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United States District Court, C.D. California.

TERADYNE, INC.

v.

ASTRONICS TEST SYSTEMS, INC., et al.

Case No. CV 20-2713-GW-SHKx
|
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PROCEEDINGS: IN CHAMBERS - FINAL RULING ON TERADYNE, INC.'S MOTION FOR PARTIAL SUMMARY JUDGMENT OF OWNERSHIP OF VALID COPYRIGHTS [214]; ASTRONICS' MOTION FOR SUMMARY JUDGMENT ON COPYRIGHT INFRINGEMENT AND LIMITATION ON DAMAGES [218]; DEFENDANT'S MOTION FOR SUMMARY JUDGMENT ON ASTRONICS TEST SYSTEM'S FAIR USE DEFENSE [223]; and

TERADYNE, INC.'S MOTION FOR PARTIAL SUMMARY JUDGMENT ON COPYING [237]

GEORGE H. WU, UNITED STATES DISTRICT JUDGE

*1 Attached hereto is the Court's Final Ruling on the above-entitled Motions. Defendant's Motion for Summary Judgment on Astronics Test System's Fair Use Defense [223] is GRANTED. The remaining three Motions are deemed MOOT.

Defendant is to lodge a proposed judgment on Motion One/ the fair use defense. The parties are to file a joint report regarding future proceedings in this case by December 13, 2023. The Court sets a status conference for December 18, 2023 at 8:30 a.m.

Final Ruling on: (1) Defendant Astronics Test Systems, Inc.'s Motion for Summary Judgment on Astronics Test System's Fair Use Defense; (2) Defendant Astronics Test Systems, Inc.'s Motion for Summary Judgment on Copyright Infringement and Limitation on Damages; (3) Plaintiff Teradyne, Inc.'s Motion for Partial Summary Judgment of Ownership of Valid Copyrights; and (4) Plaintiff Teradyne, Inc.'s Motion for Partial Summary Judgment on Copying

A. Background

Teradyne, Inc. ("Teradyne") filed this lawsuit against Astronics Test Systems, Inc. ("Astronics") on March 23, 2020. The operative complaint in this case, the Second Amended Complaint ("SAC") filed August 30, 2022, contains a single copyright infringement claim (along with two other non-copyright claims). *See* Docket No. 140. That single copyright infringement claim covers what the SAC defines as the "Teradyne Works," a short-hand reference to 16 separate works that Teradyne asserts are covered by registered copyrights. *See* SAC ¶¶ 15-16, 22-27, 35.

Now before the Court are four summary judgment or partial summary judgment motions, two filed by each side: 1) Astronics' motion seeking summary judgment on a fair use defense ("Motion One"); 2) Astronics' motion seeking summary judgment on the questions of infringement and certain issues related to damages; 3) Teradyne's motion seeking partial summary judgment on the issue of the validity of the copyrights in question; and 4) Teradyne's motion seeking partial summary judgment on the issue of whether copying has occurred. As will be made clear below, the

Court's initial assessment of Motion One indicates at least a decent likelihood that the Court will grant that motion. The Court cannot presently see a reason why, if it reaches that result in the end, there would be any need to address or resolve any of the other three motions first, or at all. As such, the analysis below is, for present purposes, limited to Motion One.

Before proceeding to the analysis, however, the Court has carefully reviewed the Local Rule 56-1, 56-2, and 56-3 statements submitted with the four motions. [1] It has attempted to build an understandable and accurate factual background section that takes into account all of the undisputed facts submitted with all four motions, not just facts that it finds meaningful or influential in a fair use assessment. [2] This serves the purpose of not only trying to establish a complete contextual setting for the overall dispute, but also gives the parties – considering the issue mentioned *supra*, Footnote 1 – an opportunity to point out to the Court where it has gotten any fact wrong or perhaps mis-contextualized that fact. If any such errors do *not* bear upon a fact relevant to fair use, the Court would give the parties an opportunity subsequent to any decision to deny Motion One to inform the Court about any such errors/mis-contextualizations. For errors relevant to fair use, however, the parties will need to ensure they address those at oral argument on the motion.

[1]   The Court and its staff are not computer scientists/programmers. It has been challenge enough for it to understand, and to meaningfully assess, the evidence in this case. The thought of a jury consisting of laypersons having to do so should give all involved some considerable measure of concern. Though the Court has not put any detailed thought towards the issue, the question of whether there could be any role for a special master in an action such as this – should the case proceed beyond this point – may be worth some consideration.

[2]   Typically, where there are cross-motions for summary judgment, a court must consider the evidence submitted in support of both motions before ruling on either motion. *See Fair Housing Council of Riverside Cty., Inc. v. Riverside Two*, 249 F.3d 1132, 1136 (9th Cir. 2001). Here, the four

motions each seek summary judgment or partial summary judgment on particular issues, so they are not your prototypical "cross-motions for summary judgment." Nevertheless, the Court is not aware of any binding authority that would prohibit it from collectively considering the facts presented on the four motions. If the parties are aware of any, they should direct the Court to it at oral argument.

B. Summary Judgment Standards

*2 Summary judgment is proper when "the movant shows that 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); *see also Miranda v. City of Cornelius*, 429 F.3d 858, 860 n.1 (9th Cir. 2005). To satisfy its burden at summary judgment, a moving party without the burden of persuasion "must either produce evidence negating an essential element of the nonmoving party's claim or defense or show that the nonmoving party does not have enough evidence of an essential element to carry its ultimate burden of persuasion at trial." *Nissan Fire & Marine Ins. Co., Ltd. v. Fritz Cos., Inc.*, 210 F.3d 1099, 1102 (9th Cir. 2000) (emphasis added); *see also Devereaux v. Abbey*, 263 F.3d 1070, 1076 (9th Cir. 2001) (*en banc*) ("When the nonmoving party has the burden of proof at trial, the moving party need only point out 'that there is an absence of evidence to support the nonmoving party's case.' ") (quoting *Celotex Corp. v. Catrett*, 477 U.S. 317, 325, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986), and citing *Fairbank v. Wunderman Cato Johnson*, 212 F.3d 528, 532 (9th Cir. 2000)); *Fairbank*, 212 F.3d at 532 (holding that the *Celotex* "showing" can be made by "pointing out through argument...the absence of evidence to support plaintiff's claim").

In contrast, to satisfy its burden at summary judgment, a moving party *who also bears the burden of persuasion* on the issue in question "must show that the evidence is so powerful that no reasonable jury would be free to disbelieve it." *Shakur v. Schriro*, 514 F.3d 878, 890 (9th Cir. 2008) (omitting internal quotation marks). In other words, it "must establish beyond controversy every essential element" of its claim." *S. Cal. Gas Co. v. City of Santa Ana*, 336 F.3d 885, 888 (9th Cir. 2003).

Under this Court's Local Rules, "[a] party filing a notice of motion for summary judgment or partial summary judgment must file a separate "Statement of Uncontroverted Facts," which "must set forth the material facts as to which the

moving party contends there is no genuine dispute." C.D. Cal. L.R. 56-1. The summary judgment procedure is not one-sided, however.

> If the party moving for summary judgment meets its initial burden of identifying for the court the portions of the materials on file that it believes demonstrate the absence of any genuine issue of material fact, the nonmoving party may not rely on the mere allegations in the pleadings in order to preclude summary judgment[, but instead] must set forth, by affidavit or as otherwise provided in Rule 56, specific facts showing that there is a genuine issue for trial.

T.W. Elec. Serv., Inc., v. Pac. Elec. Contractors Ass'n, 809 F.2d 626, 630 (9th Cir.1987) (internal citations and quotation marks omitted). The opposing party must "cit[e] to particular parts of materials in the record" or show that the materials the moving party cited do not establish the absence of a genuine dispute. Fed. R. Civ. P. 56(c)(1); *see also* Fed. R. Civ. P. 56(c)(3) ("The court need consider only the cited materials, but it may consider other materials in the record."); Phillips & Stevenson, RUTTER GROUP PRAC. GUIDE, FEDERAL CIV. PRO. BEFORE TRIAL (The Rutter Group 2021) ("Phillips & Stevenson"), ¶¶ 14:101.10-101.12, 14:102. In addition, under this Court's Local Rules, where the moving party on a motion for summary judgment has "claimed and adequately supported" material facts, those facts "are admitted to exist without controversy except to the extent that such material facts are (a) included in the 'Statement of Genuine Disputes' [described in Local Rule 56-2] and (b) controverted by declaration or other written evidence filed in opposition to the motion." *See* C.D. Cal. L.R. 56-4; *see also* *Gordon v. Virtumundo, Inc.*, 575 F.3d 1040, 1058 (9th Cir. 2009) ("The 'party opposing summary judgment must direct [the court's] attention to specific, triable facts,' and the reviewing court is 'not required to comb through the record to find some reason to deny a motion for summary judgment.' ") (quoting *S. Cal. Gas Co. v. City of Santa Ana*, 336 F.3d 885, 889 (9th Cir. 2003) and *Carmen*

v. San Francisco Unified Sch. Dist., 237 F.3d 1026, 1029 (9th Cir. 2001)); *Carmen*, 237 F.3d at 1029 ("[W]hatever establishes a genuine issue of fact must *both* be in the district court file *and* set forth in the response."). "Only disputes over facts that might affect the outcome of the suit under the governing law will properly preclude the entry of summary judgment. Factual disputes that are irrelevant or unnecessary will not be counted." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986).

*3 In judging evidence at the summary judgment stage, the Court does not make credibility determinations or weigh conflicting evidence, and views all evidence and draws all inferences in the light most favorable to the non-moving party. *See T.W. Elec.*, 809 F.2d at 630-31 (citing *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 106 S.Ct. 1348, 89 L.Ed.2d 538 (1986)); *Motley v. Parks*, 432 F.3d 1072, 1075 n.1 (9th Cir. 2005) (*en banc*); *Miranda*, 429 F.3d at 860 n.1. But conclusory, speculative testimony in affidavits and moving papers is insufficient to raise genuine issues of fact and defeat summary judgment. *See National Steel Corp v. Golden Eagle Ins. Co.*, 121 F.3d 496, 502 (9th Cir. 1997); *Thornhill Publ'g Co., Inc. v. GTE Corp.*, 594 F.2d 730, 738 (9th Cir.1979); *see also* Phillips & Stevenson ¶ 14:171.

C. **Evidentiary Objections Related to Fair Use**

1. Docket No. 274

   Sustain as to Objections 6, 10, 11 and 15 (as to missing transcript pages), and 19-21, 23; otherwise overrule

2. Docket No. 335-2

   1. Overrule

   2. Sustain as to statements in ¶¶ 5 and 22; otherwise overrule

D. **Factual Background** [3]

[3]   The following section is formed from what the Court considers to be undisputed facts (taking into account both those facts that the party opposing a motion voluntarily admits are "undisputed" and facts that the Court discerns – in assessing purported "disputes" – are actually undisputed, notwithstanding those nominal "disputes"). Any

actual factual disputes will be discussed, if and as necessary, in the course of the Court's "Analysis" section.

Passages that are redacted in this ruling reflect material that the parties have previously redacted in sealed versions of their submissions to the Court. Prior to the hearing on the motions, a "tentative ruling" with redactions was provided to the parties and they indicated after the hearing that they still wish to have the redacted portions kept from public disclosure.

1. ATEs, DTIs, and TPSs, etc.

Teradyne is a manufacturer and supplier, and Astronics a supplier, of automated test equipment ("ATE"), including digital test instruments ("DTI"). *See* Response to Teradyne's Statement of Genuine Disputes of Material Fact Pertaining to Astronics' Motion for Summary Judgment on Fair Use ("RFU"), Docket No. 353-1, ¶ 1; Response to Teradyne's Statement of Genuine Disputes of Material Fact Pertaining to Astronics' Motion for Summary Judgment on Copyright Infringement and Limitation on Damages ("RCID"), Docket No. 354-1, ¶ 1; Teradyne, Inc.'s Response to ATS's Statement of Genuine Disputes re: Teradyne's Motion for Partial Summary Judgment of Ownership of Valid Copyrights ("ROVC"), Docket No. 355, ¶ 1; Teradyne, Inc.'s Response to ATS's Statement of Genuine Disputes re: Teradyne's Motion for Partial Summary Judgment on Copying ("RC"), Docket No. 356-1, ¶ 1. ATE is computerized machinery that uses DTIs to perform measurements and diagnose faults on a unit under test ("UUT") in order to confirm that the UUT is functioning correctly. *See* RFU ¶ 2; RCID ¶ 2. For instance, the military defense industry, including the U.S. Military and Department of Defense contractors, uses ATE to ensure performance, functionality, and safety of UUTs, such as military aircrafts, missile launch systems, and radar and wireless communication systems. *See* RFU ¶ 3; RCID ¶ 3.

There are multiple ATE vendors in the ATE industry, not all of which use the same hardware. *See* RFU ¶ 4; RCID ¶ 4. ATE that Teradyne has manufactured includes the L-Series Tester, M9-Series DTI and Di-Series DTI. *See* ROVC ¶ 3; RC ¶ 1. As for Astronics, the T940 is one of its DTIs. *See* RFU ¶ 10; RCID ¶ 10.

