

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**REALTIME DATA, LLC (doing business as IXO),**  
*Plaintiff-Appellant,*

v.

**MORGAN STANLEY, THE GOLDMAN SACHS  
GROUP, INC., J.P. MORGAN CHASE & CO.,  
MORGAN STANLEY & CO., INC., GOLDMAN  
SACHS & CO., GOLDMAN SACHS EXECUTION &  
CLEARING, LP, J.P. MORGAN SECURITIES, INC.,  
AND J.P. MORGAN CLEARING CORP.**  
**(formerly known as Bear, Stearns Securities Corp.),**  
*Defendants-Appellees,*

AND

**CREDIT SUISSE HOLDINGS (USA), INC. AND  
CREDIT SUISSE SECURITIES (USA), LLC,**  
*Defendants-Appellees,*

AND

**HSBC BANK USA, N.A. AND  
HSBC SECURITIES (USA), INC.,**  
*Defendants-Appellees,*

AND

**BNY CONVERGEX GROUP, LLC AND**

**BNY CONVERGEX EXECUTION SOLUTIONS, LLC,**  
*Defendants.*

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2013-1092

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Appeals from the United States District Court for the Southern District of New York in No. 11-CV-6696, Judge Katherine B. Forrest.

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**REALTIME DATA, LLC (doing business as IXO),**  
*Plaintiff-Appellant,*

v.

**CME GROUP, INC., BOARD OF TRADE OF THE  
CITY OF CHICAGO, INC., NEW YORK  
MERCANTILE EXCHANGE, INC. (agent of Nymex),**  
*Defendants-Appellees,*

AND

**BATS TRADING, INC., (also known as BATS Ex-  
change, Inc.)**  
*Defendant-Appellee,*

AND

**INTERNATIONAL SECURITIES EXCHANGE,**  
*Defendant-Appellee,*

AND

**NASDAQ OMX GROUP, INC., AND  
NASDAQ OMX PHLX, INC.,**  
*Defendants-Appellees,*

**NYSE EURONEXT, OPTIONS PRICE REPORTING  
AUTHORITY, NYSE ARCA, INC., NYSE MKT, LLC  
(formerly known as NYSE Amex, LLC), AND  
SECURITIES INDUSTRY AUTOMATION  
CORPORATION,  
*Defendants-Appellees.***

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2013-1093

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Appeal from the United States District Court for the  
Southern District of New York in No. 11-CV-6697, Judge  
Katherine B. Forrest.

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**REALTIME DATA, LLC (doing business as IXO),  
*Plaintiff-Appellant,***

**v.**

**THOMSON REUTERS CORPORATION,  
*Defendant-Appellee,***

**AND**

**BLOOMBERG L.P.,  
*Defendant-Appellee,***

**AND**

**FACTSET RESEARCH SYSTEMS, INC.,  
*Defendant-Appellee,***

**AND**

**INTERACTIVE DATA CORPORATION,**  
*Defendant-Appellee.*

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2013-1095

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Appeal from the United States District Court for the Southern District of New York in No. 11-CV-6698, Judge Katherine B. Forrest.

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**REALTIME DATA, LLC (doing business as IXO),**  
*Plaintiff-Appellant,*

v.

**CME GROUP, INC., BOARD OF TRADE OF THE  
CITY OF CHICAGO, INC., NEW YORK  
MERCANTILE EXCHANGE, INC. (agent of Nymex),**  
*Defendants-Appellees,*

AND

**BATS TRADING, INC., (also known as BATS Ex-  
change, Inc.)**  
*Defendant-Appellee,*

AND

**INTERNATIONAL SECURITIES EXCHANGE,**  
*Defendant-Appellee,*

AND

**NASDAQ OMX GROUP, INC., AND  
NASDAQ OMX PHLX, INC.,**  
*Defendants-Appellees,*

**NYSE EURONEXT, OPTIONS PRICE REPORTING  
AUTHORITY, NYSE ARCA, INC., NYSE MKT, LLC  
(formerly known as NYSE Amex, LLC), AND  
SECURITIES INDUSTRY AUTOMATION  
CORPORATION,  
*Defendants-Appellees.***

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2013-1097

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Appeal from the United States District Court for the  
Southern District of New York in No. 11-CV-6699, Judge  
Katherine B. Forrest.

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**REALTIME DATA, LLC (doing business as IXO),  
*Plaintiff-Appellant,***

**v.**

**THOMSON REUTERS CORPORATION,  
*Defendant-Appellee,***

**AND**

**BLOOMBERG L.P.,  
*Defendant-Appellee,***

**AND**

**FACTSET RESEARCH SYSTEMS, INC.,  
*Defendant-Appellee,***

**AND**

**INTERACTIVE DATA CORPORATION,**  
*Defendant-Appellee.*

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2013-1098

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Appeal from the United States District Court for the Southern District of New York in No. 11-CV-6700, Judge Katherine B. Forrest.

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**REALTIME DATA, LLC (doing business as IXO),**  
*Plaintiff-Appellant,*  
v.

