

**IPR2018-01331 ('610 patent)**  
**IPR2018-01334 ('535 patent)**

Sling, Dish, et al., Petitioner

v.

Realtime Adaptive Streaming LLC,  
Patent Owner

## **Patent Owner's Demonstratives**

Served November 29, 2019  
Presented December 4, 2019

# Claim Construction

## “access profile”

### Realtime’s Proposal

“information that enables the controller to select a suitable compression algorithm that provides a desired balance between execution speed (rate of compression) and efficiency (compression ratio)”

### Sling’s Proposal

“information that enables a controller to determine a compression routine that is *associated with a data type* of the data to be compressed”

## Realtime's Proposal Comes Verbatim from Specification

- Realtime's proposal comes directly from the patent's description of what "access profiles" *are*

In another aspect, a system for providing bandwidth sensitive data compression comprises a plurality of access profiles, operatively accessible by the controller that enables the controller to determine a compression routine that is associated with a data type of the data to be compressed. The access profiles comprise information that enables the controller to select a suitable compression algorithm that provides a desired balance between execution speed (rate of compression) and efficiency (compression ratio).

-'535 patent at 8:4-12



## Realtime's Proposal Is Consistent With Intrinsic Evidence

- Realtime's proposal is consistent with every example and embodiment in the patent
- Access profiles enable selection of suitable compression algorithms to provide balance between speed and efficiency

Compression Algorithms	
Algorithm 1	asymmetrical with slow compress and fast decompress
Algorithm 2	asymmetrical with fast compress and slow decompress
Algorithm 3	symmetrical

## Sling's Proposal Is Incorrect

- Sling's proposal is unsupported by the intrinsic or extrinsic evidence, which never defines an "access profile" in terms of data type

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### Access Profile 1:

Data is written to a storage medium once (or very few times) but is read from the storage medium many times

### Access Profile 2

Data is written to the storage medium often but read few Times

### Access Profile 3

The amount of times data is read from and written to the storage medium is substantially the same.

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-'535 patent at col. 11

## Sling's Proposal Is Incorrect

- Sling's proposal imports limitations from an embodiment discussing "data profiles"

In a preferred embodiment, the data profiles 15 comprise information regarding predetermined access profiles of different data sets, which enables the controller 11 to select a suitable compression algorithm based on the data type. For instance, the data profiles may comprise a map that associates different data types (based on, e.g., a file extension) with preferred one(s) of the compression algorithms 13.

- '535 patent at 11:31-38

## Sling's Proposal Is Incorrect

- Patent gives an example of “three data access profiles” that adds a column for data types

Access Profile	Example Data Types	Compression Algorithm
1. Write few, Read many	Operating systems, Programs, Web sites	Asymmetrical (Slow compress)
2. Write many, Read few	Automatically updated inventory database	Asymmetrical (Fast compress)
3. Similar number of Reads and Writes	User generated documents	Symmetrical

'535 patent at col. 12

## “asymmetrical” compression

- Patent provides express definition of “asymmetrical” data compression algorithm:

In the following description of preferred embodiments, two categories of compression algorithms are defined—an “asymmetrical” data compression algorithm and a “symmetrical data compression algorithms. An asymmetrical data compression algorithm is referred to herein as one in which the execution time for the compression and decompression routines differ significantly. In particular, with an asymmetri-

-’535 patent at 9:63-67

## “asymmetrical” compression

- Sling’s expert agreed patent provides “express definition” of asymmetrical compression

### Sling’s Expert Dr. Bovik

terms of run-time. **The patent defined** an asymmetrical compression algorithm as “one in which the execution time for the compression and decompression routines differ significantly.” ’535 Pat. at 9:63-66. **I agree** with the positions recently taken by Dr. Zeger and Realtime in this litigation **that the patents provide an express definition of this term.**

-Ex. 2012 (Bovik Decl.) ¶ 32



# **New Arguments & Theories Forbidden in Reply**

# New Theories Forbidden in Reply



Thus, although “the introduction of new evidence in the course of the trial is to be expected in *inter partes* review trial proceedings,” ***the shifting of arguments is not***, Petitioner’s inherency argument . . . is an ***impermissible shift of its anticipation theory*** because “[r]ather than explaining how its original petition was correct,” . . . Petitioner’s “subsequent arguments amount to an ***entirely new theory of anticipation absent from the petition.***”

*-Pfizer v. Chugai Pharm.*, IPR2017-01357, Paper 56 at 19 (PTAB Nov. 28, 2018) (FWD) (internal citations omitted)



# Petitioners Must Make Their Case in Petition



Unlike district court litigation . . . the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute. While the Board's requirements are strict ones, they are requirements of which petitioners are aware when they seek to institute an IPR.

