



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/677,019	11/14/2012	David Cooper	2012P-023-US1/ALBRP733USA	8342

42981 7590 10/24/2018
ROCKWELL AUTOMATION / AT&W
ATTENTION: Linda H. Kasulke, E-7F19
1201 SOUTH SECOND STREET
MILWAUKEE, WI 53204

EXAMINER

SCHEUNEMANN, RICHARD N

ART UNIT	PAPER NUMBER
----------	--------------

3624

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

10/24/2018

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

hmckee@thepatentattorneys.com
raintellectualproperty@ra.rockwell.com
docket@thepatentattorneys.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID COOPER, KEVIN CHAO, KEITH CHAMBERS,
RICHAR SZE, CRISLER MOOR, BRANDON E. HENNING, and
SURYANARAYANA MURTHY BOBBA

Appeal 2017-007768
Application 13/677,019¹
Technology Center 3600

Before JEREMY CURCURI, HUNG H. BUI, and JOSEPH LENTIVECH,
Administrative Patent Judges.

BUI, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants seek our review under 35 U.S.C. § 134(a) from the Examiner’s Final Rejection of claims 1–20. Final Act. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.²

¹ According to Appellants, ROCKWELL AUTOMATION TECHNOLOGIES, INC., is the real party in interest. App. Br. 2.

² Our Decision refers to Appellants’ Appeal Brief (“App. Br.”) filed March 4, 2016; Examiner’s Answer (“Ans.”) mailed September 1, 2016; Final Office Action (“Final Act.”) mailed November 3, 2015; and the original Specification (“Spec.”) filed November 14, 2012.

STATEMENT OF THE CASE

Appellants' invention relates to "a Manufacturing Execution System (MES) . . . that leverages industry-specific workflows to process business requests." Abstract. According to Appellants, "an MES system can include a library of generalized activity sets corresponding to executable control and/or business workflows. These activity sets can be classified according to industry, process, and any suitable subcategories, thereby allowing industry-specific rules or standards to be encoded in the activity sets When a message defining a business goal or objective is received by the MES system from a business-level system (*e.g.*, an ERP system), the message can be analyzed and matched to an activity set by the MES system, which can then execute the selected activity set to facilitate satisfaction of the business objective." Spec. ¶ 10.

Claims 1, 12, and 19 are independent. Claim 1 is illustrative of Appellants' invention, as reproduced below:

1. A Manufacturing and Execution System (MES), comprising:

a processor; and

a memory communicatively coupled to the processor, the memory having stored therein computer-executable instructions, comprising:

an activity set data store configured to store a plurality of generalized activity sets that respectively define workflows capable of implementation by one or more MES systems, wherein the generalized activity sets do not comprise control instructions executable on industrial automation equipment to implement the generalized activity set;

a mapping component configured to:

receive business objective data that specifies a business objective with respect to a manufacturing activity in an industrial environment,

identify a plurality of industrial automation equipment in the industrial environment capable of meeting the business objective, and

identify a generalized activity set, of the plurality of generalized activity sets, that defines a workflow determined to be capable of achieving the business objective using a particular set of industrial automation equipment of the identified plurality of industrial automation equipment in the industrial environment; and

a translation component configured to:

translate the identified generalized activity set to control instructions executable in the particular set of industrial automation equipment in the industrial environment to implement the generalized activity set,

install the control instructions in the particular set of industrial automation equipment in the industrial environment, and

execute the workflow defined by the identified generalized activity set using the control instructions in the particular set of industrial automation equipment in the industrial environment.

App. Br. 39 (Claims App.).

EXAMINER'S REJECTIONS & REFERENCES

- (1) Claims 1, 10, 12, and 19 stand rejected under 35 U.S.C. § 112(b) as being indefinite. Final Act. 7–9.
- (2) Claims 1–20 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to an abstract idea. Final Act. 5–7.

(3) Claims 1, 3–8, 10, 12, 14–26, and 18–20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sudarshan et al. (US 2010/0191579 A1; published on July 29, 2010 (“Sudarshan”)) and Moor et al. (US 2009/0037378 A1; published on February 5, 2009 (“Moor”)). Final Act. 9–27.