**MORGAN STANLEY, THE GOLDMAN SACHS  
GROUP, INC., J.P. MORGAN CHASE & CO.,  
MORGAN STANLEY & CO., INC., GOLDMAN  
SACHS & CO., GOLDMAN SACHS EXECUTION &  
CLEARING, LP, J.P. MORGAN SECURITIES, INC.,  
AND J.P. MORGAN CLEARING CORP.**  
(formerly known as Bear, Stearns Securities Corp.),  
*Defendants-Appellees,*

AND

**CREDIT SUISSE HOLDINGS (USA), INC. AND  
CREDIT SUISSE SECURITIES (USA), LLC,**  
*Defendants-Appellees,*

AND

**HSBC BANK USA, N.A. AND  
HSBC SECURITIES (USA), INC.,**  
*Defendants-Appellees,*

AND

**BNY CONVERGEX GROUP, LLC, BNY  
CONVERGEX EXECUTION SOLUTIONS, LLC, THE  
BANK OF NEW YORK MELLON CORPORATION,  
BANK OF AMERICA CORPORATION, BANC OF  
AMERICA SECURITIES, LLC, MERRILL LYNCH &  
CO., INC., AND MERRILL LYNCH, PIERCE,  
FENNER & SMITH, INC.,**  
*Defendants,*

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2013-1099

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Appeal from the United States District Court for the  
Southern District of New York in No. 11-CV-6701, Judge  
Katherine B. Forrest.

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**REALTIME DATA, LLC (doing business as IXO),**  
*Plaintiff-Appellant,*

**v.**

**CME GROUP, INC., BOARD OF TRADE OF THE  
CITY OF CHICAGO, INC., NEW YORK  
MERCANTILE EXCHANGE, INC. (agent of Nymex),**  
*Defendants-Appellees,*

**AND**

**BATS TRADING, INC., (also known as BATS Ex-  
change, Inc.)**  
*Defendant-Appellee,*

**AND**

**INTERNATIONAL SECURITIES EXCHANGE,**

*Defendant-Appellee,*

AND

**NASDAQ OMX GROUP, INC., AND  
NASDAQ OMX PHLX, INC.,**  
*Defendants-Appellees,*

**NYSE EURONEXT, OPTIONS PRICE REPORTING  
AUTHORITY, NYSE ARCA, INC., NYSE MKT, LLC  
(formerly known as NYSE Amex, LLC), AND  
SECURITIES INDUSTRY AUTOMATION  
CORPORATION,**  
*Defendants-Appellees.*

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2013-1100

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Appeal from the United States District Court for the  
Southern District of New York in No. 11-CV-6702, Judge  
Katherine B. Forrest.

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**REALTIME DATA, LLC (doing business as IXO),**  
*Plaintiff-Appellant,*

v.

**THOMSON REUTERS CORPORATION,**  
*Defendant-Appellee,*

AND

**BLOOMBERG L.P.,**  
*Defendant-Appellee,*

AND



**FACTSET RESEARCH SYSTEMS, INC.,**  
*Defendant-Appellee,*

AND

**INTERACTIVE DATA CORPORATION,**  
*Defendant-Appellee.*

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2013-1101

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Appeal from the United States District Court for the Southern District of New York in No. 11-CV-6703, Judge Katherine B. Forrest.

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**REALTIME DATA, LLC (doing business as IXO),**  
*Plaintiff-Appellant,*

v.

**MORGAN STANLEY, THE GOLDMAN SACHS GROUP, INC., J.P. MORGAN CHASE & CO., MORGAN STANLEY & CO., INC., GOLDMAN SACHS & CO., GOLDMAN SACHS EXECUTION & CLEARING, LP, J.P. MORGAN SECURITIES, INC., AND J.P. MORGAN CLEARING CORP.**  
**(formerly known as Bear, Stearns Securities Corp.),**  
*Defendants-Appellees,*

AND

**CREDIT SUISSE HOLDINGS (USA), INC. AND CREDIT SUISSE SECURITIES (USA), LLC,**  
*Defendants-Appellees,*

AND

**HSBC BANK USA, N.A. AND  
HSBC SECURITIES (USA), INC.,**  
*Defendants-Appellees,*

AND

**BNY CONVERGEX GROUP, LLC, BNY  
CONVERGEX EXECUTION SOLUTIONS, LLC, THE  
BANK OF NEW YORK MELLON CORPORATION,  
BANK OF AMERICA CORPORATION, BANC OF  
AMERICA SECURITIES, LLC, MERRILL LYNCH &  
CO., INC., AND MERRILL LYNCH, PIERCE,  
FENNER & SMITH, INC.,**  
*Defendants,*

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2013-1103

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Appeal from the United States District Court for the Southern District of New York in No. 11-CV-6704, Judge Katherine B. Forrest.

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Decided: January 27, 2014

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DIRK D. THOMAS, McKool Smith, P.C., of Washington, DC, argued for plaintiff-appellant. With him on the brief were JOEL L. THOLLANDER, of Austin, Texas; ROBERT A. COTE, BRETT E. COOPER, DANIEL J. MELMAN, LAURA A. HANDLEY, and LAUREN L. FORNAROTTO, of New York, New York; and J. MICHAEL HENNIGAN and RODERICK G. DORMAN, of Los Angeles, California.