*-Intelligent Bio-Sys. v. Illumina Cambridge, 821 F.3d 1359, 1369 (Fed. Cir. 2016).*

# Petitioner Cannot “Gap-Fill” in Reply



The explanations in the Reply, therefore, are not responsive to Patent Owner’s arguments that the limitation is not disclosed. Rather they are a ***new mapping*** of the claims to the prior art ***in light of the gaps*** that Patent Owner pointed out in its Response.

- *Arista Networks, Inc. v. Cisco Sys. Inc.*, IPR2016-00308, Paper 42, at 14 (May 24, 2017)

## Arguments That “Could Have Been Made” in Petition



The declaration raises a new obviousness argument for this limitation that ***could have been made*** in the petition . . . which proposed that [reference] rendered obvious a number of *other* claim limitations. [Petitioner] had an opportunity to present this argument in its petition, but ***chose not to***.

- *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 775 (Fed. Cir. 2018)

## Sling Waived Argument for “Asymmetrical” Compression

Sling waived any argument under Realtime’s correct construction for “asymmetrical” compression

- Realtime’s construction comes from express definition the patent itself
- Sling’s Petition cites three earlier IPRs where petitioners proposed same construction (IPR2018-01169, IPR2018-01170, and IPR2018-00833)
- Sling’s own expert said it was express definition months before Realtime’s proposal in this IPR

## Sling Waived Argument for “Access Profile”

Sling waived argument under Realtime’s or Board’s construction in Netflix IPR for “access profile”

- Realtime’s construction comes from patent itself
- Sling’s Petition cites Netflix’s earlier-filed petition that proposed the construction
- The Board denied Sling’s request to supplement Petition for “access profile” under Netflix construction

## Sling Cannot Re-write Obviousness Theories

- The Petition Ground 2 obviousness theory is limited to “asymmetric” compression; but in reply, it expands Ground 2 beyond all recognition.

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# Anticipation



# Law of Anticipation




The jury instruction states: “Rather, for anticipation, *it is sufficient* if the single reference would have informed those skilled in the art that all of the claimed elements *could have* been arranged as in the claimed invention.” We agree with Abbott, therefore, that when read in its entirety, ***the instruction is incorrect*** because it makes sufficient, for purposes of anticipation, a prior art disclosure of individual claim elements that ***“could have been arranged” in a way that is not itself described or depicted in the anticipatory reference.***

*-Therasense, Inc. v. Becton, Dickinson and Co., 593 F.3d 1325, 1332 (Fed. Cir. 2010)*




# Law of Anticipation



The way in which the elements are arranged or combined in the claim ***must itself be disclosed, either expressly or inherently***, in an anticipatory reference . . . . The requirement that the prior art elements themselves be “arranged as in the claim” means that claims cannot be “treated . . . as mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning.”

*-Therasense, Inc. v. Becton, Dickinson and Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010)

# Law of Anticipation



Unless a reference discloses within the four corners of the document not only all of the limitations claimed but also ***all of the limitations arranged or combined in the same way as recited in the claim***, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.

-*Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008)

-*Therasense, Inc. v. Becton, Dickinson and Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010)

# The Petition Ignores Embodiments

- Sling and its expert, Dr. Acton, fail to analyze or even discuss a reference's embodiments in the Petition.
  - The word “embodiment” does not appear in the Petition's claim analysis
- Dr. Acton declined to answer questions about embodiments, including how many embodiments are disclosed or whether he analyzed that question

# The Petition Fails to Prove Anticipation

- The Petition fails to show reference discloses “all of the limitations arranged or combined in the same way as recited in the claim . . . ***to prove prior invention of the thing claimed***” (*NetMoney, Therasense*)
- Petition also fails to show that a POSITA, reading reference would “at once envisage” the claimed arrangement or combination.
- The Petition fails to make a *prima facie* showing of anticipation and cannot cure this inreply.