*4 Teradyne stopped production of its L-Series tester in 2002, and notified customers of its intent to end support for the L-Series in December 2012. *See* RFU ¶ 25; RCID ¶ 25. In this action, Teradyne has not alleged that Astronics infringed copyrights associated with Teradyne's L-Series. *See* RCID ¶ 29.

Teradyne began producing the M9-Series of DTIs just a few years before Teradyne stopped production on the L-Series tester. *See* RFU ¶ 26. The M9-Series DTI was used in numerous U.S. military programs, including those for the Navy, Air Force, Army, and Marine Corps. *See* RFU ¶ 48; RCID ¶ 56.

Test program sets ("TPSs") are/have computer programs that interact with DTIs to run tests on a UUT. *See* RFU ¶ 6; RCID ¶ 6. An application program interface ("API") is a list of functions and associated parameters that allow two software applications, or different layers or tiers of software within the same application, to communicate. *See* RFU ¶ 40; RCID ¶ 48. Customers use APIs provided with the software for an ATE, including the function names in the APIs, to write TPSs to execute on that ATE. *See* RFU ¶ 41; RCID ¶ 49. [redacted] (though it has never been approached by another entity asking for such a license). *See* RFU ¶ 39; RCID ¶ 47.

2. Teradyne's Computer Programs and its Copyrights

Teradyne writes and has written computer programs to run its DTIs, including product-specific drivers and other software necessary to operate Teradyne hardware, such as software for its M9-Series DTI. *See* ROVC ¶ 4; RC ¶ 2. For instance, Teradyne's M9-Series Driver API 2.3, M9-Series Driver API 3.1, M9-Series Driver 2.3 Dynamic Link Library, and M9-Series Driver 3.1 Dynamic Link Library (the "M9-Series Works") are computer programs that provide a library of functions to allow customers to create and run TPSs on the M9-Series DTIs. *See* ROVC ¶ 5; RC ¶ 3.

The "CShell Works" (the CShell API Works [4] and CShell DLL Works [5]) are computer programs that can be used to write programs for the M9-Series DTI or to help convert TPSs written for Teradyne's earlier L-Series Tester in L200 programming language into C/C++ programming language, and thereby into TPSs that can be run on Teradyne's later M9-

Series DTIs. *See* ROVC ¶ 6; RC ¶ 11. The CShell Works provide a set of callbacks that allow a TPS developer or system integrator to implement functions that the M9-Series DTI does not implement, or where additional information is needed to properly configure the M9-Series DTI. *See* ROVC ¶ 74.

[4]   Teradyne's (i) CShell API 1.0 and (ii) CShell API 3.3 works. See RC ¶ 8.

[5]   Teradyne's (i) CShell 1.0 Dynamic Link Library, and (ii) CShell 3.3 Dynamic Link Library works. See RC ¶ 9.

The "DTB Works" (consisting of Teradyne's (i) DTB API 1.0.0.1 File Version 2, (ii) DTB 1.0.0.1 File Version 2 Dynamic Link Library, (iii) DTB API 1.0.0.1 File Version 18, and (iv) DTB 1.0.0.1 File Version 18 Dynamic Link Library works) are computer programs that allow Teradyne's M9-Series DTIs to create and execute a portion of TPS stored in a Teradyne file format called the digital test binary ("DTB") format.[6] *See* ROVC ¶ 7.

[6]   DTB is a format Teradyne created – though not necessarily *independently* created – to enhance the performance of some of its software, including by increasing its speed of execution. *See* ROVC ¶ 75.

The "Diagnostics API Works" (consisting of Teradyne's (i) M9-Series Diagnostics v1.1 API, (ii) M9-Series Diagnostics v2.0 API, and (iii) CSi Diagnostics v6.0 API) provide fault detection and diagnosis support for customer UUTs. *See* RC ¶ 12. The "Diagnostic Works" (consisting of the Diagnostics API Works and the CSi Diagnostics v7.0 Dynamic Link Library work) are computer programs that use Teradyne's M9-Series DTIs to provide fault detection and diagnosis support for customer UUTs. *See* ROVC ¶ 8.

*5 Teradyne is the owner of a number of registered copyrights related to the aforementioned works, including:

- U.S. Copyright Registration No. TX 8-705-281, with a registration date of April 3, 2019, for the software work entitled M9-Series Driver API 2.3 (first published in the United States on June 6, 1998), and it subsequently received a supplemental registration, U.S. Reg. No. TX 9-106-862, for that work on April 1, 2022. *See id.* ¶¶ 9, 26.

- U.S. Copyright Registration No. TX 8-705-307, with a registration date of April 3, 2019, for the software work entitled M9-Series Driver API 3.1 (first published in the United States on October 11, 1999). *See id.* ¶¶ 10, 27.

- U.S. Copyright Registration No. TX 8-705-433, with a registration date of April 3, 2019, for the software work entitled CShell API 1.0 (first published in the United States on January 1, 1999). *See id.* ¶¶ 11, 28.

- U.S. Copyright Registration No. TX 8-705-347 (at least according to the registration certificate itself), with a registration date of April 3, 2019, for the software work entitled CShell API 3.3 (first published in the United States on December 17, 2003). *See id.* ¶¶ 12, 29.

- U.S. Copyright Registration No. TX 8-702-546, with a registration date of April 3, 2019, for the software work entitled DTB API 1.0.0.1 File Version 2 (first published in the United States on May 14, 1998), and it subsequently received a supplemental registration, U.S. Reg. No. TX 9-106-832, for that work on April 1, 2022. *See id.* ¶¶ 13, 30.

- U.S. Copyright Registration No. TX 8-702-552, with a registration date of April 3, 2019, for the software work entitled DTB API 1.0.0.1 File Version 18 (first published in the United States on October 10, 1999), and it subsequently received a supplemental registration, U.S. Reg. No. TX 9-223-477, for that work on February 10, 2023. *See id.* ¶¶ 14, 31.

- U.S. Copyright Registration No. TX 8-853-864, with a registration date of March 9, 2020, for the software work entitled M9-Series Diagnostics v1.1 API (first published in the United States on September 1, 1998). *See id.* ¶¶ 15, 32.

- U.S. Copyright Registration No. TX 8-854-869, with a registration date of March 18, 2020, for the software work entitled M9-Series Diagnostics v2.0 API (first published in the United States on August 25, 2000). *See id.* ¶¶ 16, 33.

- U.S. Copyright Registration No. TX 8-854-736, with a registration date of March 13, 2020, for the software

work entitled CSi Diagnostics v6.0 API (first published in the United States on April 14, 2009). *See id.* ¶¶ 17, 34.

• U.S. Copyright Registration No. TX 8-851-955, with a registration date of March 9, 2020, for the software work entitled M9-Series Driver 2.3 Dynamic Link Library (first published in the United States on June 6, 1998), and it subsequently received a supplemental registration, U.S. Reg. No. TX 9-106-852, for that work on April 1, 2022. *See id.* ¶¶ 18, 35.

• U.S. Copyright Registration No. TX 8-851-966, with a registration date of March 9, 2020, for the software work entitled M9-Series Driver 3.1 Dynamic Link Library (first published in the United States on October 10, 1999). *See id.* ¶¶ 19, 36.

*6 • U.S. Copyright Registration No. TX 8-854-600, with a registration date of March 9, 2020, for the software work entitled CShell 1.0 Dynamic Link Library (first published in the United States on June 8, 1999). *See id.* ¶¶ 20, 37.

• U.S. Copyright Registration No. TX 8-851-991, with a registration date of March 9, 2020, for the software work entitled CShell 3.3 Dynamic Link Library (first published in the United States on December 17, 2003). *See id.* ¶¶ 21, 38.

• U.S. Copyright Registration No. TX 8-851-977, with a registration date of March 9, 2020, for the software work entitled DTB 1.0.0.1 File Version 2 Dynamic Link Library (first published in the United Stats on May 14, 1998), and it subsequently received a supplemental registration, U.S. Reg. No. TX 9-099-249, for that work on March 18, 2022. *See id.* ¶¶ 22, 39.

• U.S. Copyright Registration No. TX 8-851-986, with a registration date of March 9, 2020, for the software work entitled DTB 1.0.0.1 File Version 18 Dynamic Link Library (listing a date of first publication of April 18, 2003), and it subsequently received a supplemental registration, U.S. Reg. No. TX 9-223-486, for that work on February 10, 2023 (listing a date of first publication of October 10, 1999). *See id.* ¶¶ 23, 40; Docket No. 140-2, at pg. 15 of 18. and

• U.S. Copyright Registration No. TX 8-851-958, with a registration date of March 9, 2020, for the software work

entitled CSi Diagnostics v7.0 Dynamic Link Library (first published in the United States on September 27, 2017). *See* ROVC ¶¶ 24, 41.

Teradyne registered each of the M9-Series Works, CShell Works, DTB Works, and Diagnostic Works (the "Asserted Works" or the "Teradyne Works") more than five years from the date of first publication of each of those works, except for the CSi Diagnostics v7.0 Dynamic Link Library. *See* RCID ¶ 27. Teradyne's copyright registration certificates for each of the Asserted Works indicate that each of those works were published, some with first publication dates as early as 1998. *See id.* ¶ 28. The deposit copy of each of the Teradyne Works consists of either a selection of the code from the respective work or the entire code of the respective work. *See* ROVC ¶ 44. As detailed to some extent *infra*, Teradyne employees designed/wrote each of the Teradyne Works within the scope of their employment with Teradyne, as a work made for hire. *See id.* ¶¶ 45-55.

The L-Series language was a Teradyne programming language for Teradyne L-Series testers. *See id.* ¶ 70. Customers wrote TPSs for, and that execute on, the L-Series testers in the L200 programming language. *See* RCID ¶ 24; ROVC ¶ 70. However, Teradyne wanted to enable customers writing TPSs in the L-Series language to migrate from Teradyne's L-Series Testers (which used the VMS operating systems) to PC-based testers that use, for example, the M9-Series DTI. *See* ROVC ¶ 71. As such, CShell was created to provide a programming interface for the M9-Series DTI that would assist in the conversion of TPSs from L-Series Testers to PC-based testers while using an API familiar to users of the L-Series language. *See id.* Teradyne customers who had existing TPSs written for the L-Series had the ability to convert those TPSs from L200 programming language to C/C++ programming language. *See* RFU ¶ 45; RCID ¶ 53.

*7 [redacted] *See* RFU ¶ 46; RCID ¶ 54. TPSs written using Teradyne's M9-Series Driver API (which runs on Teradyne's M9-Series hardware) need Teradyne's M9-Series Driver API declaring code (found within the vendor's API header files) in order to compile the customer's TPSs, except where that TPS is written for a different environment or driver, such as where it is written for the ATLAS environment or where it is written using a wrapper. *See* RFU ¶ 42; RCID ¶ 50.

Like the L-Series tester, Teradyne ultimately stopped producing the M9-Series DTI as well, in August 2012 (though it continues to offer support for the tester). *See* RFU ¶ 49; RCID ¶ 57. Teradyne released its Di-Series DTI – an able replacement for the M9-Series DTI (with enhanced, or at least different, functionality in comparison to the M9-Series) – in 2005 and began full production of it in 2007. *See* RFU ¶¶ 50-51; RCID ¶¶ 58-59.

3. Astronics Steps In, Using Certain of Teradyne's Work

A "legacy" ATE system is a system that is one (or more) generation behind other systems, including systems that have been "end-of-lifed." *See* RFU ¶ 13; RCID ¶ 12. Legacy Digital Emulation ("LDE") – created around 2012 – and Digital Functional Library ("DFL") – created around 2007 – are optional software tools Astronics provides that allow its T940 DTI to emulate – and thereby operate as a replacement for – legacy test systems, including the M9-Series DTI and the digital subsystem of the L-Series Tester. *See* RFU ¶ 14; RCID ¶ 13; RC ¶¶ 20-21.

More-specifically, LDE enables customers to execute TPSs written for Teradyne's M9-Series DTI on Astronics' T940 DTI. *See* RFU ¶ 16; RCID ¶ 15; RC ¶ 24. DFL, in contrast, enables customers to execute, on Astronics' T940 DTI, TPSs written for Teradyne's L-Series DTI or TPSs that have been converted [redacted] *See* RFU ¶ 15; RCID ¶ 14. Thus, DFL provides the capability for Astronics' T940 DTI to run TPSs that use CShell functions, such as those converted from Teradyne's L-Series TPSs into the C programming language. *See* RC ¶ 22. Astronics' LDE/DFL software cannot be run on Teradyne DTIs. *See* RFU ¶ 22 RCID ¶ 21.

Astronics' T940 has numerous functionalities and features, including hardware and software features such as safe variable voltage input/output, pin electronics configured on a per channel basis to allow operation flexibility, and a sequencer allowing real-time throughput with minimal delays. *See* RFU ¶ 12. Astronics' LDE and DFL software is optionally-provided with its T940 DTI, though the T940 functions "natively" without that software. *See* RC ¶ 19.