WILLIAM F. LEE, Wilmer Cutler Pickering Hale and Dorr, LLP, of Boston, Massachusetts, argued for all

defendants-appellees. With him on the brief were MARK G. MATUSCHAK, MONICA GREWAL, and KEVIN PRUSSIA, of Boston, Massachusetts; and GREGORY H. LANTIER, of Washington, DC, for defendants-appellees, Credit Suisse Holdings (USA) Inc., et al.; DANIEL A. DEVITO and STACEY L. COHEN, Skadden, Arps, Slate, Meagher & Flom, LLP, of New York, New York, JAMES J. ELACQUA, GARETH DE WALT, and MICHAEL D. SAUNDERS, Skadden, Arps, Slate, Meagher & Flom, LLP, of Palo Alto, California, for defendants-appellees, Morgan Stanley, et al.; ROY W. HARDIN, M. SCOTT FULLER, Locke Lord LLP, of Dallas, Texas, for defendants-appellees, HSBC Bank USA, et al.; JOHN M. DIMATTEO, Willkie Farr & Gallagher LLP, of New York, New York, for defendant-appellee, Bloomberg L.P.; CONSTANCE S. HUTTNER and STEPHANIE L. DONAHUE, Vinson & Elkins, LLP, of New York, New York, DAVID J. TOBIN, of Dallas, Texas, and SYED K. FAREED, of Austin, Texas, for defendant-appellee Thomson Reuters Corp.; BRIAN E. MORAN, Robinson & Cole, LLP, of Stamford Connecticut, for defendant-appellee, FactSet Research Systems Inc. and BENJAMIN W. HATTENBACH and ARKA D. CHATTERJEE, Irell & Manella LLP, of Los Angeles, California, for defendant-appellee Interactive Data Corporation.

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Before LOURIE, MAYER, and WALLACH, *Circuit Judges*.

LOURIE, *Circuit Judge*.

Realtime Data, LLC (“Realtime”) appeals from multiple decisions of the United States District Court for the Southern District of New York, granting motions filed by several companies in the financial services industry (the “Defendants”) for summary judgment of (i) noninfringement of various claims of U.S. Patents 7,417,568 (the “568 patent”), 7,714,747 (the “747 patent”), and 7,777,651 (the “651 patent”), and (ii) invalidity under 35 U.S.C. § 112 of several claims of the ’651 and ’747 patents. *See*

*Realtime Data, LLC v. Morgan Stanley*, No. 11 Civ. 6696, 2012 WL 5835303 (S.D.N.Y. Nov. 15, 2012) (“*Summary Judgment Opinion*”); *Realtime Data, LLC v. Morgan Stanley*, No. 11 Civ. 6696, 2012 WL 2545096 (S.D.N.Y. June 27, 2012) (“*Written Description Opinion*”). Additionally, Realtime appeals from the district court’s construction of certain claim terms and its decision to preclude Realtime from asserting infringement under the doctrine of equivalents. See *Realtime Data, LLC v. Morgan Stanley*, 875 F. Supp. 2d 276 (S.D.N.Y. 2012) (“*Claim Construction Opinion*”); *Realtime Data, LLC v. Morgan Stanley*, No. 11 Civ. 6696, 2012 WL 3158196 (S.D.N.Y. Aug. 2, 2012) (“*DOE Opinion*”).

We conclude that the district court did not err in construing the disputed claim terms of the patents or in granting summary judgment of noninfringement of the appealed claims based on that construction. Additionally, the court did not err in granting summary judgment of invalidity of the appealed claims under § 112 or in precluding Realtime from asserting infringement under the doctrine of equivalents. Accordingly, we affirm.

## BACKGROUND

### I. The ’568, ’651, and ’747 Patents

Realtime owns the ’568, ’651, and ’747 patents, which relate to compressing data for transmission. The patents disclose content-based compression, a process that uses specialized encoders to compress data based on the content of those data. *E.g.* ’747 patent col. 4 ll. 4–20. The data are received by a system in a data stream and processed in blocks. *E.g. id.* col. 8 ll. 1–9. If the compression system analyzes a data block and determines that the block is a specific data block type, *i.e.*, it consists of a specific type of content (such as text or video), then a content specific data encoder will be used to maximize the compression for that block of data, *id.* col. 4 ll. 27–34; otherwise a content-independent encoder will be used, *id.*

col. 4 ll. 21–26. After compression, the system appends a content type descriptor to indicate the encoder that was used to compress the data block. *Id.* col. 8 ll. 52–53. This descriptor is needed to tell the system receiving the data how to decompress it. *Id.* col. 15 ll. 20–31.

