms remain in dispute.		Although this appears to be a large number of terms, they fall within just four categories:
1. 45 of th	he terms are governed by 35 U.S.C. § 1	12, \P 6, which the parties must identify unde	45 of the terms are governed by 35 U.S.C. § 112, ¶ 6, which the parties must identify under P.R. 4-2(a). LG contends that 42 are indefinite.
2. 26 of th which l circuitr	the terms are patent-specific phrases lik have no readily apparent meaning, and y. St. Lawrence refused to provide LC	e "factor generator for calculating a periodici which LG believes should be construed for t i with any proposed constructions for these to	26 of the terms are patent-specific phrases like "factor generator for calculating a periodicity factor related to the wideband speech signal," which have no readily apparent meaning, and which LG believes should be construed for the jury to explain the operation of the claimed circuitty. St. Lawrence refused to provide LG with any proposed constructions for these terms prior to submission of this P.R. 4-3 Statement.
3. 10 of th identify	10 of the terms are terms that LG contends are identify these terms under the Docket Control	e indefinite (besides the terms governed by § Order.	10 of the terms are terms that LG contends are indefinite (besides the terms governed by § 112, ¶ 6 mentioned above). LG is required to identify these terms under the Docket Control Order.
4. 3 of the	3 of the terms are miscellaneous terms that LG identified for construction.	3 identified for construction.	
LG has atte P.R. 4-2 D. issues. As LG's P.R. ⁴ Lawrence i	sciosure, LG withdrew terms that it or sclosure, LG withdrew terms that it or part of the P.R. 4-2(c) process, LG agr 4-2 Disclosure. However, LG has redu s asserting 170 claims across 5 differer	ber of disputed claim terms during the claim ginally identified in its P.R. 4-1 Disclosure i eed to withdraw additional terms for which I ced the number of claim terms as much as it th patents and has steadfastly refused numero	LG has attempted in good faith to reduce the number of disputed claim terms during the claim construction process. To that end, at the time of the P.R. 4-2 Disclosure, LG withdrew terms that it originally identified in its P.R. 4-1 Disclosure in a good faith endeavor to narrow the remaining issues. As part of the P.R. 4-2(c) process, LG agreed to withdraw additional terms for which LG previously provided proposed constructions in LG's P.R. 4-2 Disclosure. However, LG has reduced the number of claim terms as much as it reasonably can without prejudicing its position. St. Lawrence is asserting 170 claims across 5 different patents and has steadfastly refused numerous requests to reduce the number of asserted claims.
Moreover, of this P.R. constructio been partic process in t	St. Lawrence never provided LG with 4-3 Statement despite the clear requir- ns or meet and confer on any of the ter ipating in a one-sided meet and confer the future so that the parties can contin	Moreover, St. Lawrence never provided LG with its proposed corresponding structures for any means-plus-funct of this P.R. 4-3 Statement despite the clear requirement of P.R. 4-2(a) and numerous requests from LG. Similarl constructions or meet and confer on any of the terms identified by LG for construction prior to submission of thi been participating in a one-sided meet and confer process and remains hopeful that St. Lawrence will meaningfu process in the future so that the parties can continue to narrow the disputed issues prior to the <i>Markman</i> hearing.	Moreover, St. Lawrence never provided LG with its proposed corresponding structures for any means-plus-function limitations prior to submission of this P.R. 4-3 Statement despite the clear requirement of P.R. 4-2(a) and numerous requests from LG. Similarly, St. Lawrence refused to provide constructions or meet and confer on any of the terms identified by LG for construction prior to submission of this P.R. 4-3 Statement. LG has been participating in a one-sided meet and confer process and remains hopeful that St. Lawrence will meaningfully engage in the meet and confer process in the future so that the parties can continue to narrow the disputed issues prior to the <i>Markman</i> hearing.
Terms Sh	Terms Shared Among the Asserted Patents		
Patent(s)	Claim Term	LG's Construction	LG's Support
`805, `524, `802, and `123 Patents	"[synthesized] [weighted] wideband [speech] signal"	a [synthesized] [weighted] signal containing [speech] information at least in the frequency range of 50- 7000Hz	Intrinsic Evidence '805 Patent: Abstract, Col. 1:12-25, 2:6-19, 6:20- 7:11, 7:18-55, 12:14-17, 16:17-38, 17:64-18:4, 18:16-30:11; File History, Notice of Allowance dated June 16, 2004 at pp. 2-6

