United States District Court, S.D. California.

#### LUCENT TECHNOLOGIES, INC,

Plaintiff.

v.

# GATEWAY, INC. and Gateway Country Stores LLC; and, Microsoft Corporation; and, Dell, Inc, Defendants.

Civil Nos. 02CV2060-B(LAB), 03CV0699-B(LAB), 03CV1108-B(LAB)

# April 15, 2004.

David A. Hahn, Attorney at Law, San Diego, CA, Edward Charles Donovan, Gregory F. Corbett, Karen Michelle Robinson, Kirkland and Ellis, Washington, DC, Elizabeth T. Bernard, James E. Marina, Jeanne M. Heffernan, John M. Desmarais, Jonas Reale McDavit, Jordan N. Malz, Michael P. Stadnick, Paul A. Bondor, Robert A. Appleby, Tamir Packin, Kirkland and Ellis LLP, New York, NY, Eric D. Hayes, Kirkland and Ellis, Chicago, IL, Kenneth H. Bridges, Kirkland and Ellis, San Francisco, CA, for Plaintiff.

Joseph A. Micallef, John L. Newby, Arnold and Porter, Washington, DC, Ryan M. Nishimoto, Arnold & Porter LLP, Los Angeles, CA, for Dell, Inc.

# ORDER CONSTRUING CLAIMS FOR UNITED STATES PATENT NUMBER 4,701,954

# RUDI M. BREWSTER, District Judge.

Before the Court is the matter of claims construction for U.S. Patent Number 4,701,954 ("the Atal '954 Patent") in the above titled cases for patent infringement. FN1 Pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996), the Court conducted a Markman hearing regarding construction of the disputed claim terms for the Atal '954 Patent on March 30, 2004 and April 1, 2004. Plaintiff Lucent Technologies, Inc. ("Lucent") was represented by the Kirkland & Ellis law firm, Defendant Gateway Inc. ("Gateway") was represented by the Dewey Ballantine law firm, Defendant Microsoft Corporation ("Microsoft") was represented by the law firm of Fish and Richardson and Defendant Dell, Inc. ("Dell") was represented by the Arnold and Porter law firm.

FN1. Lucent originally filed two separate patent infringement actions, one against Defendant Gateway (02CV2060), and a second against Defendant Dell (03CV1108). Microsoft intervened in the action filed by Lucent against Gateway. Microsoft also filed a declaratory judgment action against Lucent (03CV0699) and Lucent filed counterclaims for patent infringement against Microsoft in that action. On July 7, 2003, the Court entered an order consolidating these three cases. There are a total of 15 different patents involved in these three cases collectively.

The purpose of the Markman hearing was for the Court, with the assistance of the parties, to prepare jury instructions interpreting the pertinent claims for all claim terms at issue in the Atal '954 Patent. Additionally, the Court and the parties prepared a "case glossary" for terms found in the claims and the specification for the Atal '954 Patent, considered to be technical in nature and which a jury of laypersons would not understand clearly without specific definition. As the case advances, the parties may request additional terms to be added to the glossary as to further facilitate the jury's understanding of the disputed claims.

After careful consideration of the parties' arguments and the applicable statues and case law, the Court **HEREBY CONSTRUES** all claim terms in dispute in the Atal '954 Patent and **ISSUES** the relevant jury instructions as written in exhibit A, attached hereto. Further, the Court **HEREBY DEFINES** all pertinent technical terms as written in exhibit B, attached hereto.