'747 patent claim 14 is exemplary and is reproduced below:

14. A method of compressing a plurality of data blocks to create a compressed data packet in a data stream using a data compression processor, wherein multiple encoders applying a plurality of lossless compression techniques are applied to data blocks, the method comprising:

receiving a data block;

analyzing content of the data block to determine a data block type;

selecting one or more lossless encoders based on the data block type and a computer file, wherein the computer file indicates data block types and associated lossless encoders;

compressing the data block with a selected encoder utilizing content dependent data compression, if the data block type is recognized as associated with a lossless encoder utilizing content dependent data compression;

compressing the data block with a selected lossless encoder utilizing content independent data compression, if the data block type is not recognized as associated with a lossless encoder utilizing content dependent data compression;  
and

providing a descriptor for the compressed data packet in the data stream, wherein the descriptor indicates the one or more selected lossless encoders for the encoded data block.

'747 patent col. 27 l. 44–col. 28 l. 10.

The Defendants all utilize systems incorporating a financial industry standard for transferring financial information called FAST. *Summary Judgment Opinion*, 2012 WL 5835303, at \*2. FAST transmits financial data in “messages,” which conform to pre-defined Templates. *Id.* at \*3. Those Templates are not attached to a message. *Id.* FAST systems compress messages using a process known as “field encoding.” The system will analyze each field of a message and determine whether the field is: (1) a copy of the same value in the same field from a previous message; (2) an increment, *i.e.*, the value in that message is one more than the value of the previous message; or (3) the default value of that field in the message Template. *See* CME Br. 15–16. By field encoding, some message fields may be removed, thus reducing the message size. Based on the result of the field encoding, the FAST system will generate a presence map (“PMAP”) that indicates whether a field in a message is present or not. J.A. 1813. After field encoding, transfer encoding is applied to the message to remove redundant information, further reducing the message size. J.A. 1812. The message is then sent with both a Template ID (to tell the receiving system what message Template to use) and the PMAP (to inform the system of the field encoding parameters). *See* Morgan Stanley Br. 22–23.

## II. District Court Proceedings

Realtime initially sued a variety of financial industry companies in the Eastern District of Texas, loosely categorized as stock exchanges, banks, and market data providers, alleging that the Defendants infringed its patents by utilizing systems incorporating FAST. Realtime brought three suits, each against defendants in a similar line of business, alleging infringement of several patents including the '568 patent. J.A. 4918–48. That suit was transferred to the Southern District of New York.

*See DOE Opinion*, 2012 WL 3158196, at \*1. After the suits were transferred, the '651 and '747 patents issued and new actions for each patent were brought against members of each of the three defendant categories, totaling nine cases. Realtime Br. 5. These actions were consolidated with the three original cases for purposes of pretrial proceedings. *See DOE Opinion*, 2012 WL 3158196, at \*1.

The district court construed several disputed claim terms, including: (1) “descriptor indicates” to mean “[r]ecognizable data that is appended to the encoded data for specifying [an encoder]”; (2) “data field/block type” to mean “[c]ategorization of the data in the field (or block) as one of [several types of data], or other data type”; and (3) “data stream” to mean “[o]ne or more blocks transmitted in sequence from an external source . . . .” *Claim Construction Opinion*, 875 F. Supp. 2d at 296. The court analyzed both the written description and the claims in construing the terms “descriptor indicates” and “data field/block type.” *Id.* at 295–96, 290–91. For construction of the term “data stream,” the court relied on statements that Realtime made during reexamination of similar related patents and in another litigation involving related patents. *Id.* at 287–88.

The Defendants moved for summary judgment of invalidity of several claims of the '651 and '747 patents for failure to meet the definiteness and written description requirements of 35 U.S.C. § 112 based on the recitation of “content dependent data decompression” in those claims. The court granted the motion as to nine claims of those patents, holding that the content of the originally compressed file was irrelevant for purposes of decompression. The court found that “[a]ll that matters [after content is compressed] is what encoder was used—not the method of its selection (*i.e.*, not the content on which the encoder selection was based).” *Written Description Opinion*, 2012 WL 2545096, at \*8. In other words, “decompression has

everything to do with the algorithm used at the front-end compression and nothing to do with the content on which the selection of that algorithm was based.” *Id.* Because the term itself could not be construed, the court found claims utilizing that term to be indefinite. *Id.* Additionally, because the written description of the ’651 and ’747 patents did not provide guidance on “what is meant to be captured by content dependent data decompression that is distinct from content independent data decompression,” the court found that claims reciting that limitation failed to satisfy the written description requirement. *Id.*

The court also precluded Realtime from asserting infringement under the doctrine of equivalents due to Realtime’s failure to comply with both: (1) the local rules of the Eastern District of Texas, requiring disclosure to the Defendants “not later than 10 days” prior to the case management conference whether Realtime was alleging infringement under the doctrine of equivalents; and (2) the local rules of the Southern District of New York, requiring a similar disclosure within 14 days after appearing in an action. *DOE Opinion*, 2012 WL 3158196, at \*1, \*4.

