

Plaintiff The California Institute of Technology ("Caltech") and Defendants
Hughes Communications Inc., Hughes Network Systems LLC, DISH Network
Corporation, DISH Network LLC, and dishNET Satellite Broadband LLC
(collectively, "Hughes") hereby submit this Joint Claim Construction and
Prehearing Statement pursuant to the Court's Amended Scheduling Order (Dkt. No.

47).

I. AGREED CLAIM CONSTRUCTIONS

The parties have reached agreement on the construction of the following claim terms:

_ /	ciam terms.			
10	Claim Term(s)	Patent Claim(s)	Agreed Construction	
11	"irregularly"	'710 patent, claim 15; '032 patent, claim 1	"a different number of times"	
12	66:	(710	%-1	
13	"interleaving" / "interleaver" / "scramble"	'710 patent, claims 1, 15, and 19	"changing the order of data elements" / "module	
14			that changes the order of data elements"	
15			data elements	
16	"sums of bits in subsets of the information bits" /	'781 patent, claims 6, 13, 20, 21, 22	"the result(s) of adding together two or more	
17	"summing of bits in a	20, 21, 22	information bits from a	
18	subset of the information bits" / "adding additional		subset of information bits" / "adding together	
19	subsets of information		two or more information	
20	bits"		bits from a subset of information bits"	
21			THOMAS OF ORD	
22	"wherein two or more memory locations of the	'833 patent, claims 1 and 8	"where two or more memory locations of the	
23	first set of memory		first set of memory	
24	locations are read by the permutation module		locations are read by the permutation module a	
25	different times from one		different number of times	
26	another"		from one another"	
27	"permutation module"	'833 patent, claims 1, 2,	"a module that changes	
28		3, 6 and 8	the order of data	
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	elements"

If the parties reach agreement as to the constructions of additional terms at a later date, they will supplement the Joint Statement to reflect any such additional agreement.

II. DISPUTED CLAIM CONSTRUCTIONS

The parties have identified the following terms as disputed, and respectfully request that they be construed by the Court:

Claim Term(s)	Patent Claim(s)	Caltech's Construction	Hughes's Construction
"repeat"	'710 patent, claims 1, 6, 11, 15,16, and 19	"re-use in forming a code"	"sequential duplication"
$x_j = x_{j-1} + \sum_{i=1}^{a} v_{(j-1)(a+i)}$	'032 claim 1	"The parity bit X_j is the sum of (a) the parity bit X_{j-1} and (b) the sum of a number, "a," of randomly chosen irregular repeats of the message bits"	This term is indefinite under 35 U.S.C. §112, ¶2. In the alternative, plain meaning.
RANDOM PERMITATION	'032 patent, claims 11 and 18	The Tanner Graph shows the generation of parity bits (indicated by x _i) whose values are each determined by the constraints imposed by the check nodes (indicated by v _i) they are each connected to. Each check	This term is indefinite under 35 U.S.C. §112, ¶2. At a minimum, however, this limitation requires "at least three information bits, where each of the three information bits contributes to a

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Claim Term(s)	Patent Claim(s)	Caltech's Construction	Hughes's Construction
		node is also randomly	different number of parity checks."
		connected to	or parity effects.
		message bits,	
		where subsets of message bits are	
		re-used a different	
		number of times	
		in forming the connections to	
		check nodes; one	
		subset will be re-	
		used two times, one subset will be	
		re-used three	
		times, and at least	
		one additional subset will be re-	
		used more than	
		three times. A	
		check node imposes the	
		constraint that the	
		modulo-2 sum of all bits connected	
		to it is "0."	
"transmitting" /	'022 natant	"conding over a	"ganding over a
"transmitting" / "transmission"	'032 patent, claims 1, 8 and	"sending over a channel"	"sending over a physical channel"
	10		
"codeword"	'781 patent,	"a discrete	"a discrete
	claims 1-4, 11,	encoded sequence	sequence of data
	13-16, 19-21	of data elements "	elements encoded for transmission"
			101 transmission
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Claim Term(s)	Patent Claim(s)	Caltech's Construction	Hughes's Construction
"combine"	'833 patent, claims 1, 2, 3, 8, 9, 10, and 13	"performing mod- 2 addition or exclusive-OR sum and/or writing the sum to the second set of memory locations based on a corresponding index"	This term is indefinite under 35 U.S.C. §112, ¶2. In the alternative, plain meaning.

The parties respectfully reserve the right to amend, correct, or supplement their respective claim construction positions in response to any change of position by another party or for other good cause.

III. ANTICIPATED LENGTH OF CLAIM CONSTRUCTION HEARING

The parties expect that the claim construction hearing will take three hours.

IV. PROPOSED WITNESSES TO CALL

The parties do not intend to offer any live witness testimony at the claim construction hearing.

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