#### **IT IS SO ORDERED**

VERBATIM CLAIM LANGUAGE	COURT'S CONSTRUCTION
Claim 1	
A method for generating multipulse excitation codes for a speech pattern comprising the steps of:	A method for generating <b>multipulse excitation codes</b> [coded representations of excitation (input to a synthesis filter) which consist of a series of pulses, each described with a location in time and magnitude] for a speech pattern comprising the steps of:
partitioning a speech pattern into successive time frame portions;	partitioning a speech pattern into successive time frame portions;
generating a set of predictive parameter signals representative of the speech pattern portion of each successive time frame;	generating a set of <b>predictive parameter signals</b> <b>representative of the speech pattern portion</b> [filter coefficients that represent the spectral envelope of the speech pattern portion] of each successive time frame;
producing a signal representative of the predictive residual of each successive time frame speech pattern portion responsive to the time frame speech parameter signals and time frame speech pattern portion; and	producing a signal representative of the predictive residual [a signal which represents the speech signal with its formant redundancy removed] of each successive time frame speech pattern portion responsive to the time frame speech parameter signals and time frame speech pattern portion; and
generating a multipulse excitation code having a sequence of n=1, 2,, N pulses for each successive time frame to provide prescribed coded speech pattern quality where N is substantially independent of the pitch of the speech pattern by iteratively forming pulses for said time frame, each pulse having a magnitude (beta) and a location m within the frame in N successive iterations and each successive iteration including the steps of;	generating a multipulse excitation code having a sequence of n=1, 2,, N pulses for each successive time frame to provide prescribed coded speech pattern quality where N is substantially independent of the pitch of the speech pattern by iteratively forming pulses for said time frame, each pulse having a <b>magnitude</b> [a quantitative description of size] (beta) [a mathematical notation for the size of a pulse] and a location <b>m</b> [a mathematical notation for the location of a pulse] within the frame in N successive iterations and <b>each</b> <b>successive iteration including the steps of</b> [all of the steps following this clause must each be performed in

#### EXHIBIT A-Atal '954 Patent

	forming each pulse];
combining said time frame predictive parameter	combining said time frame predictive parameter signals
signals with said time frame predictive residual	with said time frame predictive residual signals to form
signals to form a signal $y(n)$ corresponding to the	a signal $y(n)$ corresponding to the time frame speech
time frame speech pattern portion,	pattern portion,
combining the excitation pulse sequence of the	combining the excitation pulse sequence of the
preceding iteration with said time frame predictive	preceding iteration with said time frame predictive
parameter signals to form a signal $z(n)$	parameter signals to form a signal z(n) corresponding
corresponding to the contribution of the preceding	to the contribution of the preceding iteration excitation
iteration excitation pulse sequence to the time frame	pulse sequence to the time frame speech pattern
speech pattern portion,	portion,
forming a signal representative of the differences	forming a signal representative of the differences
between said signal y(n) corresponding to the time	between said signal y(n) corresponding to the time
frame speech pattern portion and said signal z(n)	frame speech pattern portion and said signal $z(n)$
corresponding to the contribution of the preceding	corresponding to the contribution of the preceding
iteration excitation pulse sequence to the time frame	iteration excitation pulse sequence to the time frame
speech pattern portion,	speech pattern portion,
comparing the current time frame signal	comparing the current time frame signal representative
representative of the differences between the signal	of the differences between the signal y(n)
y(n) corresponding to the time frame speech pattern	corresponding to the time frame speech pattern portion
portion and said signal z(n) corresponding to the	and said signal z(n) corresponding to the contribution
contribution of the preceding iteration excitation	of the preceding iteration excitation pulse sequence to
pulse sequence to the time frame speech pattern	the time frame speech pattern portion with the signal of
portion with the signal of prescribed preceding time	prescribed preceding time frames representative of the
frames representative of the differences between	differences between said signal y(n) corresponding to
said signal y(n) corresponding to the preceding time	the preceding time frame speech pattern portion and
frame speech pattern portion and said signal z(n)	said signal z(n) corresponding to the contribution of the
corresponding to the contribution of the preceding	preceding iteration excitation pulse sequence to the
iteration excitation pulse sequence to the preceding	preceding time frame speech pattern portion to
time frame speech pattern portion to generate a	generate a signal $y_p(n)$ representative of speech pattern
signal $y_p(n)$ representative of speech pattern portions	portions of said preceding time frames having a
of said preceding time frames having a	predetermined degree of similarity to the speech
predetermined degree of similarity to the speech	pattern portion of the time frame, and
pattern portion of the time frame, and	
producing an excitation pulse of magnitude (beta)	producing an excitation pulse of magnitude (beta) and
and location m for the present iteration responsive to	location m for the present iteration responsive to the
the differences between said speech pattern portion	differences between said speech pattern portion
representative signal $y(n)$ and the sum of said signal	representative signal $y(n)$ and the sum of said signal
representative of the contribution of the preceding	representative of the contribution of the preceding
iteration excitation pulse sequence to the time frame	iteration excitation pulse sequence to the time frame
speecn pattern portion and said signal $y_p(n)$	speech pattern portion and said signal $y_p(n)$
representative of similar speech pattern portions of	representative of similar speech pattern portions of said
said preceding time frames.	preceding time trames.
Liaim 2	A mosth of fair accounting and the second
A method for generating multipulse excitation codes	A method for generating multipulse excitation codes
for a speech pattern according to claim 1 further	for a speech pattern according to claim 1 further