The Defendants also moved for summary judgment of noninfringement, which the district court granted, finding that the accused products did not meet the “descriptor indicates,” “data field/block type,” and “data stream” limitations of the remaining asserted patent claims. *Summary Judgment Opinion*, 2012 WL 5835303, at \*19. Specifically, the court found that many of the accused products did not meet the “descriptor indicates” limitation because the Templates utilized in the FAST systems were not “with” or “appended” to the encoded data, nor did the Template ID or PMAP, either alone or together, indicate the encoders that were used to compress the message. *Id.* at \*18–19. The court concluded that the accused products did not meet the “data field/block type” limitation because the values identified by Realtime in the PMAP—copy,



increment, and default—did not specify the type of data being encoded, only how the system should treat certain fields within the message. *Id.* at \*15–16. The court held that the accused products did not meet the “data stream” limitation because none of the products received data for compression from an external source. *Id.* at \*12. Finally, the court concluded that some accused decompression products did not meet an encoding requirement of claims 95, 97, 108, and 112 of the ’651 patent, which required selection of encoders based on analysis of the data blocks during decompression. *Id.* at \*13.

In summary, the court granted summary judgment of noninfringement for all claims asserted in the litigation that were not found invalid under § 112.

Realtime timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

## DISCUSSION

### I. Standard of Review

This appeal comes to us as nine separate appeals presented in one appellate brief and three appellee briefs from the three groups of defendants in related businesses. At oral argument, we heard from appellant’s counsel and three counsel for the appellee groups of defendants.

We review *de novo* the district court’s grant of summary judgment, drawing all reasonable inferences in favor of the nonmovant. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986); *Hologic, Inc. v. SenoRx, Inc.*, 639 F.3d 1329, 1334 (Fed. Cir. 2011). Summary judgment is appropriate when there is “no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). We address claim construction as a matter of law, which we review without deference. *See Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). “Compliance with the written description requirement is a question of fact

but is amenable to summary judgment in cases where no reasonable fact finder could return a verdict for the non-moving party.” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1307 (Fed. Cir. 2008).

## II. Claim Construction

Realtime first argues that the district court erred in its construction of three claim terms: “descriptor indicates,” “data field/block type,” and “data stream.”

### A. “Descriptor indicates”

Realtime argues that the term “descriptor indicates” in claims 15 and 32 of the ’568 patent; claims 1, 7, 8, 13, 14, and 19 of the ’747 patent; and claims 1, 4, 6, 7, 12, 13, 18, 19, 21, 22, 25, 26, 29, 34, 35, 43, 47, 49, 95, 97, 108, and 112 of the ’651 patent, is defined in the written description as “any recognizable data token or descriptor that indicates which data encoding technique has been applied to the data.” *E.g.* ’747 patent col. 8 ll. 53–56. Realtime contends that the court added additional limitations, requiring that the indicator be appended to the encoded data for the purposes of specifying the encoder used, limitations that are not required by the claim language or the written description of the patents. The Defendants respond that, in the patented system, the encoder is selected dynamically after determining the type of data being encoded, and therefore it must be appended to the data message to identify what type of encoding was used.

We agree with the Defendants. Although the written description does define the “data compression type descriptor” as “any recognizable data token or descriptor that indicates which data encoding technique has been applied to the data,” ’747 patent col. 8 ll. 53–56, ’568 patent col. 16 ll. 9–12, the preceding sentence also teaches that “[a]n appropriate data compression type descriptor is appended [to the encoded data block].” ’747 patent col. 8

ll. 52–53; *see also* '568 patent col. 16 ll. 6–9 (stating that the system “appends a corresponding compression type descriptor to each encoded data block . . . so as to indicate the type of compression format”). That requirement is further highlighted by figure 3b of the '747 patent, which shows an “append corresponding descriptor” step after a step requiring selection of an encoded data block with the greatest compression ratio. '747 patent fig. 3b. Additionally, the claims require receiving a data packet and extracting from that packet the descriptors, which were previously selected based on an analysis of the content of the pre-encoded data blocks, highlighting that the descriptors must be sent with the block. *E.g. id.* col. 26 ll. 24–31. The district court thus did not err in construing the “descriptor indicates” term in claims 15 and 32 of the '568 patent; claims 1, 7, 8, 13, 14, and 19 of the '747 patent; and claims 1, 4, 6, 7, 12, 13, 18, 19, 21, 22, 25, 26, 29, 34, 35, 43, 47, 49, 95, 97, 108, and 112 of the '651 patent, to mean “[r]ecognizable data that is appended to the encoded data for specifying [an encoder].”

#### B. “Data field/block type”

Realtime argues that the “data field/block type” limitation in claims 15, 20, 22, and 32 of the '568 patent; claims 1, 7, 8, 13, 14, and 19 of the '747 patent; and claims 1, 4, 6, 7, 12, 13, 18, 19, 21, 22, 25, 26, 29, 34, 35, 43, 47, 49, 95, 97, 108, and 112 of the '651 patent, should be construed as any characteristic, attribute, or parameter of the data field or block that is used to select an appropriate encoder. Realtime contends that the district court narrowed the claim limitation to specific data types, and that such narrowing is specifically discouraged in the written description of the '747 patent. The Defendants respond that the written description and the claim language support the construction of “data field/block type” as being one of several different types of data and that the examples included in the construction of the term are only exemplary and do not narrow the limitation.