(4) Claims 2, 13, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sudarshan, Moor, and Thurner (US 2005/0160412 A1; published July 21, 2005). Final Act. 28–31.

(5) Claims 9 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sudarshan, Moor, and Moyne et al. (US 7,974,723 B2; issued on July 5, 2011 (“Moyne”)). Final Act. 31–33.

DISCUSSION

35 U.S.C. § 112(b): Claims 1, 10, 12, and 19

In rejecting claims 1, 12, and 19, the Examiner finds “[t]he activity sets” recited “as being implemented on the equipment, but they are not ‘executable on industrial automation equipment’” to be “contradictory in nature” and, as such, indefinite. Final Act. 8. According to the Examiner, “[i]t is unclear how activity sets that do not comprise control instructions could be translated into control instructions that could be implemented on industrial automation equipment.” Ans. 2. The Examiner also finds the phrase “a particular set of industrial automation devices” is unclear as to “what constitutes a particular set of industrial automation devices.” Final Act. 8. According to the Examiner, “[i]t is unclear what would distinguish an ‘activity set’ from ‘control instructions.’” Ans. 3. With respect claim 10,

the Examiner finds the term “an industry specific rule” in the context of “business objective data” indefinite. Final Act. 8–9.

Appellants argue the claims clearly recite that “generalized activity sets do not comprise the control instructions executable on industrial automation equipment, and that the identified generalized activity set is translated to the control instructions that are executable on the particular set of industrial automation equipment” and, as such, “there is no contradiction in the claim language.” App. Br. 12–13. Appellants also argue “[i]t is clear that the particular set of industrial automation equipment is specifically usable for achieving the business objective with the workflow in the identified generalized activity” and paragraphs 55–59, 61, and 72 of the Specification provide examples of industry specific rules. App. Br. 13–14.

We agree with Appellants. “The legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope.” *In re Warmerdam*, 33 F.3d 1354, 1361 (Fed. Cir. 1994). “[T]he definiteness of the language employed must be analyzed — not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art.” *In re Moore*, 439 F.2d 1232, 1235 (CCPA 1971).

The Specification describes “an activity set” as “a series of activities or a workflow for achieving a particular business goal (*e.g.*, fulfilling a customer order, minimizing plant energy consumption during indicated hours, *etc.*).” Spec. ¶ 41. According to the Specification, “the activity set can define the activities in terms of both control and business functions to be performed, the order of operation for the steps, the designated machines or devices required to perform each step, or any other information required to

fully define the control activity represented by the activity set.” Spec. ¶ 41. In addition, “the activity sets can [also] define interactions to be performed between the MES system and the ERP system relative to the defined sequence of control instructions.” Spec. ¶ 42. Once a business objective is defined, a suitable activity set is selected from a library of activity sets 314, shown in Figure 3, and selected activity set 312 is passed to translation component 308 for translation into a set of control instructions 316 for deployment to appropriate controllers or devices of the control system (*e.g.*, sequential function chart, ladder logic, structured text, function block code, *etc.*). Spec. ¶ 45. “The instructions can comprise any conceivable type of code used to process input signals read into the controller and to control output signals generated by the controller, including but not limited to ladder logic, sequential function charts, function block diagrams, structured text, or other such platforms. The instructions can also take the form of output signals generated by the MES system for triggering sequences already stored on the controllers.” Spec. ¶ 69.

In light of the Specification, we agree with Appellants that a skilled artisan would understand that: (1) “there is no contradiction in the claim language;” (2) “a particular set of industrial automation devices” refers to applicable controllers or devices of the control system; and (3) the industry specific rules refer to different activity sets categorized according to industry as described in paragraph 55 of Appellants’ Specification. App. Br. 12–14. As such, we do not sustain the Examiner’s section 112(b) rejection of claims 1, 10, 12, and 19.

35 U.S.C. § 101: Claims 1–20

In *Alice Corp. v. CLS Bank International*, 134 S.Ct. 2347 (2014), the Supreme Court reiterates an analytical two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 79 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S.Ct. at 2355. The first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts,” such as an abstract idea. *Id.* If the claims are directed to eligible subject matter, the inquiry ends. *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016).