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LG's Support	 *524 Patent: Abstract, Col. 1:13-32, 2:8-3:26, 6:48-8:14, 8:60-65, 10:8-20, 12:25-28, 16:28-44, 18:6-13, 18:24-22:65; Fig.1; U.S. Patent App. No. 09/830,726 (a related application) File History, Response to Office Action dated January 23, 2004 (e.g., pp. 5-11), Examiner's Amendment Communication dated April 14, 2004 (e.g., pp. 7-8) 	*802 Patent: Abstract, Col. 1:16-29, 2:9-62, 7:36- 8:67, 13:35-38, 17:49-64, 19:36-43, 19:55-28:45; U.S. Patent App. No. 09/830,332 (a related application) File History, Response to Office Action dated January 05, 2005 (e.g., pp. 26-29), Response to Office Action dated December 13, 2005 (e.g., pp. 29-31), Response to Office Action dated July 14, 2006 (e.g., pp.24-26)	 *123 Patent: Abstract, Col. 1:10-23, 2:4-22, 7:5-60, 8:1-37; 13:18-21, 19:35-57, 21:44-40:7; File History, Applicant Response dated January 1, 2006 at pp. 41-47, Applicant Response dated August 4, 2006 at pp. 38-46 	Extrinsic Evidence Abboud, <i>Wideband CELP Speech Coding</i> , McGill Univ., November 1992 U.S. Patent No. 5,646,961 to Shoham et al. U.S. Patent No. 5,235,669 to Ordentlich et al. Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)	Intrinsic Evidence
LG's Construction					a [cellular] base station
Claim Term					"[cellular/communication]
Patent(s)					,805, 524,

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LG's Support	-6:19, Fig. 4	-62, 5:17-6:27, Fig.4	-47, 6:4-7:1, Fig. 4	5:64, Fig. 4	-6:15, Fig. 4.	<u>Extrinsic Evidence</u> Newton's Telecom Dictionary 15th ed. (1999)
TG:	'805 Patent: Col. 4:26-6:19, Fig. 4	'524 Patent: Col. 4:14-62, 5:17-6:27, Fig.4	'802 Patent: Col. 5:43-47, 6:4-7:1, Fig. 4	'123 Patent: Col. 5:1-6:64, Fig. 4	'521 Patent: Col. 4:26-6:15, Fig. 4.	<u>Extrinsic Evidence</u> Newton's Telecom Di
LG's Construction						
	-					
Claim Term	network element"					

U.S. Patent No. 6,795,805

Claim(s)	Claim Term	LG's Construction	LG's Support
1, 11, 21, 31, 51, 61	"low frequency portion"	Indefinite	
12, 13, 16	"a method for enhancing periodicity as defined in claim [10/13]"	Indefinite	
1, 21, 31, 51, 61	"factor generator for calculating a periodicity factor related to the wideband speech signal"	a specialized circuit for calculating a value that represents the amount of pitch contribution of the excitation signal for the wideband speech signal	Intrinsic Evidence Abstract, Col. 2:30-3:45, 4:53-7:15, 13:35-15:62, 17:8-28, 18:16-30:11, Figs. 1-4 '805 Patent File History, Notice of Allowance
1, 21, 31	"innovation filter for filtering the innovative codevector in relation to said periodicity factor to thereby reduce energy of a low frequency	a specialized circuit for using a periodicity factor to filter an innovative codevector to reduce energy of a low frequency portion	dated June 16, 2004 at pp. 2-6 Intrinsic Evidence Abstract, Col. 2:30-3:45, 4:53-7:15, 13:35-15:62, 18:16-30:11, Figs. 1-4

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Claim(s)	Claim Term	LG's Construction	LG's Support
	portion of the innovative codevector and enhance periodicity of a low frequency portion of the excitation signal"	of the innovative codevector and enhance periodicity of a low frequency portion of the excitation signal	 '805 Patent File History, Notice of Allowance dated June 16, 2004 at pp. 2-6 Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)
2, 12, 22, 32, 42, 52, 62	"means for calculating a periodicity factor in response to the pitch codevector and the innovative codevector" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
6, 26, 36, 56, 66	"means for calculating said periodicity factor α using the relation: $\alpha=0.125(1+r_v)$, where $r_v=(E_v - E_c)/(E_v + E_c)$ where E_v is the energy of the pitch codevector and E_c is the energy of the innovative codevector" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
21, 31	"signal fragmenting device for receiving an encoded wideband speech signal and extracting from said encoded wideband speech signal at least pitch codebook parameters, innovative codebook parameters, and synthesis filter coefficients"	Indefinite	