We also agree with the Defendants on this claim limitation. As the district court recognized, the construction urged by Realtime could encompass “any characteristic or any attribute of data.” *Claim Construction Opinion*, 875 F. Supp. 2d at 290. The claims of the patents consistently use the terms “data field type” and “data block type” to refer to the content of the data. *E.g.* ’568 patent col. 23 ll. 38–41 (requiring the claim to recognize a data field type and select an encoder based on that recognized data field type); *id.* col. 24 ll. 56–59 (disclosing that the method recognizes data field types within a data stream and selects encoders based on those recognized data field types); ’747 patent col. 27 ll. 50–51 (requiring method to analyze the content of a data block in order to determine a data block type). Although the written description of the ’747 patent does discuss, as a limitation of the prior art, requiring a data field to be categorized into certain data types, that prior art reference limited the data field to a small subset of possible data types. The district court, however, did not unnecessarily limit the types of data for the data field/block type by including the open-ended “other data type” in the construction of the term.

The district court was correct in concluding that, based on the specifications of the patents, the “data field/block type” term in claims 15, 20, 22, and 32 of the ’568 patent; claims 1, 7, 8, 13, 14, and 19 of the ’747 patent; and claims 1, 4, 6, 7, 12, 13, 18, 19, 21, 22, 25, 26, 29, 34, 35, 43, 47, 49, 95, 97, 108, and 112 of the ’651 patent, must be tied to some analysis of the content of the data field or block and cannot simply encompass *any* characteristic or attribute of data. The court thus did not err in construing the term to mean “[c]ategorization of the data in the field (or block) as one of ASCII, image data, multimedia data, signed and unsigned integers, pointers, or other data type.”

### C. “Data stream”

Realtime next argues that the term “data stream” in claims 15, 20, 22, and 32 of the ’568 patent; claims 1, 7, 8, 13, 14, and 19 of the ’747 patent; and claims 1, 4, 6, 7, 12, 13, 18, 19, 21, 22, 25, 26, 29, 34, 35, 43, 47, 49, 95, 97, 108, and 112 of the ’651 patent, should be construed, consistent with the written description, as “one or more data blocks transmitted in sequence.” Realtime contends that the court improperly added the limitation, “from an external source whose characteristics are not controlled by the data encoder or decoder,” which is not inherent in the ordinary meaning of “data stream.” Realtime asserts that the court added this limitation based on declarations made in reexamination of a non-asserted patent, which focused on the limitation “receiving” a data stream—a position that was rejected by the United States Patent and Trademark Office (“PTO”).

The Defendants respond that the sworn statements in the related patent reexamination unequivocally show that a person of ordinary skill in the art would understand that the data stream limitation in the patents at issue here requires an external source. The Defendants acknowledge that the declarations were submitted during reexamination of Realtime’s U.S. Patent 7,161,506 (the “506 patent”), but assert that the ’506 patent shares the same specification as the ’747 patent and is incorporated by reference in the ’568 and ’651 patents.

Courts look to both intrinsic and extrinsic evidence in construing claim terms, focusing first on the intrinsic record. *Nazomi Comm., Inc. v. Arm Holdings, PLC*, 403 F.3d 1364, 1368 (Fed. Cir. 2005). Intrinsic evidence includes the claims and the written description. However, additional statements made by the patentee during prosecution can prove useful in determining how the patentee understood and explained the invention to the PTO. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed.

Cir. 2005) (en banc). Statements made during reexamination can prove useful in determining the meaning of the claims. See *01 Communique Lab., Inc. v. LogMeIn, Inc.*, 687 F.3d 1292, 1298 (Fed. Cir. 2012) (considering statements made during reexamination as intrinsic evidence for purposes of claim construction). In connection with patents that are part of an extended family of patents, a patentee’s disclaimers made during prosecution are “relevant” both as a statement made with regard to the patent at issue and with regard to related or “sibling” patents. See *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1349–50 (Fed. Cir. 2004).

The written description of the ’747 patent describes a “data stream comprising one or more data blocks[] input into the data compression system . . . .” ’747 patent col. 8 ll. 3–5. However, the declarations made by Realtime’s expert, Dr. Modestino, during reexamination of the ’506 patent also dealt with the meaning of “data stream.” The ’506 patent shares the same written description as the ’747 patent. *Claim Construction Opinion*, 875 F. Supp. 2d at 287. Dr. Modestino declared that “data stream” meant “a continuous stream of data blocks.” J.A. 970. Dr. Modestino then stated that the “’506 specification makes it clear to one of ordinary skill in the art that the use of the term ‘data stream’ was intended by the inventor to convey a continuous stream of data elements received from or transmitted.” *Id.* While discussing the term “receiving a data stream,” Dr. Modestino stated that one of ordinary skill would “imply a stream of data transmitted from a source (whose characteristics are therefore not controlled by the data compression system) and received at the input of a system or device.” *Id.* at 971. Dr. Modestino described the process of “receiving a data stream” from an external source as a “passive one requiring no control over the characteristics of the received data stream by the receiver” and that the written description of the ’506 patent “would lead one of ordinary skill in the art

to conclude that the inventor teaches a *passive process* of receiving the data stream without initiation by the receiver . . . or any participation in controlling that stream.” *Id.* (emphasis added).