TPSs written by customers for use on Teradyne's M9-Series instrument, or converted to CShell, include portions of source code from the Teradyne Works, such as function calls, constant values, parameters, and error codes from the source code in the Teradyne Works. *See id.* ¶ 18. To create its LDE/ DFL software, customers provided Astronics with TPS source code – including [redacted], including from the M9-Series API Works (*i.e.*, the M9-Series Driver API 2.3 and M9-Series Driver API 3.1) – [redacted] and with source code via documentation for the M9-Series driver. *See* RFU ¶ 17; RCID ¶ 16; RC ¶ 31. Astronics analyzed the API declarations, aliasing code, and error code/error messages customer TPSs were using. *See* RFU ¶ 18; RCID ¶ 17. Astronics in fact describes its LDE and DFL software – which is for use with Astronics' own instruments – as including function names that are the same or similar to function names that also appear in Teradyne's header files, which include (i) function names from Teradyne's Diagnostics API Works, (ii) function names from Teradyne's M9-Series API Works, and (iii) definitions and function names from the CShell API Works. *See* RC ¶ 53.

*8 In addition to access via customers, Astronics worked on the Agile Rapid Global Combat Support System ("ARGCS") program, on which Teradyne was also a subcontractor, in the early-to-mid 2000s, pre-dating the development of DFL, and later LDE. *See id.* ¶¶ 26-27. Through its work on the ARGCS program and software, Astronics had an *opportunity* to view or to copy material from the M9-Series API Works, Diagnostics API Works, and CShell Works. *See id.* ¶ 28. It also specifically had access to the CShell Works from customers, such as Northrop Grumman or the Navy, and has certain header files (*e.g.*, *.h) and other source code files (*e.g.*, *.c, *.cpp) from the CShell Works as provided through ARGCS by either the Navy or Northrop Grumman. *See id.* ¶ 29. Astronics also admitted to possessing copies of the files CShell.h; CShellDebugSupport.h; CShellOutput.h; and CShellStreams.h, all of which are source code from either Teradyne's CShell API Works or CShell DLL Works. *See id.* ¶ 30.

If a customer has a compiled TPS, it cannot be rewritten to remove the function names that appear in it without being recompiled. *See* RFU ¶ 43; RCID ¶ 51. Rewriting or recompiling a TPS creates some measure of risk that the TPS will not execute properly. *See* RFU ¶ 8; RCID ¶ 8.

As referenced previously, Astronics' customers provided Astronics with the customers' TPSs,[7] from which Astronics

identified the function names that the TPSs would require to run on Astronics' T940 hardware without having to be entirely rewritten. *See* RC ¶ 33. Astronics had "to implement the same names, constants, and functions" from customer header files in Astronics' own software to ensure it would execute at runtime. *See id.* ¶ 57. Thus, Astronics exactly matched the portions of Teradyne source code (such as function names) in customer TPSs to ensure compatibility such that customers could avoid recompiling customer TPSs. *See id.* ¶ 58.

[7]   [redacted] See RCID ¶ 55.

As a consequence, Astronics' LDE/DFL software let customers run their TPSs without rewriting or recompiling their TPSs to use on a T940. *See* RFU ¶ 21; RCID ¶ 20. It allowed customers' legacy TPSs that previously ran on Teradyne's M9 DTI to run on Astronics' T940, thereby allowing T940s with the LDE/DFL software to be sold as replacements for M9 DTIs (while also offering additional innovative features not included in other DTIs). *See* RFU ¶¶ 20-21; RCID ¶ 19. As a result, customers did not have to face any risk of TPSs not recompiling properly. *See* RFU ¶ 24; RCID ¶ 23.

4. Further Details re Tracing
Astronics' Code Back to Teradyne

[redacted] *See* RFU ¶ 38; RCID ¶ 46. The M9-Series Driver API 2.3 includes a header file named "terM9.h" with entries in its revision history through July 16, 1999 and file version M90303.84. *See* RC ¶ 4. The M9-Series Driver API 3.1 includes a header file named "terM9.h" with entries in its revision history through July 16, 1999 and file version M90303.74. *See id.* ¶ 5. The M9-Series DLL Works (*i.e.*, the M9-Series Driver 2.3 Dynamic Link Library and M9-Series Driver 3.1 Dynamic Link Library) include an implementation file named "terM9_errors.cpp." *See id.* ¶ 6.

The CShell API Works each include, among others, the following header files: CShell.h, CShellEnums.h, CShellEvent.h, CShellMapping.h, CShellOutput.h, and CShellPause.h. *See id.* ¶ 8. The CShell DLL Works each include the following files: CShell.c, CShellChannel.c, CShellMath.c, and CShellString.c. *See id.* ¶ 9. The CShell 3.3 Dynamic Link Library also includes (among others) the

header files CShellStreams.h and CShellDebugSupport.h. *See id.* ¶ 10.

Meanwhile, the Diagnostics API Works each contain header files named "diagnostics.h" and "DM_services.h." *See id.* ¶ 13.

Mr. Rutledge, senior manager in customer support at Astronics since 2015, assembled a spreadsheet "to develop a comprehensive view of the software in support of the T940 as [an] M9 replacement." *See id.* ¶ 34. The spreadsheet identifies certain "Source[s]" with certain Teradyne CShell Works' header file or function names, as well as definitions, descriptions, typedefs, return types, and parameters. *See id.* ¶ 35. It also includes a column of "M9 Function[s]" with certain Teradyne M9-Series API Works' function names, and a corresponding column concerning "T964 equivalent (implemented in C-shell)."[8] *See id.* ¶ 36.

[8]   Astronics was working on LDE with the T964 prior to the T940 being available. *See* RC ¶ 79.

*9 In addition, Astronics provided its third-party contractor, Global Engineering Management & Support, Inc. ("GEMS") with portions of source code to implement, including a list of function calls, from Teradyne's M9-Series API Works. *See id.* ¶ 39. GEMS received from a customer a list of functions that needed to be implemented, and would analyze the source code to see how the functions were being used, including looking at arguments and error codes, so that Astronics understood how to similarly implement those Teradyne functions in writing its implementation code to map the functionality to Astronics' native T940 driver. *See id.* ¶ 43.

Thus, GEMS relied on portions of Teradyne's source code to implement the functions from Teradyne's M9-Series API Works in Astronics' LDE software. *See id.* ¶ 42. GEMS used spreadsheets to track its implementation of Teradyne's functions from the M9-Series API Works and the Diagnostics API Works, breaking down Teradyne's source code into, for example, function name, function return, function description, input-output parameters, and return values. *See id.* ¶ 40. GEMS also used Excel macros to automate some of the manual input into/creation of source code for the T940 DTI from its breakdown of the portions of Teradyne's code. *See id.* ¶ 41.

When compiling its LDE software for a customer seeking legacy emulation, Astronics includes header files named "terM9.h", "diagnostics.h" and "DM_Services.h", which Astronics receives from its customers. *See id.* ¶¶ 32, 45, 47, 49. Astronics' lde.def file [9] lists hundreds of terM9 function calls that are identical to those listed in the terM9.h files from Teradyne's M9-Series API Works. *See id.* ¶ 61.

[9] The LDE software includes the following files: lde.def, DM_Services_vs.h, M9_Utility.cpp, and M9_Incomplete_Functions.cpp. *See* RC ¶ 25. Many of the functions in Astronics' M9_Incomplete_Functions.cpp file from its LDE software product are "stub functions," meaning that while the function is declared, the body of the function is blank (not implemented). *See id.* ¶ 65.

During discovery, Astronics produced an exemplary version of the terM9.h file compiled with its LDE software. *See id.* ¶ 46. That version contains a Teradyne copyright notice and (i) comments (including comments from Teradyne employees in the revision history), [10] (ii) error codes, (iii) types, and (iv) function declarations that are identical to, and in the same order as, those in the terM9.h file from Teradyne's M9-Series API Works. *See id.* ¶ 46. Astronics' version of terM9.h has a revision history through 2001 and a file version of M90401.8. *See id.* ¶ 46.

[10] Teradyne's employees wrote at least certain (though may not have "independently created" all) comments in the Teradyne source code, comments which are not functional, but which provide descriptions and annotations about the source code. *See* RC ¶ 15.

Astronics' expert Dr. Wicker understood that even though the terM9.h file used to build Astronics' LDE software came from Astronics' customers such as the U.S. Navy, Marine Corps, or Army, the terM9.h file "would have originated with Teradyne," including based on the naming convention ("terM9") designed to target Teradyne's M9-Series DTI. *See id.* ¶ 52. Dr. Wicker also confirmed that Astronics uses certain commands, parameters, data types, error messages, and constants from the M9-Series API Works, the Diagnostic Works, the Diagnostics API Works, and the CShell API Works. *See id.* ¶ 59.

Astronics' DM_Services.h header file, like its terM9.h header file, has Teradyne's copyright notice. *See id.* ¶ 49. Astronics' DM-Services_vs.h also includes function declarations and parameters identical to those in Teradyne's DM_services.h file from Teradyne's Diagnostics API Works. *See id.* ¶ 62.

*10 During discovery, Astronics also produced versions of a file called diagnostics.h. *See id.* ¶ 48. A file by that name is compiled as part of Astronics' LDE software and has similar or identical lines of code as the diagnostics.h file that is part of Teradyne's Diagnostics API Works. *See id.* ¶ 48. Astronics' employee Mr. D'Arcangelis admitted that Astronics implemented some functions from Teradyne's diagnostic library. *See id.* ¶ 50.

Astronics has also admitted that it used Teradyne's "declaring, aliasing, and error code" to write its LDE and DFL software. *See id.* ¶ 54. [11] For instance, Astronics' M9_Utility.cpp file includes over 200 identical error codes and messages in the same order as Teradyne's terM9_errors.cpp file. *See id.* ¶ 63.

[11] Declaring code refers to the commands (also referred to as "function calls" or "function names") of a software program. *See* RC ¶ 55. Error code refers to the resulting code and associated message returned when an error occurs during execution of a TPS. *See id.* ¶ 56.

Astronics also used function calls from the M9-Series driver in LDE. *See id.* ¶ 78. Astronics provided software that included function names and other elements from the Teradyne M9-Series driver with the T964 for legacy emulation. *See id.* ¶ 79.

Astronics also admitted that it used definitions and functions from the CShell API in its DFL software. [12] *See id.* ¶ 60. Astronics' DFL.h has 971 out of 978 unique define statements that are identical to those in the CShellEnums.h file from Teradyne's CShell API Works. *See id.* ¶ 66. It includes 89 lines of non-implementation source code defining parameters that are identical to non-implementation source code from Teradyne's terM9.h file. *See id.* ¶ 71. It has typedef declarations, parameters, and comments that are identical to those from the CShell.h file. *See id.* ¶ 72. It also has identical or nearly identical comments as those in CShellEnums.h. *See id.* ¶ 67. For instance, it includes the identical comment

"Version 3.3" (referring to Teradyne's CShell API 3.3) before including verbatim non-implementation code from the CShellEnums.h file in Teradyne CShell 3.3 API. *See id.* ¶ 68. In its DFL.h file, Astronics also occasionally included duplicate entries, repeating the same lines of source code copied from Teradyne multiple times. *See id.* ¶ 69.

12   The DFL software includes the following files: DFL.h; Setup.cpp; Library.cpp; Math.cpp; and String.cpp. *See* RC ¶ 23.

In addition, Astronics' file library.cpp includes non-implementation source code that is identical and nearly identical to non-implementation source code from the CShell.c file in Teradyne's CShell DLL Works, as well as comments from Teradyne employees. *See id.* ¶ 73. Similarly, Astronics' Math.cpp includes certain comments and function API definitions that are identical or near-identical to comments and function API definitions in Teradyne's CShellMath.c source code file. *See id.* ¶ 74. Likewise, Astronics' String.cpp includes certain comments and function API definitions that are identical or near-identical to comments and function API definitions in Teradyne's CShellString.c source code file. *See id.* ¶ 75.

The typedef "SETDIGITALPOSTPROC," its description, and source code definition from Mr. Rutledge's spreadsheet appear verbatim in both Teradyne's CShell.h file and Astronics' DFL.h file. *See id.* ¶ 37. Mr. Rutledge's spreadsheet also details the function "CShellSetDigitalPostSetFunction," its return type "void," parameters "SETDIGITALPOSTPROC set_digitalCallback" and comment ("Specifies the function to call on post-set_digital. A value of NULL for the set_digital callback indicates that no function should be called."), which appear verbatim in Teradyne's CShellChannel.c file and ATS's Setup.cpp. *See id.* ¶ 38.

*11   When Mr. Rutledge catalogued CShell in the spreadsheet, he identified specific sources for Astronics' DFL software, including CShell, CShellEvent, CShellMapping, CShellOutput, CShellPause in the "typedefs" sheet and CShellDebugSupport and CShellStreams in the "functions (DFL)" sheet. *See id.* ¶ 51. These names correspond to certain Teradyne header (*.h) or implementation (*.c, or *.cpp) files in the CShell API and DLL Works. *See id.* ¶ 51.

In addition, the earliest-dated comment in Astronics' dfl-history.txt document states: "revert DFL* names back to CShell/CSHELL* to match Teradyne's CShell API per the Oracle America, Inc. v. Google Inc. ruling." *See id.* ¶ 76. That document also reflects updates and makes reference to function names containing "CShell" or "terM9," including certain function names that are similar or identical to function names in the M9-Series API Works or the CShell API Works. *See id.* ¶ 77.