**“data block”**

# “Data Block” Must Be *A Single Unit of Data*

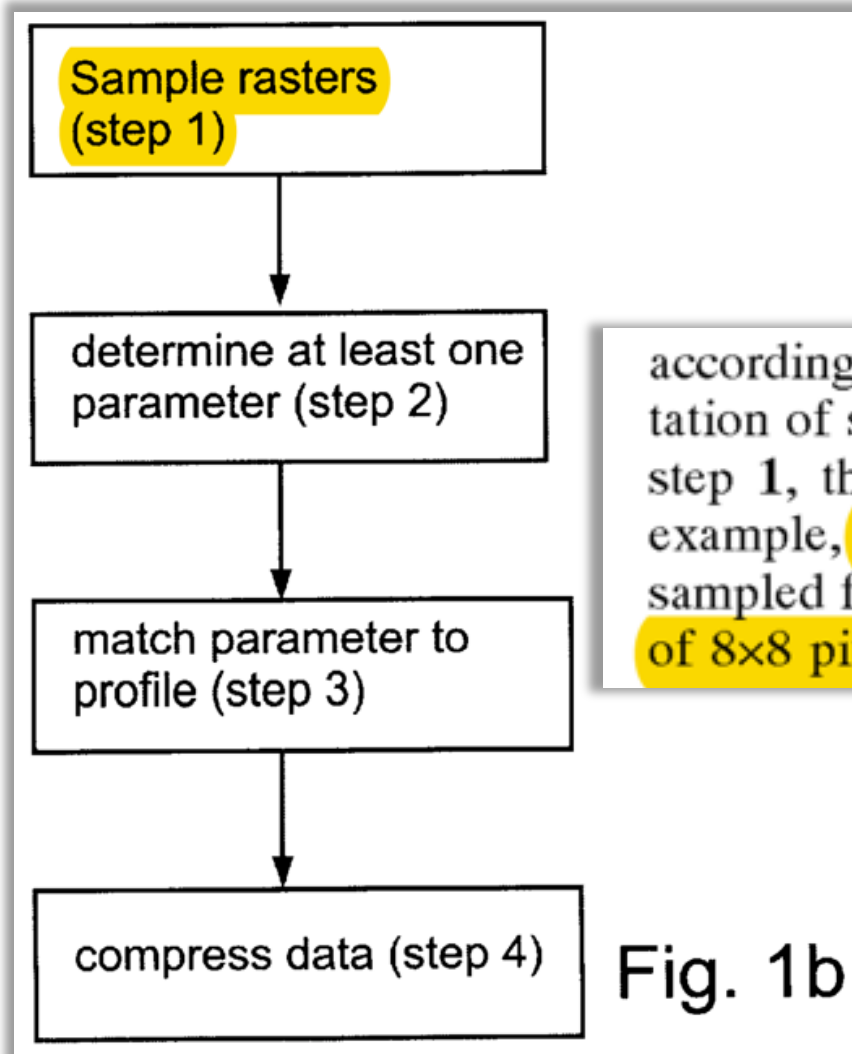
- Parties agreed to this construction:

## A. “data block”

Petitioner asks the Board to construe “data block” as “a single unit of data, which may range in size from individual bits through complete files or collection of multiple files.” Pet. at 16–17. For purposes of this IPR, Patent Owner agrees with this construction. *See Zeger Decl.* ¶ 48.

-POR at 9

# Dvir's "Sample" Comprises "Groups of Rasters"



according to the type of video data. A preferred implementation of such an automatic method is given in FIG. 1B. In step 1, the video data to be transmitted is analyzed. For example, groups of rasters of the video data are optionally sampled for analysis. Preferably, each such group is a block of 8x8 pixels.

-Dvir at 5:31-36, Fig. 1b

# “Groups of Rasters” Is Not a Data Block

## Realtime’s Expert Dr. Zeger

are ‘sampled for analysis.’ Acton Decl. ¶ 90. Thus, Dr. Acton acknowledges that “groups of rasters” are formed from various parts of the input data, such as the beginning, middle, and end. This is also supported by Dvir’s statement that the data is “sampled for analysis.” A POSITA would understand that “sampling” means that the entire input data is not analyzed. Rather, only a “sample” or (likely relatively small) portions of the input data are analyzed.