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The American Heritage Dictionary 4th ed. (2001) The American Heritage Dictionary 4th ed. (2001) Abstract, Col. 3:46-4:25, 4:53-7:15, 13:35-16:15, Abstract, Col. 3:46-4:25, 4:53-7:15, 13:35-15:62, 805 Patent File History, Notice of Allowance Newton's Telecom Dictionary 15th ed. (1999) '805 Patent File History, Notice of Allowance Newton's Telecom Dictionary 15th ed. (1999) LG's Support dated June 16, 2004 at pp. 2-6 dated June 16, 2004 at pp. 2-6 18:16-30:11, Figs. 1-4 18:6-30:11, Figs. 1-4 **Extrinsic Evidence Extrinsic Evidence** Intrinsic Evidence Intrinsic Evidence a [periodicity enhanced] excitation synthesis filter coefficients to filter a [periodicity enhanced] excitation a specialized circuit for generating signal to generate a synthesized signal by combining pitch and a specialized circuit for using LG's Construction wideband speech signal innovative codevectors "signal synthesis filter for filtering excitation signal in relation to said produce said periodicity enhanced codevector to thereby produce an innovative codevector filtered by thereby produce said synthesized "combiner circuit for combining This term is subject to 35 U.S.C. circuit for combining said pitch said innovation filter to thereby said pitch codevector and said excitation signal" / "combiner synthesis filter coefficients to codevector and innovative said [periodicity enhanced] wideband speech signal" Claim Term excitation signal" \$ 112(6). Claim(s) 21,31 21, 31

U.S. Patent No. 6,807,524

aim(s)	Claim Term	LG's Construction	LG's Support
	"[enhanced] high frequency content"	Indefinite	
	"weighting of said wideband speech signal in a formant region	Indefinite	

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Claim(s)	Claim Term	LG's Construction	LG's Support
	is substantially decoupled from a spectral tilt of said wideband speech signal"		
	"signal preemphasis filter responsive to the wideband speech signal for enhancing a high frequency content of the wideband speech signal to thereby produce a preemphasised signal"	a specialized circuit that converts a wideband speech signal into a preemphasized signal with enhanced high frequency content	Intrinsic Evidence Abstract, Col. 2:16-30, 3:6-4:2, 6:48-8:18, 9:32- 63, 18:24-22:65; Fig. 1, Fig.2; U.S. Patent App. No. 09/830,726 (a related application) File History, Response to Office Action dated January 23, 2004 (e.g., pp. 5-11), Examiner's Amendment Communication dated April 14, 2004 (e.g., pp. 7- 8) Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999)
-	"a synthesis filter calculator responsive to said preemphasised signal for producing synthesis filter coefficients"	a specialized circuit that uses a preemphasised signal to calculate synthesis filter coefficients	Interioral fieldage Dictionary 4th ed. (2001) Intrinsic Evidence Abstract, Col. 1:41-4:2, 6:33-8:59, 9:32-63, 18:24-22:65; Fig.1, Fig.2; U.S. Patent App. No. 09/830,726 (a related application) File History, Response to Office Action dated January 23, 2004 (e.g., pp. 5-11), Examiner's Amendment Communication dated April 14, 2004 (e.g., pp. 7- 8). Extrinsic Evidence The American Heritage Dictionary 4th ed. (2001)
1, 8	"a perceptual weighting filter, responsive to said preemphasised signal and said synthesis filter coefficients, for filtering said preemphasised signal in relation to said synthesis filter coefficients to	a specialized circuit that converts a preemphasised signal into a perceptually weighted signal by filtering the preemphasized signal using synthesis filter coefficients	Intrinsic Evidence Abstract, Col. 2:6-4:2, 6:34-7:63, 8:59-9:63, 10:8-38, 18:24-22:65; Fig.1; U.S. Patent App. No. 09/830,726 (a related application) File History, Response to Office Action dated January 23, 2004 (e.g., pp. 5-11), Examiner's Amendment