5. Standards & Compatibility

The Interchangeable Virtual Instruments ("IVI") Foundation – which the VXI*plug&play* Systems Alliance merged into in 2003 – collaborates on specifications for testing instruments to help provide interoperability of hardware and software. *See* RFU ¶ 28; RCID ¶ 30. Teradyne is a member of the IVI, and supported efforts to develop interoperability standards. *See* RFU ¶¶ 30-31; RCID ¶¶ 33-34. IVI's VXI*plug&play* standards give end-users "plug and play" interoperability and compatibility. *See* RFU ¶ 29; RCID ¶ 31. For instance, the VXI*plug&play* 3.4 specification provides guidance on how to define an API, including through the content and use of a header file named "prefix.h." *See* RFU ¶ 35; RCID ¶ 43.

When Teradyne created the Asserted Works, it had access to the specifications produced by various standards bodies, including those for *VXIplug&play* and the Institute of Electrical and Electronics Engineers ("IEEE"). *See* RFU ¶ 34; RCID ¶ 42. [13] It also had access to header files from the *VXIplug&play* standard. *See* RFU ¶ 34; RCID ¶ 42. [redacted] *See* RFU ¶ 36; RCID ¶ 44. Teradyne also admits that when it created the Asserted Works, it used terminology from historical products, including other Teradyne products. *See* RFU ¶ 37; RCID ¶ 45. Some of those historical products [redacted] *See* RCID ¶ 45.

13   Teradyne participates in the following standards organizations by attending meetings, voting on resolutions, and reviewing and approving specifications: VXIbus Consortium; PXI Systems Alliance; LXI Consortium; VXIplug&play Systems Alliance (now part of the IVI Foundation); IVI Foundation; IEEE SCC20. *See* RCID ¶ 32.

Teradyne's M9-Series DTI [redacted] *See* RFU ¶ 33; RCID ¶ 41. Teradyne has advertised its M9-Series DTI has a VXIplug&play software driver and that the M9-Series DTI is easily integrated with other instruments in a VXI-based test system. *See* RCID ¶ 35.

The M9-Series Works included a driver compatible with the VXIplug&play standard, which defines: (i) how to name the dynamic link library ("DLL") produced, (ii) where that DLL gets installed, (iii) the prefix to use when naming functions in the API, and (iv) seven required functions. *See* ROVC ¶ 65. However, Teradyne made various choices – while not having *unlimited* choices – in determining how to implement this compatibility. *See id.* The M9-Series Works include – in addition to new code – the seven functions required by the VXIplug&play standard. *See id.* ¶ 66. Out of the various options available, Teradyne chose the prefix "terM9" for those function names and defined values. *See id.* ¶ 66. Comments in the revision history of Teradyne's terM9.h file, written (or included therein) by Teradyne's employees, reflect the addition of functions beginning with the "terM9" prefix, which signals that the function targets the M9-Series DTI. *See* RC ¶ 44.

6. Teradyne Design Efforts

 *12 The parties' Local Rule 56-1, 56-2, and 56-3 materials also provide a great deal of information concerning Teradyne's creation, design and programming efforts. Many of the files that comprise the Teradyne Works contain a revision history at the beginning of the file, which includes a description of the revisions that were made and the initials of the Teradyne employee who made those revisions.[14] *See id.* ¶ 17; ROVC ¶ 56. Alycia McGoldrick and Teresa Lopes were primary contributors to Teradyne's M9-Series Driver API, M9-Series Dynamic Link Library, CShell API, and CShell Dynamic Link Library. *See* RCID ¶ 37. David Lind ("Lind") was a primary contributor to Teradyne's DTB API and DTB Dynamic Link Library. *See id.* ¶ 38. Lind and Eugene Polyakov ("Polyakov") were primary contributors to Teradyne's Diagnostics API and Diagnostics Dynamic Link Library and were [redacted] *See id.* ¶ 39.

[14]   Subsequent versions of a particular Teradyne Work contain all (or almost all) of the material from the

previous version of that Work, as well as additional new material. *See* RC ¶ 16.

When creating the M9-Series Works, Teradyne employees first assessed the hardware, identified the functionality to expose to users, and defined the functions to include in the software to make that available to users, often leading to discussions about how a given choice might affect the entire API. *See* ROVC ¶ 60. The employees responsible for defining the M9-Series Works API had meetings about the choices of what words to use in the function and parameter names; whether a function should perform multiple actions or a single action; and, if there was a high-level function, whether the M9-Series Works would need to expose the lower-level functions as well. *See id.* ¶ 64.

When creating the M9-Series Works, Teradyne had to choose how to address repeated items (*i.e.*, items that the instrument had more than one of, such as channels or timing sets). *See id.* ¶ 61. Of the various alternatives, Teradyne established two patterns: (i) for items where a single item or a range of items was addressed, Teradyne chose to use a simple numeric index or a simple numeric starting index and count; and (ii) for items where a user could specify a single item, a group of items or all the items of a specific type, Teradyne chose to use a "scope index," a numeric value that could identify a single item, a group of items, or all items of a specific type. *See id.* This choice allowed users to define their own scope indexes, which provided flexibility. *See id.*

In creating the M9-Series Works, Teradyne also decided on the terminology for a collection of patterns. *See id.* ¶ 62. On previous Teradyne testers, a collection of patterns was called a "burst." *See id.* However, for the M9-Series Works, Teradyne chose to use the term "pattern set" when referring to the collection, and the terms "run" or "initiate" when referring to the action. *See id.*

In creating the M9-Series Works, Teradyne also selected the verbs to use in function names. *See id.* ¶ 63. For example, from among various options, Teradyne chose to use "set" and "get" for values that can be set and retrieved, and "fetch" for values that were not explicitly set. *See id.* ¶ 63.

Lind created – though not necessarily independently created – the DTB data structure, which organizes the information needed to describe a digital test in a way that a computer

can understand. *See id.* ¶ 76. As the technical lead for the DTB Works and Diagnostics Works, he considered customer requirements and decided how to write the code of those works to best meet those requirements. *See id.* ¶ 77. For the DTB Works and Diagnostic Works, he made – though not necessarily independently, at least as to certain functions – various decisions about how to design and write the code of those works. *See id.* ¶ 78. Working with Teradyne employee Lloyd Frick ("Frick"), Lind chose and implemented the design of the API that is used to access data in the DTB data structure. *See id.* ¶ 79. In creating the source code file DTB.h, he made "various decisions" about how to write source code that would organize and implement the data structures that describe the DTB format used to load digital tests from disk to hardware. *See id.* ¶ 80. In creating that source code file, he also studied the Teradyne hardware instrument at issue, decided what needed to be configured in that instrument, and made various choices about how to organize the data into a structure that would make the description of the test as efficiently loadable as possible. *See id.* ¶ 81. After creating DTB.h, Lind and Frick also wrote the "Digital Test Binary Application Programming Interface Design Specification," which describes the purpose and goals of the APIs in the DTB Works, how the software accomplishes those goals, and the architecture and overall structure, arrangement, and organization of the software. *See id.* ¶ 82.

 *13 Teradyne decided to use an API in the DTB data structure, rather than allowing users to access that data structure directly, to insulate users from future changes. *See id.* ¶ 85. In addition, to avoid the risk of users corrupting the data, Teradyne chose to use "handles" rather than, for example, pointers directly into memory. *See id.* Teradyne also created a diagram of the DTB data structure to guide development efforts that enabled Teradyne to create a logical set of functions that would be easier for users to follow. *See id.* ¶ 86.

Using the DTB API Design Specification, Lind created – though not necessarily *independently* created – the source code file DTB_public.h, which contains the exported function prototypes for the DTB reader/writer. *See id.* ¶ 83. To create DTB_public.h, Lind reviewed the structure he had defined in DTB.h, and decided how to structure and implement a set of functions to extract that data in a way that would be meaningful and helpful to users of the API. *See id.* ¶ 84. He chose the names, organization, order, and grouping of

exported function prototypes in DTB_public.h in a manner that would allow users of the API to easily interface with the Teradyne hardware at issue. *See id.* After DTB_public.h was created (though, again, not necessarily *independently* created), Frick and other Teradyne employees created the software that implements the API described in DTB_public.h. *See id.* ¶ 87.

Frick also used the Lex & YACC tool to assist him in writing a small portion of source code for certain DTB Works: DTB 1.0.0.1 File Version 2 Dynamic Link Library and DTB 1.0.0.1 File Version 18 Dynamic Link Library, including source code in the files Ytab.c, Ytab.h, lex_yy.c, ascii.y, and ascii.l. *See id.* ¶ 88. To assist in writing this code, Teradyne supplied the Lex & YACC tool with inputs including keywords and grammar. *See id.* Once the Lex & YACC tool generated the code, Teradyne engineers added code that converted the ASCII text version to a DTB format. *See id.*

Lind was also a technical lead for the Diagnostics Works, and defined those works, which involved obtaining customer requirements and deciding – though not necessarily *independently* deciding – how to write the relevant code to best meet those requirements. *See id.* ¶¶ 89-90. When creating the Diagnostics Works, Teradyne went through a process similar to that noted above for the DTB Works. *See id.* ¶ 91. Teradyne broke up the Diagnostic Works' functionality into various libraries (*e.g.*, boundary scan, fault dictionary, and guided probe), defined what each would do, and determined how they would interact by using Object Oriented Analysis. *See id.* ¶ 92. Teradyne decided not to use a functional approach because it often resulted in a code base that was difficult to maintain and grow over time. *See id.*

Using this methodology, Teradyne first created several design documents, including a Diagnostics Functional Specification, which described the overall architecture of the Diagnostics Works. *See id.* ¶ 93. These design documents describe the relevant software interfaces, and describe the individual software components that would be created, and how they would interact with each other to meet the customer requirements. *See id.* Teradyne also created a description of each of the software components so it could determine whether the overall design would meet the requirements, and so some of the coding could be assigned to other Teradyne employees. *See id.*

Polyakov used the Kennedy Carter Intelligent Object Oriented Analysis tool to assist him in writing a portion of source code for the CSi Diagnostics v7.0 Dynamic Link Library. *See id.* ¶ 94. The Kennedy Carter tool is an early "Object Oriented Analysis" tool that provides a way to design software using a methodology that involves breaking the problem domain into separate software objects and defining how these objects interact with each other. *See id.* Teradyne used the Kennedy Carter tool to help Teradyne employees write the Guided Probe Manager by supplying design inputs for the tool to convert into computer code. *See id.*

*14 Frick used the Lex & YACC tool to help him write a small portion of source code for the CSi Diagnostics v7.0 Dynamic Link Library work, including the source code files Ytab.c, Ytab.h, and lex_yy.c. *See id.* ¶¶ 68, 95. In brief, the tool helped him write a piece of utility software that reads and translates an ASCII file that contains digital voltage levels for instrument channels. *See id.* ¶ 95.

Teradyne employees responsible for writing the CShell Works had various meetings about how to best map the functionality of the L-Series language to the C language. *See id.* ¶ 72. Teradyne created certain functions in the CShell Works, such as "CShellInit," that were unique to those works. *See id.* ¶ 73.

E. Analysis
There, now that that subject matter went down so easily, it is time to get down to assessing the "billowing white goo" of fair use. *See Monge v. Maya Magazines, Inc.*, 688 F.3d 1164, 1171 n.4 (9th Cir. 2012) referencing Jessica Litman, *Billowing White Goo*, 31 Colum. J.L. & Arts 587, 596 (2008).

1. Motion One
What the Court refers to as "Motion One" is Astronics' defensive motion based upon the "fair use" doctrine, codified in 17 U.S.C. § 107. "[T]he fair use of a copyrighted work, including such use by reproduction in copies ... for purposes *such as* criticism, comment, news reporting, teaching ..., scholarship, or research, is not an infringement of copyright." 17 U.S.C. § 107 (emphasis added). Section 107 and the fair use doctrine stand as one recognition of the fact that "[p]rotection of copyrighted works is not absolute. 'The fair use defense permits the use of copyrighted works without the copyright owner's consent under certain situations.' " *VHT,*

Inc. v. Zillow Grp., Inc., 918 F.3d 723, 739 (9th Cir. 2019) (quoting *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146, 1163 (9th Cir. 2007)); *see also Google LLC v. Oracle Am., Inc.*, 593 U.S. ——, 141 S.Ct. 1183, 1196, 209 L.Ed.2d 311 (2021) ("[A] copyright holder cannot prevent another person from making a 'fair use' of copyrighted material.").