If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims “individually and ‘as an ordered combination’” to determine whether there are additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S.Ct. at 2355 (citing *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to “search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (citing *Mayo*, 566 U.S. at 72–73).

In rejecting claims 1–20 under 35 U.S.C. § 101, the Examiner determines these claims are directed to an abstract idea of “executing workflows” and includes limitations that are “essentially steps for data gathering and manipulation intended to execute a workflow” and analogous to those claims discussed in *Ultramercial*. Final Act. 6–7 (quoting

Ultramercial, Inc. v. Hulu, LLC, 772 F.3d 709 (Fed. Cir. 2014) (Holding that “[t]he process of receiving copyrighted media, selecting an ad, offering the media in exchange for watching the selected ad, displaying the ad, allowing the consumer access to the media, and receiving payment from the sponsor of the ad all describe an abstract idea, devoid of a concrete or tangible application.”). The Examiner also finds the steps recited in the claims such as “receiving,” “identifying,” and “translating,” are merely mental steps that could also be performed in the human mind or by a human using a pen and paper. *Ans. 5*; *see also CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011).

The Examiner also determines

the claims do not recite an improvement to another technology or technical field, nor do they recite an improvement to the functioning of the computer itself. The claims require no more than a generic computer (a computer readable medium in independent claim 19) to perform generic computer functions that are well understood, routine and conventional activities previously known to the industry. The use of a computer or software to manipulate data is well known and routine in the field of manufacturing and operations management.

Final Act. 7.

Alice/Mayo—Step 1 (Abstract Idea)

Turning to the first step of the *Alice* inquiry, Appellants do not dispute the Examiner’s determination that claims 1–20 are directed to an abstract idea of “executing workflows.” Instead, Appellants argue the claims are not directed to an abstract idea because these claims recite the “novel and non-obvious improvements over existing technological systems (e.g., existing automated Manufacturing Execution systems, existing business systems,

existing automation control systems, etc.)” i.e., “a particular computerized industrial automation workflow identification, industrial automation equipment specific translation, and implementation centric problem” — “a clear improvement over existing computerized technologies.” App. Br. 15–18.

Appellants’ arguments are not persuasive. Appellants’ Specification describes “[a] Manufacturing Execution System (MES) . . . that leverages industry-specific workflows to process business requests.” *See* Abstract. According to Appellants, “an MES system can include a library of generalized activity sets corresponding to executable control and/or business workflows. These activity sets can be classified according to industry, process, and any suitable subcategories, thereby allowing industry-specific rules or standards to be encoded in the activity sets. . . . When a message defining a business goal or objective is received by the MES system from a business-level system (*e.g.*, an ERP system), the message can be analyzed and matched to an activity set by the MES system, which can then execute the selected activity set to facilitate satisfaction of the business objective.” Spec. ¶ 10. Embodiments of Appellants’ Specification, as shown in Figure 3, describe basic steps of: (1) “identifying . . . a plurality of industrial automation devices in an industrial environment capable of meeting the business objective;” (2) “selecting . . . a generalized activity set, from a set of stored generalized activity sets, that defines a workflow;” (3) “identified plurality of industrial automation devices in the industrial environment;” (4) “translating . . . the identified generalized activity set to control instructions executable in the particular set of industrial automation devices in the industrial environment;” (5) “installing . . . the control instructions in the

particular set of industrial automation equipment in the industrial environment;” and (6) “executing . . . the workflow defined by the identified generalized activity set using the control instructions installed in the particular set of industrial automation devices in the industrial environment” as recited in Appellants’ process claim 12 (and similarly recited in claims 1 and 18).