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Claim(s)	Claim Term	LG's Construction	LG's Support
	thereby produce said perceptually weighted signal"		Communication dated April 14, 2004 (e.g., pp. 7- 8)
			Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)
15	"pitch codebook search device responsive to said perceptually weighted signal for producing pitch codebook parameters and an innovative search target vector"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		
15	"innovative codebook search device, responsive to said synthesis filter coefficients and to said innovative search target vector, for producing innovative codebook parameters"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		
15	"signal forming device for producing an encoded wideband speech signal"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		

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U.S. Patent No. 7,151,802

Claim(s)	1, 9, 25 "signal fragn receiving an wideband sig sampled duri extracting fro extracting fro wideband sig pitch codebo innovative co and linear pr coefficients"	This term § 112(6).	1, 9, 25 "combi said pit innovat produce	1, 9, 25 "signal a linear filtering relation filter co produce signal"	This tern § 112(6)
Claim Term	"signal fragmenting device for receiving an encoded version of a wideband signal previously down- sampled during encoding and extracting from said encoded wideband signal version at least pitch codebook parameters, innovative codebook parameters, and linear prediction filter coefficients"	This term is subject to 35 U.S.C. § 112(6).	"combiner circuit for combining said pitch codevector and said innovative codevector to thereby produce an excitation signal"	"signal synthesis device including a linear prediction filter for filtering said excitation signal in relation to said linear prediction filter coefficients to thereby produce a synthesized wideband signal"	This term is subject to 35 U.S.C. § 112(6).
LG's Construction	Indefinite		a specialized circuit for generating an excitation signal by combining pitch and innovative codevectors	Indefinite	
LG's Support			Intrinsic Evidence Col. 3:1-5:52, 7:29-8:21, 16:5-29, 17:7-25, 19:55- 28:45; Fig. 2 28:45; Fig. 2 Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)		

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Claim(s)	Claim Term	LG's Construction	LG's Support
1, 9, 25	"oversampler responsive to said synthesized wideband signal for producing an over-sampled signal version of the synthesized wideband signal"	a specialized circuit that uses a synthesized wideband signal to generate an over-sampled signal version of the synthesized wideband signal	Intrinsic Evidence Abstract, Col. 1:9-14, 2:46-62, 3:1-5:52, 7:29- 8:21, 5:33-35, 17:48-64, 19:55-28:45, Fig. 2; U.S. Patent App. No. 09/830,332 (a related application) File History, Response to Office Action dated January 05, 2005 (e.g., pp. 26-29), Response to Office Action dated December 13, 2005 (e.g., pp. 29-31), Response to Office Action dated July 14, 2006 (e.g., pp.24-26)
1, 9, 25	"said full-spectrum synthesized wideband signal"	Indefinite	
1, 9, 25	"random noise generator for producing a noise sequence having a given spectrum"	a specialized circuit that generates a noise sequence having a given spectrum	Intrinsic Evidence Abstract, Col. 1:9-14, 2:46-62, 3:1-5:52, 7:29- 8:21, 17:57-18:14, 19:55-28:45, Fig. 2; U.S. Patent App. No. 09/830,332 (a related application) File History, Response to Office Action dated January 05, 2005 (e.g., pp. 26-29), Response to Office Action dated December 13, 2005 (e.g., pp. 29-31), Response to Office Action dated July 14, 2006 (e.g., pp.24-26)
1, 9, 25	"spectral shaping unit for shaping the spectrum of the noise sequence in relation to linear prediction filter coefficients related to said down-sampled wideband signal" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
1, 9, 25	"signal injection circuit for injecting said spectrally-shaped	a specialized circuit for combining a spectrally-shaped noise sequence	Intrinsic Evidence Abstract, Col. 1:9-14, 2:46-62, 3:1-5:52, 7:29-