comprising the step of utilizing said framecomprising the step of utilizing said frame multiphasemultiphase excitation code and said frame predictivecomprising the step of utilizing said frame multiphaseparameter signals to construct a replica of said frameexcitation code and said frame predictive parameterspeech pattern.speechClaim 6speech

Ciaim o	
A method for producing a speech message	A method for producing a speech message
comprising:	comprising:
receiving a sequence of speech message time frame	receiving a sequence of speech message time frame
signals, each speech time frame signal including a set	signals, each speech time frame signal including a set
of linear predictive speech parameter signals, a first	of linear predictive speech parameter signals
coded excitation signal, and a second coded	[linear filter coefficients hat represent the spectral
excitation signal for said time frame; forming a	envelope of the input speech], a first coded excitation
multipulse speech message excitation representative	<b>signal</b> [a coded representation of an excitation (input
signal for the frame responsive to said first and	to a synthesis filter) ], and a second coded excitation
second coded excitation signals, and	signal for said time frame; forming a <b>multipulse</b>
	speech message excitation representative signal
	the decoded input into a synthesis filter for
	reconstructing speech at a decoder] for the frame
	responsive to said first and second coded excitation
	signals, and
generating a speech pattern corresponding to the	generating a speech pattern corresponding to the
speech message jointly responsive to said frame linear	speech message jointly responsive to said frame
speech parameter signals and said frame multipulse	linear speech parameter signals and said frame
excitation representative signal;	multipulse excitation representative signal;
the first coded excitation signal for said frame being	the first coded excitation signal for said frame being
formed by the steps of:	formed by the steps of:
partitioning a speech pattern into successive time	partitioning a speech pattern into successive time
frame portions;	frame portions;
generating a set of predictive parameter signals	generating a set of predictive parameter signals
representative of the speech pattern portion of each	representative of the speech pattern portion [filter
successive time frame;	coefficients that represent the spectral envelope of the
	speech pattern portion] of each successive time
	frame;
producing a signal representative of the predictive	producing a signal representative of the predictive
residual of each successive time frame speech pattern	residual [a signal which represents the speech signal
portion responsive to the time frame speech parameter	with its formant redundancy removed] of each
signals and time frame speech pattern portion; and	successive time frame speech pattern portion
	responsive to the time frame speech parameter signals
	and time frame speech pattern portion; and
generating a multipulse excitation code having a	generating a multipulse excitation code laving a
sequence of n=1, 2,, N pulses for each successive	sequence of $n=1, 2,, N$ pulses for each successive
time frame to provide prescribed coded speech pattern	time frame to provide prescribed coded speech
quality where N is substantially independent of the	pattern quality where N is substantially independent
pitch of the speech pattern by iteratively forming a	of the pitch of the speech pattern by iteratively
sequence of pulses for said time frame, each pulse	forming a sequence of pulses for said time frame,
having a magnitude (beta) and a location m within the	each pulse having a magnitude [a quantitative
frame in successive iterations and each successive	description of size] (beta) [a mathematical notation