As recognized by the Examiner, “[t]he claims merely recite steps to translate a workflow from one type of workflow to another type of workflow through a ‘translation component.’” Ans. 4. These steps are also abstract processes of receiving, processing, analyzing, and translating data of a specific content, i.e., “executing a workflow.” Information, as such, is intangible, and data analysis and translation are abstract ideas. *See, e.g., Microsoft Corp. v. AT & T Corp.*, 550 U.S. 437, 451 n.12 (2007); *Alice*, 134 S. Ct. at 2355; *Parker v. Flook*, 437 U.S. 584, 589, 594–95 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972). “[C]ollecting information and analysis, including when limited to particular content (which does not change its character as information),” and “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more,” are “within the realm of abstract ideas.” *Electric Power Group*. 830 F.3d at 1353–54; *see also Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1349 (Fed. Cir. 2015); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014); *CyberSource* 654 F.3d at 1370.

As further recognized by the Examiner (Ans. 5), the steps recited in the claims 1, 12, and 19 such as “receiving,” “identifying,” and “translating” are merely mental steps that could also be performed in the human mind or

by a human using a pen and paper. *See CyberSource*, 654 F.3d at 1372–73 (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under [section] 101.”); *see also In re Comiskey*, 554 F.3d 967, 979 (Fed. Cir. 2009) (“[M]ental processes—or processes of human thinking—standing alone are not patentable even if they have practical application.”); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“Phenomena of nature,[] *mental processes*, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”) (emphasis added). Additionally, mental processes remain unpatentable even when automated to reduce the burden on the user of what once could have been done with pen and paper. *CyberSource*, 654 F.3d at 1375 (“That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.”).

Thus, we agree with the Examiner that claims 1–20 are directed to an abstract idea of “executing a workflow” which is considered as a fundamental business practice and “certain methods of organizing human activities” as identified in *Alice* and *Bilski v. Kappos*, 561 U.S. 593 (2010) — concepts that courts have characterized as abstract ideas.³ Such activities are squarely within the realm of abstract ideas.

³ *See* (1) “*The 2014 Interim Guidance on Patent Subject Matter Eligibility*,” published on Dec. 16, 2014 (79 Fed. Reg. 74618); (2) “*July 2015 Update: Subject Matter Eligibility*” (July 2015 Update); (3) “*May 2016 Subject Matter Update*” (May 4, 2016 Memorandum) at <https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility>; and (4) USPTO June 2017: *Interim Eligibility Guidance Quick Reference Sheet* identifying abstract idea examples of “certain methods of organizing human activity.” *See In re*

Alice/Mayo—Step 2 (Inventive Concept)

Appellants argue, like *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014), the claims contain an “inventive concept” that is “novel over existing technologies” and “do not recite a commonplace business method aimed at processing business information, applying a known business process to the particular technological environment of the Internet, or creating or altering contractual relations using generic computer functions and conventional network operations.” App. Br. 15–18. Appellants also argue claims are not directed an abstract idea because these claims are “computer-centric,” i.e., “are directed to the industrial automation centric problem centric problem of workflow identification, industrial automation equipment specific translation, and implementation which has specific industrial network and industrial automation equipment centric implications.” App. Br. 18–20 (quoting *Intellectual Ventures I LLC v. Capital One Financial Corp.*, 8-14-cv-00111 (MDD May 12, 2015, Order) (Lupo, Special Master); and *Intellectual Ventures I LLC v. Symatec Corp.*, 1-10-cv-01067 (DED April 22, 2015, Order) (Stark, J.)).

Appellants’ arguments are not persuasive. At the outset, we note that: (1) “the concept of inventiveness is distinct from that of novelty;” and (2) “[t]he inventiveness inquiry of [section] 101 should therefore not be confused with the separate novelty inquiry of [section] 102 or the obviousness inquiry of § 103.” *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.* 841 F.3d 1288, 1311 (Fed. Cir. 2016). We may even assume that the

Bilski, 545 F.3d 943, 972 (Fed. Cir. 2008); see also *Bilski v. Kappos*, 561 U.S. 593 (2010) and *Alice*, 134 S.Ct. 2361 (Concurrence from Justice Sonia Sotomayor joined by Justices Ruth Bader Ginsburg and Stephen G. Breyer.).

techniques claimed are “[g]roundbreaking, innovative, or even brilliant,” but that is not enough for eligibility. *Association for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013), *accord buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1352 (Fed. Cir. 2014). Nor is it enough for subject-matter eligibility that claimed techniques be novel and nonobvious in light of prior art, passing muster under 35 U.S.C. §§ 102 and 103. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 89–90 (2012); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (“[A] claim for a new abstract idea is still an abstract idea. The search for a [section] 101 inventive concept is thus distinct from demonstrating [section] 102 novelty.”); *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1315 (Fed. Cir. 2016) (same for obviousness).