Dr. Modestino concluded that “[i]t should be understood that the passive process of receiving a data stream [from an external source] as practiced in the ’506 patent is quite different from the active process of retrieving, or fetching, a block of data from a storage device *internal to a computer system* using standard storage device access techniques,” *id.* (emphasis added), and that “one of ordinary skill in the art would distinguish this active process of retrieving a data block from an internal storage device as *fundamentally different* from the passive process of receiving a data stream as recited in independent claims 1, 69 and 86 of the ’506 patent,” *id.* at 972 (emphasis added).

Although Dr. Modestino’s declaration dealt, in part, with a narrower term “receiving a data stream,” the declaration makes clear that a person of ordinary skill would understand that a data stream as disclosed in the written description of the ’747 patent means a data stream received from an external source. Given this distinction advanced by Realtime’s own expert in the reexamination, the district court did not err by including the external source requirement in the construction of “data stream” in claims 15, 20, 22, and 32 of the ’568 patent; claims 1, 7, 8, 13, 14, and 19 of the ’747 patent; and claims 1, 4, 6, 7, 12, 13, 18, 19, 21, 22, 25, 26, 29, 34, 35, 43, 47, 49, 95, 97, 108, and 112 of the ’651 patent.

### III. Infringement

Realtime argues that the district court erred in granting summary judgment of noninfringement of claims 15, 20, 22, and 32 of the ’568 patent; claims 14 and 19 of the ’747 patent; and claims 13, 18, 19, 21, 22, 25, 26, 29, 34, 35, 43, 47, 49, 95, 97, 108, and 112 of the ’651 patent, by

the accused systems because aspects of the Defendants' FAST systems meet the "descriptor indicates," "data field/block type," and "data stream" limitations as construed by the court. Realtime also contends that the district court erred by granting summary judgment of noninfringement based on the court's requirement that certain decoding methods in the '651 patent require the selection of both an encoder and a decoder.

Realtime first argues that the Defendants' accused FAST systems meet the "descriptor indicates" limitation by appending both a PMAP and Template ID to the message for purposes of specifying the encoders used to encode that message. However, the FAST system PMAP and Template IDs do not indicate which encoders have been utilized to encode; the Template itself contains that information. *Summary Judgment Opinion*, 2012 WL 5835303, at \*8. The Template is not sent with the message; a set of Templates are known in advance to the FAST systems. *Id.* at \*8. The Template is thus not "appended to the encoded data for specifying" an encoder, and the accused systems cannot infringe the claims of the patents requiring this.

Realtime further argues that the encoding techniques in the PMAP, which determine whether certain fields of the message are a copy, increment, or default value, meets the data field/block type limitation. Realtime asserts that by categorizing each data field as one of these three possible types, the encoding techniques in the PMAP act as content categorization as construed by the district court. However, those values do not relate to the content of the message, only to whether certain values in the message can be skipped, incremented, or set to their default value. *Summary Judgment Opinion*, 2012 WL 5835303, at \*15. This process does not analyze the content of the data block for categorization as one of several different data types, as required by the "data field/block type" claim construction, but simply looks to see whether



certain fields in the Template can be encoded to minimize the size of the message. *Id.* at \*15. The accused systems thus cannot infringe the claims requiring a “data field/block type” limitation.

Realtime next argues that the accused products submit one or more data blocks from an external source, such as a market server, to the data encoder. The Defendants respond that the evidence at trial showed that the encoding is performed only on data from other components within the accused system and not from an external source. The Defendants’ argument is supported by the evidence before the district court, which described it as “one sided” in showing that the accused products received data from internal sources, *id.* at \*11, and the district court thus did not err in concluding that the accused systems did not meet the “data stream” limitation.

Additionally, Realtime argues that the district court erred by concluding that claims 95, 97, 108, and 112 of the ’651 patent require the selection of both an encoder and a decoder in those “method for decoding” claims. Realtime asserts that although the ’651 patent teaches both encoding and decoding systems, the claims do not require one system to perform both functions. The Defendants respond that Realtime stipulated to a construction that requires selection of an encoder based on an analysis of the data blocks at trial and that they cannot now change that construction on appeal.

We agree with the Defendants. The decoding claims disclose the limitation “wherein the lossless encoders are selected based on analysis of content of the data blocks” ’651 patent col. 31 ll. 36–37, col. 33 ll. 10–11. The parties stipulated that this limitation means that “the system (or method) selects the lossless encoders based on an analysis of content of the data blocks (or data fields).” J.A. 5341, 5334. According to the stipulated claim construction, these decoding claims thus require the selection of an

encoder. Realtime cannot now change the construction that it had agreed to in the district court. *Versata Software, Inc. v. SAP Am. Inc.*, 717 F.3d 1255, 1262 (Fed. Cir. 2013). The district court thus did not err in granting the Defendants' motion for summary judgment of noninfringement of claims 95, 97, 108, and 112 of the '651 patent.