iteration including the steps of:	for the size of a pulse] and a location <b>m</b> [a mathematical notation for the location of a pulse] within the frame in successive iterations and <b>each</b> <b>successive iteration including the steps of</b> [all of the steps following this clause must each be performed in forming each pulse]:
combining said time frame predictive parameter	combining said time frame predictive parameter
signals with said time frame predictive residual	signals with said time frame predictive residual
signals to form a signal $v(n)$ corresponding to the	signals to form a signal $y(n)$ corresponding to the
time frame speech pattern portion.	time frame speech pattern portion.
combining the excitation pulse sequence of the	combining the excitation pulse sequence of the
preceding iteration with said time frame predictive	preceding iteration with said time frame predictive
parameter signals to form a signal $z(n)$ corresponding	parameter signals to form a signal $z(n)$ corresponding
to the contribution of the preceding iteration	to the contribution of the preceding iteration
excitation pulse sequence to the time frame speech	excitation pulse sequence to the time frame speech
pattern portion.	pattern portion.
forming a signal representative of the differences	forming a signal representative of the differences
between said signal $v(n)$ corresponding to the time	between said signal $v(n)$ corresponding to the time
frame speech pattern portion and said signal $z(n)$	frame speech pattern portion and said signal $z(n)$
corresponding to the contribution of the preceding	corresponding to the contribution of the preceding
iteration excitation pulse sequence to the time frame	iteration excitation pulse sequence to the time frame
speech pattern portion,	speech pattern portion,
comparing the current time frame signal	comparing the current time frame signal
representative of the differences between said signal	representative of the differences between said signal
y(n) corresponding to the time frame speech pattern	y(n) corresponding to the time frame speech pattern
portion and said signal $z(n)$ corresponding to the	portion and said signal $z(n)$ corresponding to the
contribution of the preceding iteration excitation pulse	contribution of the preceding iteration excitation
sequence to the time frame speech pattern portion of	pulse sequence to the time frame speech pattern
the current time frame with the signal of prescribed	portion of the current time frame with the signal of
preceding time frames representative of the	prescribed preceding time frames representative of
differences between said signal y(n) corresponding to	the differences between said signal y(n)
the preceding time frame speech pattern portion and	corresponding to the preceding time frame speech
said signal $z(n)$ corresponding to the contribution of	pattern portion and said signal z(n) corresponding to
the preceding iteration excitation pulse sequence to	the contribution of the preceding iteration excitation
the preceding time frame speech pattern portion to	pulse sequence to the preceding time frame speech
generate a signal $y_p(n)$ representative of speech	pattern portion to generate a signal $y_p(n)$
pattern portions of said preceding time frames having	representative of speech pattern portions of said
a predetermined degree of similarity to the speech	preceding time frames having a predetermined degree
pattern portion of the time frame, and	of similarity to the speech pattern portion of the time
	frame, and
producing an excitation pulse of magnitude (beta)	producing an excitation pulse of magnitude (beta)
and location m for the present iteration responsive	and location m for the present iteration responsive to
to the differences between said speech pattern	the differences between said speech pattern portion
portion representative signal y(n) and the sum of	representative signal $y(n)$ and the sum of said signal
said signal representative of the contribution of the	representative of the contribution of the preceding
preceding iteration excitation pulse sequence to the	iteration excitation pulse sequence to the time frame

time frame speech pattern portion and said signal  $y_p(n)$  representative of similar speech pattern portions of said preceding time frames.

speech pattern portion and said signal  $y_p(n)$  representative of similar speech pattern portions of said preceding time frames.

#### EXHIBIT B-Atal '954 Patent

(beta)-a mathematical notation for the size of a pulse

Magnitude-a quantitative description of size

m-a mathematical notation for the location of a pulse

**Multipulse Excitation Codes**-coded representations of excitation (input to a synthesis filter) which consist of a series of pulses, each described with a location in time and magnitude

Linear Predictive Speech Parameter Signals-linear filter coefficients that represent the spectral envelope of the input speech

Coded Excitation Signal-a coded representation of an excitation (input to a synthesis filter)

Multipulse Speech Message Excitation Representative Signal-the decoded input into a synthesis filter for reconstructing speech at a decoder

S.D.Cal.,2004. Lucent Technologies, Inc. v. Gateway, Inc.

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