Moreover, we note Appellants’ reliance on: (1) *Intellectual Ventures I LLC v. Capital One Financial Corp.*; and (2) *Intellectual Ventures I LLC v. Symantec Corp., California Institute of Technology* is misplaced because: (1) district court decisions are not binding legal authority on the Board; and (2) the district court’s holdings in these cases are not analogous to Appellants’ claims directed to “executing a workflow.”

According to *Alice*, the second step is to “search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Alice*, 134 S.Ct. at 2355 (quoting *Mayo*, 566 U.S. at 72–73). The Federal Circuit cases on point include: (1) *DDR Holdings*; and (2) *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.* 841 F.3d 1288 (Fed. Cir. 2016), both of which involved business-centric inventions.

In *DDR* and *Amdocs*, the Federal Circuit opted to bypass *Alice* step 1 in favor of step 2. In particular, the Federal Circuit found *DDR*'s claims contain an “inventive concept” under *Alice* step 2 because *DDR*'s claims: (1) do not merely recite “the performance of some business practice known from the pre-Internet world” previously disclosed in *Bilski* and *Alice* but instead; (2) provide a technical solution to a technical problem unique to the Internet, *i.e.*, a “solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *DDR*, 773 F.3d at 1257. Likewise, the Federal Circuit also found *Amdocs*' claims contain a sufficient “inventive concept” because like *DDR*, *Amdocs*' claims “entail[] an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases)” and “improve the performance of the system itself.” *Amdocs*, 841 F.3d at 1300, 1302.

Under current Federal Circuit precedent, an “inventive concept” under *Alice* step 2 can be established by showing, for example, that the patent claims:

(1) provide a technical solution to a technical problem unique to the Internet, *e.g.*, a “solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks” (*see DDR*, 773 F.3d at 1257);

(2) transform the abstract idea into “a particular, practical application of that abstract idea,” *e.g.*, “installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user” (*see BASCOM Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352, 1350 (Fed. Cir. 2016)); or

(3) “entail[] an unconventional technological solution ([e.g.,] enhancing data in a distributed fashion) to a technological problem ([e.g.,] massive record flows [that] previously required massive databases)” and “improve the performance of the system itself” (*see Amdocs*, 841 F.3d at 1300, 1302).

In this case, however, we find no element or combination of elements recited in Appellants’ claims 1, 12, and 19 that contains any “inventive concept” or adds anything “significantly more” to transform the abstract concept (i.e., “executing a workflow”) into a patent-eligible application. *Alice*, 134 S.Ct. at 2357. As discussed *supra*, we are not persuaded the added computer elements such as a processor and memory in the context of a MES system can transform the abstract idea into a patent eligible invention. As our reviewing court has observed, “after *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible.” *DDR*, 773 F.3d at 1256 (citing *Alice*, 134 S.Ct. at 2358).

Additional Argument

Appellants argue that the claims do not seek to tie up or preempt an entire field, i.e., an abstract idea of “executing workflows.” App. Br. 21–22. However, this argument is not persuasive because, although “preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). “Where a patent’s claims are deemed only to disclose patent ineligible subject matter” under the *Alice/Mayo* framework, “preemption concerns are fully addressed and made moot.” *Id.*

Because Appellants' claims 1, 12, and 19 are directed to a patent-ineligible abstract concept and does not recite something "significantly more" under the second prong of the *Alice* analysis, we sustain the Examiner's rejection of claims 1–20 under 35 U.S.C. § 101.