"The defense encourages and allows the development of new ideas that build on earlier ones." *Perfect 10,* 508 F.3d at 1163; *see also Kelly v. Arriba Soft Corp.*, 336 F.3d 811, 820 (9th Cir. 2003) ("The Copyright Act was intended to promote creativity, thereby benefitting the artist and the public alike."). As such, it "permits and requires courts to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster." *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577, 114 S.Ct. 1164, 127 L.Ed.2d 500 (1994); *see also Andy Warhol Found. for the Visual Arts, Inc. v. Goldsmith*, 598 U.S. 508, 526-27, 143 S.Ct. 1258, 215 L.Ed.2d 473 (2023) (describing the "balancing act between creativity and availability" in the nation's copyright laws, including through Section 107's fair use defense); *Seltzer v. Green Day, Inc.*, 725 F.3d 1170, 1175 (9th Cir. 2013); 4 Melville B. Nimmer & David Nimmer, *Nimmer on Copyright* (Matthew Bender, Rev. Ed. 2009) ("Nimmer"), § 13.05, at 13-155 ("In determining whether given conduct constitutes copyright infringement, the courts have long recognized that certain acts of copying are defensible as 'fair use.' ").

A fair use determination requires consideration of at least four "non-exhaustive factors," set forth in the statute, in a "flexible" way that "may well vary depending upon context": (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work. *McGucken v. Pub Ocean Ltd.*, 42 F.4th 1149, 1157 (9th Cir. 2022) (quoting *Google,* 141 S.Ct. at 1197 and citing 17 U.S.C. § 107); *see also* 17 U.S.C. § 107; *Google,* 141 S.Ct. at 1197 ("[S]ome factors may prove more important in some contexts than in others."); *VHT,* 918 F.3d at 739 ("With minimal guidance or elucidation, Congress set forth four factors for courts to consider when determining whether the use of a copyrighted work is a 'fair use'."); *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 560, 105

S.Ct. 2218, 85 L.Ed.2d 588 (1985) ("The factors enumerated in the section are not meant to be exclusive ...."). "Over time, there has been a shift in analytical emphasis in the fair use factors, in large part due to several key Supreme Court cases. The relative importance of factor one – 'the purpose and character' of the use – and factor four – 'the effect of the use upon the potential market' – has dominated the case law." *Monge*, 688 F.3d at 1171. Still, the four factors "must all be explored, and all the results evaluated together, in light of the purposes of copyright." *Seltzer*, 725 F.3d at 1175; *see also Mattel, Inc. v. Walking Mountain Prods.*, 353 F.3d 792, 800 (9th Cir. 2003) ("To determine whether a work constitutes fair use, we engage in a case-by-case analysis and a flexible balancing of relevant factors.... Depending on the particular facts, some factors may weigh more heavily than others."); *see also* Nimmer, § 13.05[A][1][a], at 13-163 ("[E]ven if the defendant's use falls within the first fair use factor, the result is merely to tilt towards, but not to necessitate a finding of fair use. The first factor must still be balanced against the other factors listed in Section 107.").

 *15 The fair use doctrine has been described as an "equitable rule of reason." *See, e.g., McGucken*, 42 F.4th at 1157. Nevertheless – or perhaps *because* of this – "[g]iven license to apply the[ ] four [listed fair use] factors flexibly and to consider them in their totality, courts have been bedeviled by the fair use inquiry." *VHT*, 918 F.3d at 739; *see also* Nimmer, § 13.05[A], at 13-159 (recognizing both that Section 107 "gives no guidance as to the relative weight to be ascribed to each of the listed factors" and that "each of the factors is defined in only the most general terms, so that courts are left with almost complete discretion in determining whether any given factor is present in any particular case"). It "has been called 'the most troublesome [doctrine] in the whole law of copyright' and commentators have criticized the factors as 'billowing white goo.' " *VHT*, 918 F.3d at 739 (quoting *Monge*, 688 F.3d at 1170-71); *see also Dr. Seuss Enters., L.P. v. ComicMix LLC*, 983 F.3d 443, 451 (9th Cir. 2020) ("*ComicMix*") ("As we have observed, fair use analysis can be elusive to the point of 'approaching the metaphysics of the law, where the distinctions are ... very subtle and refined, and, sometimes, almost evanescent.' ") (quoting *Monge*, 688 F.3d at 1171) (omitting internal quotation marks); *Monge*, 688 F.3d at 1183 ("Following the statute, we consider each of the four factors and put them in the judicial blender to find the appropriate balance.").

Nonetheless, fair use is a "mixed question of law and fact" and is "often resolved at summary judgment." *McGucken*, 42 F.4th at 1158. This is certainly at least the case when no material facts are in dispute. *See Leadsinger, Inc. v. BMG Music Publ'g*, 512 F.3d 522, 530 (9th Cir. 2008) ("Fair use is a mixed question of law and fact, but it is well established that a court can resolve the issue of fair use on a motion for summary judgment when no material facts are in dispute."); *Seltzer*, 725 F.3d at 1175 ("Where no material, historical facts are at issue and the parties dispute only the ultimate conclusions to be drawn from those facts, we may draw those conclusions without usurping the function of the jury."); *L.A. News Serv. v. KCAL-TV Channel 9*, 108 F.3d 1119, 1120 (9th Cir. 1997) (" 'If there are no genuine issues of material fact, or if, even after resolving all issues in favor of the opposing party, a reasonable trier of fact can reach only one conclusion, a court *may* conclude as a matter of law whether the challenged use qualifies as a fair use of the copyrighted work.' ") (emphasis added) (quoting *Hustler Magazine Inc. v. Moral Majority Inc.*, 796 F.2d 1148, 1150 (9th Cir. 1986)); *Narell v. Freeman*, 872 F.2d 907, 910 (9th Cir. 1989) ("Fair use is a mixed question of law and fact that *may* be resolved on summary judgment if a reasonable trier of fact could reach only one conclusion.") (emphasis added).

Of course, whether Astronics should prevail on the defense is a question on which it bears the burden. *See, e.g., Monge*, 688 F.3d at 1170 ("This affirmative defense presumes that unauthorized copying has occurred, and is instead aimed at whether the defendant's use was fair."); *see also Campbell*, 510 U.S. at 590, 114 S.Ct. 1164; *ComicMix*, 983 F.3d at 459. This would typically mean that Astronics would have to show that the evidence supporting the defense "is so powerful that no reasonable jury would be free to disbelieve it." *Shakur*, 514 F.3d at 890; *see also Campbell*, 510 U.S. at 594, 114 S.Ct. 1164 ("[A] silent record on an important factor bearing on fair use disentitled the proponent of the defense ... to summary judgment."); *Monge*, 688 F.3d at 1191 n.7 ("Summary judgment on fair use grounds is appropriate only if it is the only reasonable conclusion a trier of fact could reach in the case.") (M. Smith, J., dissenting); Nimmer, § 13.05[A][4], at 13-199 (predicting that "defense summary judgments will continue in the fair use arena even after *Campbell*, but those defendants will be challenged to develop an appropriate record").

But that principle is of less-sure footing as applied to fair use now, it seems. This is because the Supreme Court only-recently clarified that the ultimate question of whether facts bearing upon fair use actually demonstrate a fair use "is a legal question for judges to decide." *Google*, 141 S.Ct. at 1199. Thus, application of the doctrine is not for the factfinder (at least in cases where any factfinder would be a jury). Instead, it simply appears that a court is to determine, after considering all of the factors flexibly, whether the doctrine applies or does not. Of course, "[a]pplying a legal 'fair use' conclusion may ... involve determination of subsidiary factual questions, such as 'whether there was harm to the actual or potential markets for the copyrighted work' or 'how much of the copyrighted work was copied.' " *Id.* at 1200 (quoting *Oracle Am., Inc. v. Google LLC*, 886 F.3d 1179, 1196 (Fed. Cir. 2018)). But where there are no such factual disputes that must be resolved,[15] the question simply seems to be "Is the Court convinced that fair use is at hand, or not?"[16]

[15] Teradyne asserts that Astronics "cannot show that there are no genuine disputes of material fact." Docket No. 313, at 12:18-19. But what facts are both truly "disputed" (requiring a jury to resolve), and "material" to the fair use determination? If they consist of the list of bullet points found at page 18, line 17, through page 19, line 7, of Teradyne's Opposition brief (Docket No. 313), those issues appear to be either not "material" to the analysis the Court has set forth herein (because even a resolution of those facts in Teradyne's favor would not change the outcome on any particular factor) or are not disputes (*e.g.*, identification of the relevant market) that the Court believes are appropriate for a *jury*-resolution.

[16] This is as good a point as any to note that the Court has considered the notices of supplemental authority Teradyne provided on September 27, 2023 and October 25, 2023 and the district court cases cited therein. It finds none of them particularly illuminating here with respect to any issue relevant to fair use that might actually be considered a close call here. However, the Court does note that *Sedlik v. Von Drachenberg*, No. CV 21-1102 DSF (MRWx), 2023 WL 6787447 (C.D. Cal. Oct. 10, 2023), seems – at least in

this Court's view – to inappropriately leave the issue of fair use (rather than factual disputes informing application of that doctrine) to the jury, contrary to the process *Google* appears to indicate is appropriate. In contrast, *Thomson Reuters Enter. Centre GmbH v. Ross Intelligence Inc.*, No. 1:20-cv-613-SB (D. Del. Sept. 25, 2023), appears to get the appropriate division of labor between court and jury correct (with the possible exception of how it handles the "public benefit" question that is part of the fourth fair use factor, *see id.* at *11), but the factual disputes sent to the jury in that case do not share commonalities with any issues here. *See id.* at *8-10 (indicating that transformative issue "depends on the precise nature of [the defendant's] actions," that factor two depends largely on factual questions regarding validity and strength of copyright in question, that "[h]ow [the defendant's] AI works and what output it produces remains disputed" for purposes of resolving factor three, and dispute concerning "the realities of how [the] technological works are created and disseminated" precluded resolution of factor four as a matter of law). As for *Oracle International Corporation v. Rimini Street, Inc.*, No. 2:14-cv-01699-MMD-DJA, 2023 WL 4706127 (D. Nev. July 24, 2023) – which, like the other, is obviously non-binding – Teradyne has not explained what the software in that action has in common with (and in contrast to) the computer programs at issue here, other than to say it involved "generat[ing] software offerings compatible with" the plaintiff's software application. Docket No. 372, at 2:16-17. Absent a more-sustained explanation of why it is apples-to-apples with this case, that decision does not move the Court's fair-use thinking in this action, as it is set forth *infra.*

*16 Given the type of copyrighted material at issue in this case, one last general principle is worth noting here before turning to an examination of the individual factors. In its recent *Google* decision (a decision, Astronics points out, that was issued after this case was filed), the Supreme Court explained that "fair use can play an important role in determining the lawful scope of a computer program copyright," in part because:

> [i]t can focus on the legitimate need to provide incentives to produce copyrighted material while examining the extent to which yet further protection creates unrelated or illegitimate harms in other markets or to the development of other products. In a word, it can carry out its basic purpose of providing a context-based check that can help to keep a copyright monopoly within its lawful bounds.

Google, 141 S.Ct. at 1198 (citing, among other things, the Ninth Circuit's decisions in *Sony Computer Entm't, Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000) and *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992)); *see also Sony Computer*, 203 F.3d at 603 ("[T]he fair use doctrine preserves public access to the ideas and functional elements embedded in copyrighted computer software programs.").

All of the foregoing being said, at the outset it must be noted that the analysis on this motion is *at least conceivably* made more difficult by the fact that there are sixteen works at issue, yet Astronics has addressed the issues as if the defense may all be adjudged singularly in connection with all of those works. Teradyne raises that issue in its Opposition brief, asserting that Astronics has failed to meet its burden on this motion by lumping them together. Of course, it was Teradyne that elected to present a single claim for copyright infringement. For its part, Astronics points to a number of cases deciding fair use collectively as to a group of copyrighted works, not work-by-work. In any event, Teradyne has not explained why the outcome would be different on a work-by-work basis. The most obvious factor where it might conceivably have made a difference would be the third factor (not one of the two most-important fair use factors, according to the case law). *But see* Footnote 22, *infra*. Ultimately, Teradyne does not appear to contend that *any* of the sixteen works are any closer to the core of copyright than those that were at issue in *Google* – a significant consideration, in this Court's view.

The Court's assessment of the factors as presented on this motion follows, but before getting to that, a brief summary of what is at issue here (according to the parties' briefs on this motion) may be useful in order to make more easily-digestible/understandable the Court's attempt at summarizing the factual situation relying on the parties' Local Rule 56-1, 56-2, and 56-3 statements. According to Astronics, Teradyne's case, simplified, is about "Astronics' use of about 1,000 lines of declarations" in Astronics' LDE and DFL software (though Teradyne has at least somewhat-understandably complained about whether Astronics has factually-established the number of lines of code at issue, as discussed further *infra*). Docket No. 259, at 1:14-16. Teradyne agrees that the LDE and DFL software "include portions of the Teradyne Works." Docket No. 313, at 15:2-4. Astronics asserts that the LDE and DFL software was designed in this way so that the U.S. Military, which had written TPSs to execute on ATEs "across major national defense programs," Docket No. 259, at 1:18-21, could continue to use and rely upon those TPSs on newer, better, ATE – or at least ATE of its choice – without having to face risks and expense that would be associated with rewriting those TPSs. In sum, according to Astronics, "[t]his case implicates a textbook example of a fair use: the minimal use of functional material for a transformative purpose that benefits the public and is consistent with the goals of the industry." Docket No. 259, at 9:7-9.