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Claim(s)	Claim Term	LG's Construction	LG's Support
	noise sequence in said over- sampled synthesized signal version"	with an over-sampled synthesized signal version	 8:21, 17:47-64, 19:29-43, 19:55-28:45; Fig. 2; U.S. Patent App. No. 09/830,332 (a related application) File History, Response to Office Action dated January 05, 2005 (e.g., pp. 26-29), Response to Office Action dated December 13, 2005 (e.g., pp. 29-31), Response to Office Action dated July 14, 2006 (e.g., pp.24-26) Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)
3, 11, 27, 35	"gain adjustment module, responsive to said white noise sequence and a set of gain adjusting parameters, for producing a scaled white noise sequence" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
3, 11, 27, 35, 49, 50, 52, 53	"spectral shaper for filtering the [said scaled white] noise sequence in relation to a bandwidth expanded version of the linear prediction filter coefficients to produce a filtered [scaled white] noise sequence"	a specialized circuit for using a bandwidth expanded version of the linear prediction filter coefficients to generate a filtered [scaled white] noise sequence	Intrinsic Evidence Abstract, Col. 1:9-14, 2:46-62, 3:1-5:52, 7:29- 8:21, 17:47-19:35, 19:55-28:45, Fig. 2; U.S. Patent App. No. 09/830,332 (a related application) File History, Response to Office Action dated January 05, 2005 (e.g., pp. 26-29), Response to Office Action dated December 13, 2005 (e.g., pp. 29-31), Response to Office Action dated July 14, 2006 (e.g., pp.25-26) Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999)

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3, 11, 27, 35, 49, 50, 52, 53 3, 11, 27, 35	"a frequency bandwidth generally higher than a frequency bandwidth of the [said] over-sampled synthesized signal version" "a band-pass filter responsive to said filtered scaled white noise sequence for producing a band- pass filtered scaled white noise	Indefinite Indefinite a specialized circuit for receiving and using a filtered scaled white noise sequence to generate a band- pass filtered scale white noise	Intermediation Intermediation Intrinsic Evidence Abstract, Col. 1:9-14, 2:46-62, 3:1-5:52, 7:29-8:21, 17:57-64, 19:36-43, 19:55-28:45, Fig. 2; U.S. App. 09/830,332 (a related application) File
	sequence"	sequence	History, Response to Office Action dated January 05, 2005 (e.g., p. 29) <u>Extrinsic Evidence</u> Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)

U.S. Patent No. 7,191,123

Claim(s)	Claim Term	LG's Construction	LG's Support
	"a factor $\lambda=0$ indicates a pure voiced signal and a factor $\lambda=1$ indicates a pure unvoiced signal"	Indefinite	
13, 14, 16, 33, 34, 36, 65, 66, 68, 81, 82, 84	"the first λ and second θ factors"	Indefinite	
0	"codevector finder delivering a codevector found in relation to said at least one first wideband signal encoding parameter"	a specialized circuit for using at least one first wideband signal encoding parameter to find and output a codevector	Intrinsic Evidence Abstract, Col. 2:33-5:12, 5:39-7:65, 14:53-17:3, 21:44-40:7, Figs. 1-5 '123 Patent File History, Applicant Response

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Claim(s)	Claim Term	LG's Construction	LG's Support
			dated January 1, 2006 at pp. 41-47; Applicant Response dated August 4, 2006 at pp. 38-46
20	"voicing factor calculator delivering a first factor representative of voicing in the wideband signal in response to said at least one second wideband signal encoding parameter"	a specialized circuit for receiving and using at least one second wideband signal encoding parameter to calculate and output a value that represents the voicing of the encoded wideband signal	Intrinsic Evidence Abstract, Col. 2:33-5:12, 5:39-7:65, 14:53-19:8, 20:21-55, 21:44-40:7, Figs. 1-5 '123 Patent File History, Applicant Response dated January 1, 2006 at pp. 41-47; Applicant Response dated August 4, 2006 at pp. 38-46 Extrinsic Evidence
20	"stability factor calculator delivering a second factor representative of stability of said wideband signal in response to said at least one third wideband signal encoding parameter"	a specialized circuit for receiving and using at least one third wideband signal encoding parameter to calculate and output a value that represents the stability of the encoded wideband signal	Intrinsic Evidence Abstract, Col. 2:33-5:12, 5:39-7:65; 14:53-17:3, 21:44-40:7, Figs. 1-5 '123 Patent File History, Applicant Response dated January 1, 2006 at pp. 41-47; Applicant Response dated August 4, 2006 at pp. 38-46 Extrinsic Evidence The American Heritage Dictionary 4th ed. (2001)
20	"smoothing gain calculator delivering a smoothing gain based on said first and second factors"	a specialized circuit for using the first and second factors to calculate and output a smoothing gain	Intrinsic Evidence Abstract, Col. 2:33-5:12, 5:39-7:65; 14:53-17:3, 21:44-40:7, Figs. 1-5 '123 Patent File History, Applicant Response dated January 1, 2006 at pp. 41-47; Applicant Response dated August 4, 2006 at pp. 38-46 Extrinsic Evidence