In conclusion, we agree with the Defendants in all respects concerning the district court's holding of noninfringement. The district court thus did not err in granting summary judgment of noninfringement of claims 15, 20, 22, and 32 of the '568 patent; claims 14 and 19 of the '747 patent; and claims 13, 18, 19, 21, 22, 25, 26, 29, 34, 35, 43, 47, 49, 95, 97, 108, and 112 of the '651 patent.

#### IV. Validity

Realtime next contends that the district court erred in concluding that claims 1, 7, 8, and 13 of the '747 patent and claims 1, 4, 6, 7, and 12 of the '651 patent were invalid under 35 U.S.C. § 112, ¶ 1.<sup>1</sup> To support its position, Realtime asserts that content-dependent decompression means that the decoders simply correspond to those used for content-dependent compression, *i.e.*, content-dependent decompression decompresses data encoded with a content-dependent compressor.

The Defendants respond that the written description describes decompression as checking the descriptor to determine whether it is “null,” meaning the data were not compressed, or “not null,” meaning that the descriptor

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<sup>1</sup> Paragraph 1 of 35 U.S.C. § 112 was replaced with newly designated § 112(a) when § 4(c) of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, took effect on September 16, 2012. Because this case was filed before that date, we will refer to the pre-AIA version of § 112.

corresponds to a decoder. The Defendants contend that the limitation lacks written description support under § 112, ¶ 1 because there is no mention of content-based or content-dependent decompression in the written description of the '651 and '747 patents.

We agree with the Defendants that the '651 and '747 patents lack adequate written description of the “content dependent data decompression” limitation. The written description is a statutory requirement set forth in 35 U.S.C. § 112. The written description “must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation and quotations omitted). The test is whether the disclosure “conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Id.*

As the district court found, the written descriptions of the '651 and '747 patents do not contain any definition of “content dependent data decompression.” *Written Description Opinion*, 2012 WL 2545096, at \*8. The written description describes the process of data decompression as determining “whether the data compression type descriptor is null” (meaning that the content is not compressed), or not null meaning that “the corresponding decoder or decoders” matching the compression type descriptor used to encode the data are selected to decode the data block. '747 patent col. 15 ll. 11–25; '651 patent col. 17 ll. 10–28 (describing the process of extracting the data compression type descriptor to determine the decoders to use). The written descriptions of the '651 and '747 patents do not disclose decompression whereby an analysis of the content of an encoded block is used to determine the decoders for purposes of decompression. Further, in both the '747 and '651 patents, the term “content dependent data decompression” only appears in the claims themselves, which contain limited language and no de-

scriptive content and hence fail to show that Realtime invented or had possession of content-based or content-dependent data decompression. In briefing and oral argument, Realtime has further failed to point to any definition of “content dependent data decompression” in the written description.

Thus, the district court did not err in concluding that claims 1, 7, 8, and 13 of the ’747 patent and claims 1, 4, 6, 7, and 12 of the ’651 patent were invalid for lack of written description under 35 U.S.C. § 112, ¶ 1. As all the asserted claims have been found on review to be either not infringed or invalid for lack of adequate written description, we do not need to review the district court’s holding of invalidity for indefiniteness.

#### V. Infringement Under the Doctrine of Equivalents

Realtime finally argues that the district court abused its discretion in precluding Realtime from arguing infringement under the doctrine of equivalents, applying its local rules in doing so. We affirm the district court in its decision concerning the doctrine of equivalents. As a general matter, we “defer[] to the district court when interpreting and enforcing local rules so as not to frustrate local attempts to manage patent cases according to prescribed guidelines.” *Genentech, Inc. v. Amgen, Inc.*, 289 F.3d 761, 774 (Fed. Cir. 2002). Particularly in reviewing the district court’s exercise of discretion, we determine whether: “(1) the decision was clearly unreasonable, arbitrary, or fanciful; (2) the decision was based on an erroneous conclusion of law; (3) the court’s findings were clearly erroneous; or (4) the record contains no evidence upon which the court rationally could have based its decision.” *In re Cambridge Biotech Corp.*, 186 F.3d 1356, 1369 (Fed. Cir. 1999).

Realtime argues that the Defendants would not be prejudiced by Realtime’s assertion of infringement under the doctrine of equivalents. The Defendants respond that

they would suffer prejudice because the assertions of infringement under the doctrine of equivalents were made over two years after the case was originally filed and after fact discovery had closed.

We agree with the Defendants on this point. The district court was well within its discretion to preclude Realtime from asserting infringement under the doctrine of equivalents. In asserting its allegations of infringement under the doctrine of equivalents two and a half years into the litigation, Realtime failed to comply with the local rules of both the Eastern District of Texas and the Southern District of New York, which require complete infringement assertions within 10 and 14 days, respectively. Additionally, because Realtime asserted such contentions after fact discovery had closed, the Defendants were prejudiced from developing adequate discovery and developing theories of noninfringement under the doctrine of equivalents. The district court thus did not abuse its discretion by precluding Realtime from asserting infringement allegations under the doctrine of equivalents.

#### CONCLUSION

For the foregoing reasons, the various decisions of the district court concerning noninfringement and invalidity, as well as on the doctrine of equivalents, are

**AFFIRMED**