 *17 Now, on to the fair use factors to see whether the Court agrees.

a. Purpose and Character; Commercial Nature

Under Section 107, the first factor a court is to consider in assessing the fair use defense is "the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes." 17 U.S.C. § 107(1). The first fair use factor "considers the reasons for, and nature of, the copier's use of an original work," and "focuses on whether an allegedly infringing use has a further purpose or different character, which is a matter of degree," with "the degree of difference ... weighed against other considerations, like commercialism."[17] *Andy Warhol Found. for the Visual Arts, Inc. v. Goldsmith*, 598 U.S. 508, 525, 528, 143 S.Ct. 1258, 215 L.Ed.2d 473 (2023).

17   *Google* also rejected the notion that the "factbound consideration" of good/bad faith, if it properly had "any role in a fair use analysis" (a proposition that the Supreme Court therein found "skeptic[al]"), was "determinative in this context" "given the strength of the other factors pointing toward fair use." *Id.* at 1204. Here, the Court equally believes that this concept has little influence, one way or the other, on its ultimate outcome.

"The Supreme Court has stated that the 'central purpose' of this factor is to see 'whether and to what extent the new work is transformative.' " *Seltzer*, 725 F.3d at 1175-76 (quoting *Campbell*, 510 U.S. at 579, 114 S.Ct. 1164). Thus, "[t]he animating purpose of the first factor" is to determine "whether the new work merely supersede[s] the objects' of the original creation ... or instead adds something new, with a further purpose or different character, altering the first with new expression, meaning, or message." *VHT*, 918 F.3d at 740 (quoting *Campbell*, 510 U.S. at 579, 114 S.Ct. 1164) (omitting internal quotation marks); *see also Seltzer*, 725 F.3d at 1176 ("If ... the secondary use adds value to the original – if the quoted matter is used as raw material, transformed in the creation of new information, new aesthetics, new insights and understandings – this is the very type of activity that the fair use doctrine intends to protect for the enrichment of society.") (quoting Leval, *Toward a Fair Use Standard,* 103 Harv. L. Rev. 1105, 1111 (1990)) (omitting internal quotation marks); *Perfect 10*, 508 F.3d at 1165 (" 'A use is considered transformative only where a defendant changes a plaintiff's copyrighted work or uses the plaintiff's copyrighted work in a different context such that the plaintiff's work is transformed into a new creation.' ") (quoting *Wall Data Inc. v. L.A. Cty. Sheriff's Dep't*, 447 F.3d 769, 778 (9th Cir. 2006)). "[E]ven making an exact copy of a work may be transformative so long as the copy serves a different function." *Perfect 10*, 508 F.3d at 1165. "In a broad sense, a use that has a distinct purpose is justified because it furthers the goal of copyright." *Andy Warhol*, 598 U.S. at 531, 143 S.Ct. 1258.

" '[T]ransformativeness' is a matter of degree." *Andy Warhol,* 598 U.S. at 529, 143 S.Ct. 1258. " '[T]he more transformative the new work, the less will be the significance of the other factors.' " *Seltzer*, 725 F.3d at 1176 (quoting *Campbell,* 510 U.S. at 579, 114 S.Ct. 1164). Still, "just because a given use qualifies as 'transformative' does not even mean that defendants prevail under the first factor, much less that they prevail altogether on the fair use defense." Nimmer, § 13.05[A][1][b], at 13-172.

 *18 Apart from the topic of transformativeness, a court cannot ignore that an allegedly-infringing use is "for commercial purposes." *VHT*, 918 F.3d at 742. However, "the first factor does not ask whether a secondary use causes a copyright owner economic harm," though "[t]here is ... a positive association between the [first and fourth] factors: A secondary use that is more different in purpose and character is less likely to usurp demand for the original work or its derivatives." *Andy Warhol*, 598 U.S. at 536 n.12, 143 S.Ct. 1258; *see also id.* at 528, 143 S.Ct. 1258 ("The use of an original work to achieve a purpose that is the same as, or highly similar to, that of the original work is more likely to substitute for, or 'supplant,' the work.") (quoting *Campbell,* 510 U.S. at 579, 114 S.Ct. 1164); *ComicMix*, 983 F.3d at 451 ("[T]he fourth factor, relating to market harm, is influenced by whether the commercial use was transformative.").

That a use is commercial "tends to weigh against a finding of fair use," but "that is all." *Monge*, 688 F.3d at 1172; *see also Andy Warhol*, 598 U.S. at 537, 143 S.Ct. 1258 ("The undisputed commercial character of AWF's use, though not dispositive, 'tends to weigh against a finding of fair use.' ") (quoting *Harper & Row*, 471 U.S. at 562, 105 S.Ct. 2218). It does not end the inquiry, especially because of the recognition that "[t]he more transformative the new work, the less important the other factors, including commercialism." *Kelly*, 336 F.3d at 818.

In the end, the Supreme Court did its best to sum up the analytical process and the aforementioned considerations underlying the first fair use factor in its decision this year in *Andy Warhol*:

> In sum, the first fair use factor considers whether the use of a copyrighted work has a further purpose or different character, which is a matter of degree, and the degree of difference must be balanced against the commercial nature of the use. If an original work and a secondary

use share the same or highly similar purposes, and the secondary use is of a commercial nature, the first factor is likely to weigh against fair use, absent some other justification for copying.

Andy Warhol, 598 U.S. at 532-33, 143 S.Ct. 1258. While the factor's scope, meaning and considerations may (or may not, depending on how you feel about it) be concisely-stated in this fashion, *application* of these concepts in this case is not entirely clear-cut. In fact, the Court believes this is especially true here – it was initially-convinced that Astronics' conduct was not transformative at all, but simply a clear market substitute. However, a closer assessment of Astronics' argument and at least one of the Ninth Circuit precedents in this area ultimately has led it to reach a different conclusion.

Astronics asserts that its software is "highly transformative" under the first factor. It attempts to fit this situation within *Google*, which it describes as holding that "merely allowing customers to use software written for one platform on another was transformative," Docket No. 259, at 2:18-19, while also relying on the Ninth Circuit's *Sony Computer* and *Sega Enterprises* decisions as holding that "copying software to make other software compatible supports a finding of fair use," *id.* at 2:13-15. For its part, one way in which Teradyne attempts to contrast its code in this case from the code at issue in *Google* is because Teradyne created the code in this case "to be proprietary and for use on Teradyne's equipment alone." Docket No. 313, at 11:8-9.[18]

[18] If this point helps Teradyne's case with respect to this fair use factor, it is not so clear that it does so with respect to the overall fair use assessment, for reasons addressed further herein.

There is, however, seemingly a major difference in the "purpose" and "character" of any copying between what occurred in *Google* and what Astronics sought to do here. The alleged infringer in *Google*, Google LLC ("Google"), made use of the Java SE program owned by Oracle America, Inc. ("Oracle"), in building and developing a software platform for mobile devices like smartphones (in Google's case, the "Android"), "the necessary infrastructure for computer programmers to develop new programs and applications" on

a "free and open" platform. 141 S.Ct. at 1190. Java SE had to that point primarily been used to develop new programs for desktop and laptop computers. *See id.* In examining the "purpose" and "character" of copying in that case, the Supreme Court began by noting that Google's use of the API in question "seeks to create new products," "to expand the use and usefulness of Android-based smartphones," presenting a "new product" that "offers programmers a highly creative and innovative tool for a smartphone environment," and – "[t]o the extent that [it] create[d] a new platform that could be readily used by programmers" – reflected a "use [that] was consistent with that creative 'progress' that is the basic constitutional objective of copyright itself." *Google,* 141 S.Ct. at 1203; *see also Andy Warhol*, 598 U.S. at 533 n.8, 143 S.Ct. 1258.

*19 The Court does not read *Google* as supporting an argument that merely using copyrighted material to create a new *product* makes that use "highly transformative." A new product can still simply be nothing more than a market substitute. That is Teradyne's view of the situation presented by Astronics' behavior. As it appears to aptly describe the situation (in figurative terms), Astronics "built its leading competitor's proprietary code into its own private walled garden, and then charged customers admission." Docket No. 313, at 23:17-19.

There is, of course, *some* analogy to what occurred here. Google copied the API in question in that case "only insofar as needed to allow programmers to call upon those tasks [that would be useful in smartphone programs] without discarding a portion of a familiar programming language and learning a new one." *Google,* 141 S.Ct. at 1203. This was described as "reimplementation," allowing "programmers who had learned an existing system [to] put their basic skills to use in a new one." *Id.* The Supreme Court noted that the record demonstrated "numerous ways in which reimplementing an interface can further the development of computer programs," including that "reimplementation of interfaces is necessary if programmers are to be able to use their acquired skills."[19] *Id.* at 1203-04. In addition, points made to the jury in that case included that "[a]llowing reasonable fair use of functional code enables innovation that creates new opportunities for the whole market to grow," whereas "[c]opyright on largely functional elements of software that [have] become an industry standard gives a copyright holder anti-competitive

power." *Id.* at 1204. This led the Supreme Court to conclude that the "purpose and character" of the copying in *Google* was transformative "to the point where this factor too weigh[ed] in favor of fair use." *Id.* at 1204.

[19] In *Google*, the Supreme Court itself described an API – the 11,500 lines of code that were copied in that case were part of an API – as "a tool that 'allow[s] programmers to use ... prewritten code to build certain functions into their own programs, rather than write their own code to perform those functions from scratch." 141 S.Ct. at 1191 (quoting *Oracle Am., Inc. v. Google Inc.*, 750 F.3d 1339, 1349 (Fed. Cir. 2014)). Likewise, in copying declaring code, the Supreme Court described Google as having "copied that portion of the Sun Java API that allowed programmers expert in the Java programming language to use the 'task calling' system that they had already learned." *Id.* at 1193. "Without that copying," the Court explained, programmers [using the Android platform] would need to learn an entirely new system to call up the same tasks." *Id.* at 1194.

The concern for the programmers in *Google* could easily be analogized to Astronics' concern for customers not having their previous TPS efforts going completely to waste (and/or having to confront the risk/expense associated with rewriting or recompiling their TPSs) should they decide to move from a Teradyne DTI to another market participant's (such as Astronics'). Similarly, what Astronics has done here also "enables innovation" while simultaneously limiting the "anti-competitive power" of Teradyne's copyright claims resulting from its functional software.

Still, the Court believes Astronics' actions fall short of what occurred in *Google.* Nevertheless, although the differences with *Google* prevent this Court from concluding that the use here was "highly transformative" and Teradyne's point about Astronics building its "own private walled garden" where it would "charge[ ] customers admission" is a seemingly powerful one, the Court has a difficult time distinguishing this case from the Ninth Circuit's decision in *Sony Computer* in this regard, where the Ninth Circuit concluded that the use at issue was "modestly transformative."

*20 While the Ninth Circuit did refer to the defendant's ultimate product in *Sony Computer* – the "Virtual Game Station" – as creating a "new platform," *Sony Computer*, 203 F.3d at 606, it was not a "new platform" in the sense that concept was considered in *Google.* Rather than creating a new environment that would attract programmers to write and design an untold and unlimited number of new applications, it simply created a way to play games designed for the plaintiff's gaming hardware on a personal computer instead. [20] In other words, it effectively swapped the defendant's product for the plaintiff's.

[20] *Sega Enterprises* appears to have involved a situation that is closer in kind to *Google* than to either this case or *Sony Computer.* Instead of creating a new gaming system that would substitute for the plaintiff's gaming system, the defendant in *Sega Enterprises* sought to make it easier for its – and, conceivably, as an effect, others' – games to be compatible *with* the plaintiff's gaming system. *See Sega Enters.*, 977 F.2d at 1514-15, 1522. Therefore, while Astronics is correct that *Sega Enterprises* concerns the question of "compatibility," it is not so clear that it is the same type or measure of compatibility as was involved in *Sony Computer* or here.

The only distinction the Court can easily discern is that the end-product in *Sony Computer* (the "Virtual Game Station" itself) did not contain the plaintiff's code; the code had merely been copied in the course of reverse-engineering. *See* 203 F.3d at 598. But such "intermediate copying" can itself constitute infringement. *See Sega Enters.*, 977 F.2d at 1518-19. And it was the intermediate copying, not the end-product, that was being examined for fair use in *Sony Computer*, notwithstanding the Ninth Circuit's focus on the end-product in connection with the first fair use factor. *See Sony Computer*, 203 F.3d at 602 ("Connectix admits that it copied Sony's copyrighted BIOS software in *developing* the Virtual Game Station but contends that doing so was protected as a fair use under 17 U.S.C. § 107.") (emphasis added); *id.* at 608 ("[W]e conclude that Connectix's *intermediate copying* of the Sony BIOS *during the course of its reverse engineering of that product* was a fair use under 17 U.S.C. § 107, as a matter of law."). In the end, perhaps this distinction is reason to conclude that the use here – which fairly clearly did include Teradyne's code in Astronics' end-product

– is somewhat less transformative than what was deemed "modestly transformative" in *Sony Computer*, but given *Sony Computer* the Court cannot outright reject Astronics' argued connection between compatibility and transformativeness in the realm of computer programs. If the use in *Sony Computer* was transformative, the Court feels compelled to conclude that Astronics' use here was too.