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	Claim Term	LG's Construction	LG's Support
			The American Heritage Dictionary 4th ed. (2001)
20	"amplifier amplifying said found codevector with said smoothing gain to thereby produce said gain-smoothed codevector"	a specialized circuit for using the smoothing gain to amplify the found codevector to generate a gain-smoothed vector	Intrinsic Evidence Abstract, Col. 2:33-5:12, 5:39-7:65; 14:53-17:3, 21:44-40:7, Figs. 1-5
			'123 Patent File History, Applicant Response dated January 1, 2006 at pp. 41-47; Applicant Response dated August 4, 2006 at pp. 38-46
0			Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)
21, 53, 69, 102, 103	"means for finding a codevector in relation to at least one first wideband signal encoding parameter of said set"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		
21, 53, 69	"means for calculating a first factor representative of voicing in the wideband signal in response to at least one second wideband signal encoding parameter of said set"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		
21, 53, 69	"means for calculating a second factor representative of stability of said wideband signal in response to at least one third wideband	Indefinite	

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Claim(s)	Claim Term	LG's Construction	LG's Support
	signal encoding parameter of said set" This term is subject to 35 U.S.C. § 112(6).		
21, 53, 69	"means for calculating a smoothing gain based on said first and second factors" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
21, 53, 69, 102, 103	"means for amplifying the found codevector with said smoothing gain to thereby produce said gain- smoothed codevector" This term is subject to 35 U.S.C. § 112(6).	Function: amplifying a found codevector with a smoothing gain to produce a gain-smoothed codevector Corresponding structure: amplifier circuit	Intrinsic Evidence Abstract, Col. 2:33-5:12, 14:53-17:3, 21:44-40:7, Figs. 1-5 '123 Patent File History, Applicant Response dated January 1, 2006 at pp. 41-47; Applicant Response dated August 4, 2006 at pp. 38-46 Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)
22, 24, 35, 54, 56, 67, 70, 72, 83	"means for finding an innovative codevector in an innovative codebook in relation to said at least one first wideband signal encoding parameter" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
22, 54, 70	"means for calculating the smoothing gain also in relation to	Indefinite	

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Claim Term LG's Construction
LG's Support

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Claim(s)	Claim Term	LG's Construction	LG's Support
	§ 112(6).		
30, 62, 78	"means for determining a distance measure giving a similarity between adjacent, successive linear prediction filters computed during encoding of the wideband signal" This term is subject to 35 U.S.C. & 112(6).	Indefinite	
31, 63, 79	"means for calculating an Imimitance Spectral Pair distance measure between the Immitance Spectral Pairs in a present frame n of the wideband signal and the Immitance Spectral Pairs of a past frame n-1 of the wideband signal through the following relation where p is the order of the linear prediction filters" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
33, 36, 65, 68, 81, 84	"means for calculating a gain smoothing factor Sm based on both the first λ and second θ factors through the following relation: Sm= $\lambda \theta$ " This term is subject to 35 U.S.C. \$ 112(6).	Indefinite	
35, 67, 83	"means for computing an initial	Indefinite	

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Claim(s)	modified gain g0"	This term i § 112(6).	35, 67, 83 "means for innovative computed of wideband s given by th from the pa follows if g	1.19 bounded t $g \ge g^{-1}$ then g by $g_0 \ge g^{-1}$ " This term is su § 112(6).	36 "a gain-sm producing 1 claim 35"	36, 68, 84 "means for detern smoothing gain th following relation *g0+(1-S m)*g"	This term is \$ 112(6).	53, 69 "means for encoded wi	This term is 8 112(6)
Claim Term	ain g0"	This term is subject to 35 U.S.C. § 112(6).	"means for comparing an innovative codebook gain g computed during encoding of the wideband signal to a threshold given by the initial modified gain from the past subframe g-1 as follows if $g < g-1$ then $g0 = g \times$	1.19 bounded by $g0 \leq g-1$ and if $g \geq g-1$ then $g0 = g/1.19$ bounded by $g0 \geq g-1$ " This term is subject to 35 U.S.C. § 112(6).	"a gain-smoothed codevector producing method as claimed in claim 35"	"means for determining said smoothing gain through the following relation: gs =Sm *g0+(1-S m)*g"	This term is subject to 35 U.S.C. § 112(6).	"means for transmitting the encoded wideband signal"	This term is subject to 35 U.S.C. 8 112(6)
LG's Construction			Indefinite		Indefinite	Indefinite		Function: transmitting an encoded wideband signal	Corresponding structure: transmission circuit
LG's Support								Intrinsic Evidence Col. 5:1-7:4, Fig. 4	
LG's Support								nce	5.4