-Zeger Decl. ¶ 107



# “Groups of Rasters” Is Not a Data Block

## Realtime’s Expert Dr. Zeger

given size, such as 8x8 blocks of pixels” is thus not accurate, because Dvir’s “groups of rasters” (called a “sample” by Dr. Acton) consist of two or more 8x8 blocks of pixels, which are generally not a single unit in any sense. In fact, such 8x8 blocks in Dvir could be from very distant locations as each other and have no common characteristics or functionality. Two 8x8 blocks might not even be in the same frame of video. Dvir says nothing about two or more 8x8 blocks in “groups of rasters” as

having anything to do with each other or acting in any way like a unit. Dr. Acton

-Zeger Decl. ¶ 106

# Dvir Does Not Anticipate “Data Block”

Sling’s argument is a non-sequitur.:

- Sling argues that other things, a “DVD movie,” “frame,” or “adjacent frames” could be a data block
- But other things are meaningfully different from “groups of rasters” and might be considered a single unit in ways that groups of rasters cannot.
- But “groups of rasters” is not itself a data block

# Sling's Dvir Anticipation Theory Fails

- “determining a parameter or attribute of at least a portion of the data block”
  - Sling’s argument is inconsistent with argument for “data block”
  - Any identified “parameter or attribute” is ***not*** that of a single 8x8 block.
- Sling’s new theory that Dvir renders “data block” obvious is entirely absent from the Petition

**“access profile”**

# “Access Profile” Under Realtime’s Construction

- Dvir does not disclose “access profiles” under Realtime’s construction, which requires selecting a compression algorithm based on balancing compression speed and efficiency
- Dvir’s disclosures are about selecting algorithm based on “data type” under Sling’s construction
- Dvir’s selection is based on data type *compatibility* and does not satisfy Realtime’s construction

## “Access Profile” Under Netflix’s Construction

- In IPR2018-01169, Board preliminarily construed “access profile” as “information regarding the number or frequency of reads or writes”
- Sling concedes that Dvir does not disclose “access profile” under this construction.
- Any theory that “access profiles” would be obvious is not within the scope of any grounds of this IPR

**“asymmetric” compression**

## Sling Waived Argument on “Asymmetric” Compression

- The Petition was based on a knowingly incorrect construction of “asymmetric” compression that omits “significantly” or “execution time”
- Sling should not be rewarded for that strategic and unreasonable position.
- Sling should not be allowed to make new arguments it could and should have included in the Petition.
- Dvir does not render asymmetric compression obvious



## **IPR2018-01331 ('610 patent)**

**claims 6 & 16: “wherein each compression algorithm from among the plurality of compression algorithms is asymmetric”**

# Vishwanath Discloses Many Symmetrical Algorithms

A number of compression algorithms are applicable to this invention. They include Lempel-Ziv (LZ), Run Length Encoding (RLE), JPEG, Hierarchical Vector Quantization (HVQ), ADPCM, MPEG1, MPEG2, H.263 and Hierarchical Vector Quantization with Conditional Replenishment (HVQCR).

-Vishwanath at 6:62-67

- Sling's expert, Dr. Acton testified that the majority of the disclosed algorithms (five) are symmetrical

# Vishwanath Teaches Against Claims 6 & 16

- Vishwanath teaches the use of symmetrical algorithms for audio and video data

Input Type $\leftrightarrow$ Compute Power $\downarrow$	Text	Graphics	Natural Image	Audio	Video
Low	RLE	RLE	HVQ	ADPCM	HVQCR
Medium	LZ	LZ	JPEG	MPEG1-Audio	MPEG1
High	LZ	LZ	JPEG	MPEG2-Audio	MPEG2/H.263

-Vishwanath at Fig. 7

## Claims 6 & 16 Are Not Obvious

- Sling fails to show why a POSITA would modify Vishwanath to exclude symmetrical algorithms
- Vishwanath teaches that symmetrical algorithms are beneficial for compressing various data types, including video data.
- Sling's expert agreed that a symmetrical algorithm would be beneficial to use for video data.

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