Of course, the first factor also asks that the Court take into account the commercial nature of that use. There is no question that Astronics stood to profit from its use of Teradyne's code, and that its use was indisputably commercial.

Google went further to explain why the indisputably "commercial" use in that case did not change the ultimate determination on the first factor. It explained that "many common fair uses are indisputably commercial," and that a commercial use in that case was not "dispositive of the first factor, particularly in light of the inherently transformative role that the reimplementation played in the new Android system." *Id.* at 1204; *see also Andy Warhol*, 598 U.S. at 531, 143 S.Ct. 1258 ("The commercial nature of the use is not dispositive. But it is relevant.... [I]t is to be weighed against the degree to which the use has a further purpose or different character.").

*21 In sum, we appear to have before us a defendant's allegedly infringing work that is perhaps somewhat transformative, but seemingly less than "modestly transformative," and that is indisputably commercial. While its commerciality tends to weigh against a finding of fair use, the Court cannot ignore the centrality of the transformativeness issue to consideration of fair use's first factor. The factor might most-appropriately be described as in equipoise, with just a slight lean towards fair use.

b. Nature of the Work

The second fair use factor listed in Section 107 is "the nature of the copyrighted work." 17 U.S.C. § 107(2). "This factor 'recognizes that creative works are closer to the core of intended copyright protection than informational and functional works, with the consequence that fair use is more difficult to establish when the former works are copied.'

" *ComicMix*, 983 F.3d at 455 (quoting *Dr. Seuss Enters., L.P. v. Penguin Books USA, Inc.*, 109 F.3d 1394, 1402 (9th Cir. 1997) ("*Penguin Books*")) (omitting internal quotation marks); *Andy Warhol*, 598 U.S. at 527, 143 S.Ct. 1258 ("[I]n applying the fair use provision, 'copyright's protection may be stronger where the copyrighted material ... serves an artistic rather than a utilitarian function.' ") (quoting *Google,* 141 S.Ct. at 1197); *Seltzer*, 725 F.3d at 1178 (noting that creative work "merit[ed strong protection under this factor"); *SOFA Entm't, Inc. v. Dodger Prods., Inc.*, 709 F.3d 1273, 1279 (9th Cir. 2013) ("An alleged infringer will have a more difficult time establishing fair use when he appropriates a work of [creative] nature."); Nimmer, § 13.05[A][2][a], at 13-182 (commenting that, under the "nature of the copyrighted work" factor, "the more creative a work, the more protection it should be accorded from copying; correlatively, the more informational or functional the plaintiff's work, the broader should be the scope of the fair use defense"); *cf. Harper & Row*, 471 U.S. at 563, 105 S.Ct. 2218 ("The law generally recognizes a greater need to disseminate factual works than works of fiction or fantasy."). *VHT*, 918 F.3d at 743 (" 'Works that are creative in nature are closer to the core of intended copyright protection than are more fact-based works.' ") (quoting *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1016 (9th Cir. 2001)) (omitting internal quotation marks). In addition, where the copyrighted materials have already been published, the factor operates "with less force" in favor of the copyright-holder. *See VHT*, 918 F.3d at 744; *see also ComicMix*, 983 F.3d at 455-56 (quoting *Harper & Row*, 471 U.S. at 554-55, 105 S.Ct. 2218) (noting that "[t]his factor also considers whether the copied work is unpublished," with an " 'unpublished nature' " of a work " 'a key, though not necessarily determinative, factor tending to negate a defense of fair use' ").

This factor has not been considerably influential in the case law. The Ninth Circuit has expressly recognized as much: "As we have recognized in the past, 'this [nature of the copyrighted work] factor typically has not been terribly significant in the overall fair use balancing.' " *Mattel*, 353 F.3d at 803 (quoting *Penguin Books*, 109 F.3d at 1402); *see also ComicMix*, 983 F.3d at 456; Nimmer, § 13.05[A][2][a], at 13-183 ("[T]his second factor more typically recedes into insignificance in the greater fair use calculus.").[21]

21   Astronics reads *Google* as "the Supreme Court ma[king] clear that in software cases, factor two is critical." Docket No. 353, at 7:19-20. Although that is, indeed, the first factor considered in the opinion (organized in that way "[f]or expository purposes," *Google*, 141 S.Ct. at 1201), this Court sees no other indication – and certainly no *overt* evidence – of any belief by the Supreme Court in the overwhelming importance of this factor in such cases. Certainly, if that were true, the Supreme Court could easily have clearly and succinctly expressed the idea/rule.

*22 Astronics asserts that what is at issue here is – as was the case in *Google* – far from the core of what copyright law is designed to protect, while also asserting that the particular code at issue is unoriginal. It also accurately observes that all of the copyrighted works were published, so they do not benefit from any added "force" that unpublished works might receive under this factor.

A computer programmer's "choice of program structure and design may be highly creative and idiosyncratic. However, computer programs are, in essence, utilitarian articles – articles that accomplish tasks." *Sega Enters.*, 977 F.2d at 1524. *Google* itself specifically concerned alleged infringement involving declaring code, not implementing code. *See* 141 S.Ct. at 1191-93, 1201. The decision explained that, distinguished from "many other programs," the declaring code's "use is inherently bound together with uncopyrightable ideas (general task division and organization) and new creative expression (Android's implementing code)." *Id.* at 1202. The Supreme Court concluded that for these (and other) reasons, "the declaring code is, if copyrightable at all, further than are most computer programs (such as the implementing code) from the core of copyright," and that this second factor therefore "point[ed] in the direction of fair use." *Id.*

The Court sees no need to opine on the relative creativity of Teradyne's code for purposes of *this* motion. It is willing to accept the view – again, for purposes of this motion – that there is some measure of creativity in the code Teradyne wrote and Astronics allegedly copied. But that creativity is relatively-minimal, and is already contextualized within a type of copyrighted work that courts consider as functional and/or utilitarian.

Moreover, in its motion, Astronics takes the position that only declaring code is at issue in this litigation. Teradyne responds by asserting that "[t]he parties and their experts dispute ... how much of the code at issue falls within each category of 'declaring code' and 'implementing code,'" Docket No. 313, at 26:4-6, while acknowledging that it is Astronics' position that "to the extent there is any implementing code, 'it is only the function names (*e.g.*, the function names from the declaring code) appearing therein that Teradyne alleges were copied,'" *id.* at 25:18-21 (quoting Docket No. 259, at 10 n.3). In its Reply, Astronics argues that *Google* "is based on the characteristics of the declaring code at issue, not its label, and Teradyne does not dispute that the code here has those same characteristics," while also noting that "*Google* does not hold that implementing code is close to the core of copyright" and taking the position that "the functional nature of all code favors fair use." Docket No. 353, at 6 n.7.

The Court finds Astronics' response on this point persuasive. Whether or not all of the code in question is appropriately characterized as "declaring code" or there is some measure of bleed-over into the category of implementing code, unless Teradyne can point to some copied implementing code that is fundamentally different in its nature, character or attributes than declaring code or what was involved in *Google*, it is not clear that any "dispute" on this point is material/makes a difference. If it is not/does not, the Court sees no need for a jury's consideration of the issue.

*23 With all that in mind, *Google* makes relatively clear that, to the extent this factor provides much weight at all, it leans the analysis in Astronics' favor. Indeed, the Supreme Court explained that the declaring code at issue in *Google* was, "[l]ike other computer programs, ... functional in nature." *Id.* at 1202; *see also id.* at 1198 ("[C]omputer programs ... almost always serve functional purposes."); *Sony Computer*, 203 F.3d at 599 ("Copyrighted software ordinarily contains both copyrighted and unprotected or functional elements."); *id.* at 605 ("If Sony wishes to obtain a lawful monopoly on the functional concepts in its software, it must satisfy the more stringent standards of the patent laws."). Teradyne cannot deny that this is what we have here – computer programs. Moreover, not just computer programs, but *published* computer programs.

In sum, the second factor weighs in favor of fair use.

c. Amount and Substantiality

Section 107's third-listed factor is "the amount and substantiality of the portion used in relation to the copyrighted work as a whole." 17 U.S.C. § 107(3). This third factor "looks to the quantitative amount and qualitative value of the original work used in relation to the defendant's justification for the use." *SOFA Entm't*, 709 F.3d at 1279.

> "While wholesale copying does not preclude fair use per se, copying an entire work militates against a finding of fair use." However, the extent of permissible copying varies with the purpose and character of the use. If the secondary user only copies as much as is necessary for his or her intended use, then this factor will not weigh against him or her.

Kelly, 336 F.3d at 820-21 (quoting *Worldwide Church of God v. Philadelphia Church of God, Inc.*, 227 F.3d 1110, 1118 (9th Cir. 2000)). "The inquiry under this factor is a flexible one, rather than a simple determination of the percentage of the copyrighted work used." *Monge*, 688 F.3d at 1179.

Astronics notes that there at least appears to be [22] even less code here than in *Google*, while also asserting that "the portion copied is reasonable in light of Astronics' transformative purpose of achieving compatibility." Docket No. 259, at 2:26-27; *see also* Docket No. 353, at 14:2-3 ("[W]hatever the number of lines may be, Astronics' use was reasonable in light of its transformative purpose."). At least conceivably, this factor, in particular, could vary depending on the copyrighted work in question. However, as noted previously, Astronics has taken a "blunderbuss" approach to this motion – all or nothing. Still, it is not clear that such an approach is problematic considering what the Court can already determine about the copyrighted works collectively without a more fine-toothed analysis.

[22]   Teradyne observes in its Opposition brief that Astronics did not include any purported undisputed facts in its Local Rule 56-1 statement on the topic of the number of lines of code or the proportion of copied code to the overall code. Ordinarily, this would likely be considered a substantial problem

under applicable summary judgment procedures. *See, e.g.*, C.D. Cal. L.R. 56-1. But this again raises a potential distinction in how those procedures should be applied in the context of a fair use determination. Insofar as it is the Court that will ultimately decide whether or not to apply, or to find a, fair use, and if the number of lines of code/proportion of copied code is, in fact, ascertainable and undisputed, what would be the purpose of preventing a further submission on this particular point (assuming the Court found the topic potentially meaningful) notwithstanding Astronics' initial arguable failure in this regard? Do we need to go to a lengthy and expensive trial before a jury just to come up with a hard number/ proportion that the Court – not the jury – would then consider in making its fair use determination.

*24 Responding to Teradyne's assertion in its Opposition brief that Astronics' use of some of the works was "more egregious" than others, Astronics asserts that Teradyne has not explained how this would change the weight of the factors and falls back on its assertion that it used Teradyne's code for compatibility purposes. [23] Astronics also demonstrates why, even accepting the additional lines of code Teradyne believes should be included in comparison, it hardly moves the needle at all on the overall number and still produces a number far below what was at issue in *Google*. *See* Docket No. 353, at 14:11-21. Teradyne should be prepared to respond to this point at oral argument.

[23]   Teradyne argues that, in order to accomplish its purpose, it was not "necessary" for Astronics to copy certain parts of Teradyne's code that it, in fact, copied. However, the Court would conclude that any excess/unnecessary copying here was *de minimis*, at most. Moreover, at least certain courts have concluded that "the law does not require that the secondary artist may take no more than is necessary," *Cariou v. Prince*, 714 F.3d 694, 710 (2d Cir. 2013), a statement that is not, in fact, at odds with the passage quoted from *Kelly* at the beginning of this section.

Though there may be a basis for finding *Google* to-some-degree distinguishable on the topic of one or more other fair use factors, if Astronics is correct on (or even in the

rough ballpark of) the number of lines of code in question, here that decision would all-but-dictate this Court's view on this factor. The Supreme Court determined that it was appropriate to compare the 11,500 lines of copied declaring code to "the several million lines that Google did not copy" because the copied lines were "inseparably bound to th[e] task-implementing lines" – indeed, the "purpose" of the declaring code was "to call them up" – and because Google had "copied those lines not because of their creativity, their beauty, or even (in a sense) because of their purpose," but "because programmers had already learned to work with the Sun Java API's system." *Google*, 141 S.Ct. at 1204-05. "[T]he declaring code was the key that [Google] needed to unlock the programmers' creative energies." *Id.* at 1205. The Supreme Court concluded that this factor weighed in favor of fair use.

As the parties have described the situation underlying their dispute, there appears to be little meaningful difference here. Astronics did not copy Teradyne's lines of code "because of their creativity, their beauty, or even (in a sense) because of their purpose," but because it would enable ATE customers (as noted *supra*, analogous to programmers in *Google*) to be able to continue to run their own designed TPSs on different DTIs, should they so choose. Moreover, in terms of qualitative value, it bears repeating that it appears that it is declaring code that is heavily (if not exclusively) involved here, not implementing code. As such, Teradyne would be hard-pressed to make an argument that Astronics' copying was substantial in relation to its purpose in a qualitative sense.

In addition, the Supreme Court also noted that the "substantiality" factor would "generally weigh in favor of fair use where, as here, the amount of copying was tethered to a valid, and transformative, purpose." *Google*, 141 S.Ct. at 1205. As noted above, if the use was transformative in *Sony Computer*, the Court believes that the use here must also be considered transformative (though, perhaps, to a lesser degree).