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Claim(s)	Claim Term	LG's Construction	LG's Support
53, 69	"means for receiving a transmitted encoded wideband signal"	Function: receiving a transmitted encoded wideband signal	Intrinsic Evidence Col. 5:1-7:4, Fig. 4
	This term is subject to 35 U.S.C. § 112(6).	Corresponding structure: receiving circuit	
53, 69	"means responsive to a set of wideband signal encoding parameters for decoding the received encoded wideband signal"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		
102	"means for calculating a factor representative of voicing in the wideband signal in response to at least one second wideband signal encoding parameter of said set"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		
102	"means for calculating a smoothing gain using a non linear operation based on said voicing representative factor"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		
103	"means for calculating a factor representative of stability of said wideband signal in response to at least one second wideband signal	Indefinite	
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Claim(s)	Claim Term	LG's Construction	LG's Support
	encoding parameter of said set" This term is subject to 35 U.S.C. 8 112(6).		
103	"means for calculating a smoothing gain using a non linear operation based on said stability representative factor"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		

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Claim(s)	Claim Term	LG's Construction	LG's Support
	"a pitch codebook search device configured to generate a pitch code vector" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
1, 2, 7, 8, 10, 11, 17, 29, 35, 38, 44, 55, 56, 59, 62	"signal path"/ "signal paths"	a series of circuits for processing a signal	Intrinsic Evidence Abstract, Col. 2:56-3:19, 3:42-48, 3:52-4:17, 5:20-42, 11:11-12:56, 18:25-26:50, Figs. 1-3 '521 Patent File History, Applicant Response dated November 1, 2002 (e.g., pp. 2-6, pp.29-37) Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)

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Claim(s)	Claim Term	LG's Construction	LG's Support
-	"pitch prediction error calculating device for calculating a pitch prediction error of said pitch codevector from said pitch codebook search device" This term is subject to 35 U.S.C. § 112(6).	Indefinite	
1, 2, 3	"filter for filtering the pitch codevector before supplying said pitch codevector to the pitch prediction error calculating device"	a specialized circuit for filtering a pitch codevector and supplying the filtered pitch codevector to the pitch prediction error calculating device	Intrinsic Evidence Col. 2:56-3:19, 5:20-42, 6:35-7:3, 11:11-12:56, 18:25-26:50, Fig. 1, Fig. 3 '521 Patent File History, Applicant Response dated November 1, 2002 (e.g., pp.29-37) Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)
-	"a selector for comparing the pitch prediction errors calculated in said at least two signal paths, for choosing the signal path having the lowest calculated pitch prediction error and for selecting the set of pitch codebook parameters associated to the chosen signal path"	a specialized circuit connected to at least two signal paths for using calculated pitch prediction errors to select a set of pitch codebook parameters from the signal path with the lowest calculated pitch prediction error	Intrinsic Evidence Col. 2:56-3:19, 5:20-42, 6:35-7:3, 11:11-12:56, 18:25-26:50, Fig. 1, Fig. 3 '521 Patent File History, Applicant Response dated November 1, 2002 (e.g., pp.29-37)
5, 14, 32, 41	"convolution unit for convolving the pitch codevector with a	Indefinite	

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Claim(s)	Claim Term	LG's Construction	LG's Support
	weighted synthesis filter impulse response signal" This term is subject to 35 U.S.C. § 112(6).		
5, 14, 32, 41	"pitch gain calculator for calculating a pitch gain in response to the convolved pitch codevector and a pitch search target vector"	a specialized circuit for receiving and using a convolved pitch codevector and a pitch search target vector to calculate a pitch gain	Intrinsic Evidence Col. 2:56-3:19, 5:20-42, 6:35-7:3, 11:43-12:56, 18:25-26:50, Fig. 1, Fig. 3 Extrinsic Evidence The American Heritage Dictionary 4th ed. (2001)
5, 14, 32, 41	"amplifier for multiplying the convolved pitch codevector by the pitch gain"	a specialized circuit for multiplying a convolved pitch codevector with a pitch gain	Intrinsic Evidence Col. 2:56-3:19, 5:20-42, 11:43-12:56, 18:25- 26:50, Fig. 1, Fig. 3 Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)
5, 14, 32, 41	"combiner circuit for combining the amplified convolved pitch codevector with the pitch search target vector to thereby produce the pitch prediction error"	a specialized circuit for generating a pitch prediction error by combining an amplified convolved pitch codevector with a pitch search target vector	Intrinsic Evidence Col. 2:56-3:19, 5:20-42, 11:43-12:56, 18:25- 26:50, Fig. 1, Fig. 3 Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)
6, 15, 33, 42	"means for calculating said pitch gain b(j) using the relation: b ^(j) =x ^t y ^(j) / y ^(j) ² " This term is subject to 35 U.S.C. \$ 112(6).	Indefinite	
8, 17, 35, 44	"means for calculating an energy	Indefinite	

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Claim(s) 8, 17, 35, 44 10	Claim Term of the corresponding pitch prediction error" This term is subject to 35 U.S.C. § 112(6). "means for comparing the energies of said pitch prediction errors of the different signal path having the lowest calculated pitch prediction error the signal path having the lowest calculated pitch prediction error the signal path having the lowest calculated energy of the pitch prediction error" This term is subject to 35 U.S.C. § 112(6). "finear prediction synthesis filter calculator for producing linear prediction synthesis filter coefficients"	LG's Construction Indefinite a specialized circuit for receiving and using a wideband signal to calculate linear prediction synthesis filter coefficients	LG's Support LG's Support Intrinsic Evidence Col. 2:56-4:17, 5:20-42, 6:35-7:3, 7:55-8:24, 9:6- 38, 11:43-12:56, 18:25-26:50, Fig. 1, Fig. 3 38, 11:43-12:56, 18:25-26:50, Fig. 1, Fig. 3 Extrinsic Evidence Extrinsic Evidence The American Heritage Dictionary 4th ed. (2001)
10	"perceptual weighting filterfor producing a perceptually weighted signal"	a specialized circuit for receiving and converting a wideband signal into a perceptually weighted signal using linear prediction synthesis filter coefficients	Intrinsic Evidence Col. 2:56-4:17, 5:20-42, 6:35-7:3, 8:39-9:39, 11:43-12:56, 18:25-26:50, Fig. 1, Fig. 3 Extrinsic Evidence Newton's Telecom Dictionary 15th ed. (1999) The American Heritage Dictionary 4th ed. (2001)

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ion LG's Support	Intrinsic Evidenc Col. 2:56-4:17, 5:2 12:56, 18:25-26:56 <u>Extrinsic Evidenc</u> Newton's Telecon The American Her			
LG's Construction	a specialized circuit for receiving and using linear prediction synthesis filter coefficients to generate a weighted synthesis filter impulse response signal	Indefinite	Indefinite	Indefinite
Claim Term	"impulse response generatorfor producing a weighted synthesis filter impulse response signal"	"pitch search unit for producing pitch codebook parameters" This term is subject to 35 U.S.C. § 112(6).	"pitch codebook search device responsive to the perceptually weighted signal and linear prediction synthesis filter coefficients for producing the pitch codevector and an innovative search target vector" This term is subject to 35 U.S.C. & 112(6).	"pitch analysis device responsive to the pitch codevector for selecting, from said sets of pitch codebook parameters, the set of pitch codebook parameters associated to the single path having the lower calculated pitch
Claim(s)	10	10	10	10

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Claim(s)	Claim Term	LG's Construction	LG's Support
	This term is subject to 35 U.S.C. § 112(6).		
10	"innovative codebook search devicefor producing innovative codebook parameters" This term is subject to 35 U.S.C.	Indefinite	
10	§ 112(6). "signal forming device for producing an encoded wideband signal"	Indefinite	
	This term is subject to 35 U.S.C. § 112(6).		
55	"pitch codebook search device"	Indefinite	

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