Although there is perhaps still room for further discussion on this factor, at this point it appears to clearly favor a fair use finding.

d. Effect on Potential Market or Value

*25 The final factor listed in Section 107 is "the effect of the use upon the potential market for or value of *the copyrighted work.*" 17 U.S.C. § 107(4) (emphasis added). "The fourth factor requires courts to consider the secondary use's impact on the market for *the original work* and the market for derivative works, including if the defendant's actions became 'unrestricted and widespread.' " *SOFA Entm't*, 709 F.3d at 1280 (emphasis added) (quoting *Campbell*, 510 U.S. at 590, 114 S.Ct. 1164); *see also Harper & Row*, 471 U.S. at 569, 105 S.Ct. 2218 ("Isolated instances of minor infringements, when multiplied many times, become in the aggregate a major inroad on copyright that must be prevented.") (omitting internal quotation marks); *VHT*, 918 F.3d at 744 ("To defeat a fair use defense, 'one need only show that if the challenged use should become widespread, it would adversely affect the *potential* market for *the copyrighted work.*") (second emphasis added); Nimmer, § 13.05[A][4], at 13-195 (noting that the fourth factor "poses the issue of whether unrestricted and widespread conduct of the sort engaged in by the defendant (whether in fact engaged in by the defendant or by others) would result in a substantially adverse impact on the potential market for, or value of, the plaintiff's present work"). Some decisions have called this factor the "most important factor." *Harper & Row*, 471 U.S. at 566, 105 S.Ct. 2218 ("This last factor is undoubtedly the single most important element of fair use."); *Fisher v. Dees*, 794 F.2d 432, 437 (9th Cir. 1986).

Some courts have also tied the analysis of this factor to that performed in connection with the first factor. For instance, in *Kelly* the Ninth Circuit instructed that "[a] transformative work is less likely to have an adverse impact on the market of the original than a work that merely supersedes the copyrighted work." *Kelly*, 336 F.3d at 821. Indeed, both the Supreme Court and the Ninth Circuit have recently recognized a connection between the first and fourth factors. *See Andy Warhol*, 598 U.S. at 536 n.12, 143 S.Ct. 1258; *ComicMix*, 983 F.3d at 451.

Astronics argues that its LDE and DFL software do not substitute for Teradyne's copyrighted works because Astronics' software cannot run TPSs on Teradyne's equipment and because there is "no evidence of a market for licensing Teradyne's API declarations for inter-vendor compatibility." Docket No. 259, at 3:4-5. Astronics also relies on what it sees as the public benefit to allowing the military to continue

running its already-written TPSs on whatever ATE it chooses from the market.

The Court would agree with Astronics that the existence of its LDE and DFL software does not appear to directly impact the market for Teradyne's copyrighted works because the LDE and DFL software does not run on Teradyne's equipment (the only equipment where Teradyne's copyrighted works have been programmed [24]). At most, it might impact the market for Teradyne's *equipment*, but that *equipment* is not the subject of Teradyne's copyrights, *i.e.* not "the copyrighted work" in Section 107(4)'s statutory terms. Astronics backs up what could be considered this plain-language point by citing the Sixth Circuit's decision in *Lexmark International Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 545 (6th Cir. 2004), as a case explaining that the market for equipment *containing* the software program would be the wrong market to examine. Teradyne does not cite or address *Lexmark* at all. While Teradyne indeed believes that the appropriate market to examine is the market for equipment and that there is therefore a "dispute on that issue," Docket No. 313, at 16:28-17:2, the correct market definition would seem to be an issue for the Court to resolve, not a jury (and one that, again, seemingly is answered by reference to the plain language of Section 107). [25]

[24] Indeed, as noted earlier, according to Teradyne it "created its code to be proprietary and for use on Teradyne's equipment alone." Docket No. 313, at 11:8-9. Connected to this point, Defendant also argues that there is no evidence that Plaintiff had ever licensed any of the copyrighted works. Even if this had not been true, however, the Supreme Court also has at least suggested, in *Google*, that lost licensing opportunities for the copyright-holder might be viewed as a "circularity" that is a "given" in every fair use case, and therefore not all that influential of a consideration. *See Google*, 141 S.Ct. at 1207.

[25] Teradyne cites the Ninth Circuit's decision in *De Fontbrune v. Wofsy*, 39 F.4th 1214 (9th Cir. 2022), *cert. denied*, ––– U.S. ––––, 143 S.Ct. 1084, 215 L.Ed.2d 395 (2023), for the proposition that there is a presumption of market harm where a use is *both* non-transformative and commercial. *See id.* at

1226. Even if that is a correct reflection of the law – Astronics contests that it is, relying on *Google* (though the use in *Google* was determined to be "inherently transformative," 141 S.Ct. at 1204) – the Court has already determined that, considering *Sony Computer*, Astronics' use here was indeed transformative in some measure.

*26 As Astronics' argument also suggests, "a potential loss of revenue is not the whole story" when it comes to consideration of this factor. *Google*, 141 S.Ct. at 1206. The Supreme Court has confirmed that, in assessing this factor, a court at least sometimes "must take into account the public benefits the copying will likely produce." *Id.* In fleshing out that concern, it asked first "[a]re those benefits, for example, related to copyright's concern for the creative production of new expression?" *Id.* It is not so clear that, in this case, they are, at least to any considerable extent (except to the extent the Court would conclude that Astronics' use is minimally transformative). [26] But then it also asked "[a]re [those benefits] comparatively important, or unimportant, when compared with dollar amounts likely lost (taking into account as well the nature of the source of the loss)?" *Id.* Here, there is good reason to conclude that those public benefits: 1) are comparatively important; 2) have the knock-on benefit of promoting competition; and 3) are compared to "the nature of the source of the loss" that resides in highly-functional, borderline-creative work.

[26] However, to the extent the benefits are seen in terms of a tie between increased opportunities for creativity and increased competition (as discussed further *infra*), at least some benefits *would*, in a roundabout way, appear to be tied to a concern about the creative production of new expression. *See Google*, 141 S.Ct. at 1208 (citing *Sega Enterprises* for the parenthetical quote "An attempt to monopolize the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression").

Without taking account of the possibility that a "public benefits" consideration might be most-appropriately limited to benefits that are tied to the purpose of the nation's copyright laws (as would be suggested by the first question asked in *Google* as quoted in the preceding paragraph), *compare Google*, 141 S.Ct. at 1208 (referencing "the risk

of creativity-related harms to the public") *with Sega Enters.,* 977 F.2d at 1523 ("Public benefit need not be direct or tangible, but may arise because the challenged use serves a public interest."), Astronics presents a fairly strong argument that the public benefits in this case are, from at least one perspective (discussed *infra*), far more significant than those the Supreme Court credited in *Google.* In that decision, the Court concluded that "to allow enforcement of Oracle's copyright ... would risk harm to the public." *Google,* 141 S.Ct. at 1208. Specifically, this was because "[g]iven the costs and difficulties of producing alternative APIs with similar appeal to programmers, allowing enforcement here would make of the Sun Java API's declaring code a lock limiting the future creativity of new programs," with "Oracle alone ... hold[ing] the key." *Id.* at 1208; *see also Sega Enters.,* 977 F.2d at 1523 (recognizing as a "public benefit" that the alleged infringer's actions "has led to an increase in the number of independently designed video game programs offered for use with the Genesis console," with this "growth in creative expression" being "precisely" what the Copyright Act "was intended to promote"). Though it acknowledged that this might result in a blow to Oracle's profitability in this respect, the Court noted that the profits in question might flow from "creative improvements, new applications, and new uses *developed by users who have learned to work with that interface,*" not directly from Oracle's own efforts. *Id.* (emphasis added). As a result, such a "lock" would "interfere with, not further, copyright's basic creativity objectives." *Id.*

The public benefit Astronics has identified here is the interest in customers – specifically, the U.S. Military – avoiding the risk and added expense that would be associated with having to entirely rewrite/recompile TPSs if it elects to use ATE from a manufacturer/supplier other than Teradyne. Although Teradyne insists that the risks/expenses are variable, it does not dispute that the down-side risk from errors in the rewriting/recompiling process can be catastrophic. The Court is not aware of any authority that prevents it from considering this type of public benefit in relation to the fourth fair use factor.

*27 Teradyne asserts that the true public benefit/interest here must be the protection of valid copyrights. However, as Astronics points out in response, if that were the only or preeminent concern, the fair use doctrine itself – *i.e.,* the whole reason for the public benefit inquiry – would be toothless. It would also run directly contrary to the Supreme

Court's comment in *Google* that "to allow enforcement of Oracle's copyright ... would risk harm to the public." *Google,* 141 S.Ct. at 1208.

In addition, because copyright enforcement in this case – as in *Google* – would result in *the copyright holder* being presented a "lock" to which only it holds a "key," a case could be made here that far from *closing off* a market to Teradyne, a fair use determination here actually *creates* a market for everyone (without excluding Teradyne).[27] There is of course no guarantee that Astronics will be the only company to ever benefit from a fair use determination favoring it in this case. Other marketplace participants, current and/or future, could do what Astronics did here,[28] ultimately resulting in customers – such as the United States military – benefitting from increased choice and price-competition. Teradyne effectively preventing this from happening by virtue of its customers being "locked-in" to its devices through their reliance on TPSs written for those devices is not something this country's copyright laws are designed to achieve. *See Sony Computer,* 203 F.3d at 607 ("Sony understandably seeks control over the market for devices that play games Sony produces or licenses. The copyright law, however, does not confer such a monopoly."); *Sega Enters.,* 977 F.2d at 1523 ("The *Harper & Row* Court found a use that effectively usurped the market for the copyrighted work by supplanting that work to be dispositive. However, the same consequences do not and could not attach to a use which simply enables the copier to enter the market for works of the same type as the copied work.") (omitting internal citation); *id.* at 1523-24 ("[A]n attempt to monopolize the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression and cannot constitute a strong equitable basis for resisting the invocation of the fair use doctrine."); *cf. Google,* 141 S.Ct. at 1207 ("[T]he jury also heard evidence that Sun foresaw a benefit from the broader use of the Java programming language in a new platform like Android, as it would further expand the network of Java-trained programmers."); *id.* at 1208 ("[T]he reimplementation of a user interface allows creative new computer code to more easily enter the market."). In other words, while "wholesale copying aimed at creating a market substitute is presumptively unfair," *Google,* 141 S.Ct. at 1200 (parenthetically citing *Sony Corp. of Am. v. Universal City Studios, Inc.,* 464 U.S. 417, 451, 104 S.Ct. 774, 78 L.Ed.2d 574 (1984)), Astronics' behavior is not simply

"creating a market substitute," but at least arguably – if permitted – "creating a market."

27   In this sense, Teradyne's "private walled garden" metaphor, discussed earlier, works *against* its interests here.

28   As part of its argument that Astronics had no different "purpose" underlying its copying than Teradyne itself does with respect to its copyrighted works (in support of a conclusion that such use was not "transformative"), Teradyne asserts that Astronics' " 'purpose' ... is to allow [Astronics], and no one else, to directly compete with Teradyne by selling the same type of product to the same customers." Docket No. 313, at 22:19-21. But, whatever impact such a purpose might have on transformativeness (in the Court's opinion, not a sizable one), it is unclear why Teradyne's competition point would necessarily be true. If Astronics' use here is determined to be a fair use, then other ATE manufacturers/suppliers could – even if they have not yet already – make their DTIs compatible with TPSs their customers have already written for use on Teradyne DTIs.

 *28   In sum, this factor – one of the two most-important – also appears to fairly clearly favor a fair use finding/conclusion.

e. Conclusion re Section 107 Factors

On this motion, based upon the evidentiary showing and arguments made, three of the four fair use factors appear to fairly clearly support a fair use finding, and one is close-to-neutral though likely also very slightly favoring that same conclusion. Here, the Court finds it somewhat useful (and

reassuring) to look back again at, and quote from, the Ninth Circuit's decision in *Sega Enterprises*:

> "[O]ur result may seem incongruous at first blush. To oversimplify, the record establishes that Accolade, a commercial competitor of Sega, engaged in wholesale copying of Sega's copyrighted code as a preliminary step in the development of a competing product. However, the key to this case is that we are dealing with computer software ...."

Sega Enters., 977 F.2d at 1527. With the exception of the reference to "wholesale copying," this appears to be an accurate description of what occurred here as well. But any other result than the one reached here would "defeat[ ] the fundamental purpose of the Copyright Act – to encourage the production of original works by protecting the expressive elements of those works while leaving the ideas, facts, and functional concepts in the public domain for others to build on." *Id.* "The equitable considerations involved weigh on the side of public access." *Id.*

2. Conclusion

The Court's tentative conclusion is that Astronics has successfully demonstrated that its use of Teradyne's copyrighted material constitutes a fair use under 17 U.S.C. § 107, and that there are no facts that are both disputed and material that would require a jury's involvement before the Court can make that determination. Such a conclusion would seemingly mean there would be no need to reach the other three summary judgment/partial summary judgment motions on-file. At oral argument, the parties are free to attempt to convince the Court otherwise with respect to any of the foregoing.

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