35 U.S.C. § 103(b): Claims 1–20

In support of the obviousness rejection of claim 1 and, similarly, claims 12 and 19, the Examiner finds Sudarshan teaches, *inter alia*: "an activity set data store configured to store a plurality of generalized activity sets that respectively define workflows capable of implementation by one or more MES systems, wherein the generalized activity sets do not comprise control instructions executable on industrial automation equipment to implement the generalized activity set." Final Act. 10 (citing Sudarshan ¶¶ 37, 57) (emphasis omitted). The Examiner also finds Sudarshan and Moor also teach a translation component to "translate the identified generalized activity set to control instructions executable in the particular set of industrial automation equipment in the industrial environment to implement the generalized activity set." Final Act. 11–12 (citing Sudarshan ¶¶ 31, 37, 41; Moor ¶¶ 1, 2, and 21–23).

Appellants acknowledge Sudarshan teaches a MES system to execute a workflow using libraries of activity sets to perform various functions, including: project prioritization, strategic segmentation, product mix allocation, risk assessment, sensitivity analytics, portfolio optimization, and portfolio NPV evaluation. App. Br. 25 (citing Sudarshan ¶ 57). However, Appellants argue the combination of Sudarshan and Moor does not teach or suggest: (1) "wherein the generalized activity sets do not comprise control

instructions executable on industrial automation equipment to implement the generalized activity set;” and (2) the MES system configured to “translate the identified generalized activity set to control instructions executable in the particular set of industrial automation equipment in the industrial environment to implement the generalized activity set” as recited in claims 1, 12, and 19. App. Br. 23–33. According to Appellants, the workflow functions described by Sudarshan are not equivalent to Appellants’ claimed translation component configured to translate the activity set to control instructions. App. Br. 25.

Appellants’ arguments are not persuasive. Instead, we find the Examiner has provided a comprehensive response to Appellants’ arguments supported by evidence. Ans. 5–7. As such, we adopt the Examiner’s findings and explanations provided therein. *Id.* At the outset, we note claim terms are given their broadest reasonable interpretation consistent with the Specification. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Under the broadest reasonable interpretation, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

The term “activity set” is broadly defined as “a series of activities or a workflow for achieving a particular business goal (*e.g.*, fulfilling a customer order, minimizing plant energy consumption during indicated hours, *etc.*).” Spec. ¶ 41. Similarly, “control instructions 316 can comprise analog, digital, or networked control outputs directed to the appropriate controllers.” Spec. ¶ 45.

As recognized by the Examiner, “workflows and libraries” include data that is equivalent to the generalized activity set using a MES and these workflows must be inherently translated into control instructions. Ans. 6 (citing Sudarshan ¶¶ 3, 31). Moreover, Moor teaches a MES system, shown in Figures 1–3, configured to evaluate, modify and/or output modified information (form) based on actions and/or activities or sets of such actions and/or activities (e.g., steps in a workflow), shown in Figure 9. According to Moor, “[t]he actions and/or activities (or sets) can be tasks or other procedures, including work procedures or processes” and “[t]he activities or set of activities can, likewise be part of a service” and “can be a configured component that performs an MES function.” Moor ¶¶ 25–26.

For these reasons, we are not persuaded of Examiner error. Accordingly, we sustain the Examiner’s obviousness rejection of independent claim 1, 12, and 19 and dependent claims 2, 4–11, 13–14, 15, 17, and 18, which Appellants do not argue separately.

With respect to claims 3, 16, and 20, Appellants argue the combination of Sudarshan and Moor does not teach or suggest “bind[ing] a set of parameters in the activity set to specific controller tags.” App. Br. 33–34. We disagree and adopt the Examiner’s explanation provided on page 7 of the Examiner’s Answer, i.e., Moor teaches mapping “controller tags” to data to control, via controllers. *See* Moor ¶¶ 2, 5, and 52. As such, we also sustain the Examiner’s obviousness rejection of dependent claim 3, 16, and 20.

CONCLUSION

On the record before us, we conclude Appellants have demonstrated the Examiner erred in rejecting claims 1, 10, 12, and 19 under 35 U.S.C. § 112(b), but not claims 1–20 under 35 U.S.C. § 101 and 35 U.S.C. § 103(a).

DECISION

As such, we reverse the Examiner’s Final Rejection of claims 1, 10, 12, and 19 under 35 U.S.C. § 112(b). However, we affirm the Examiner’s Final Rejection of claims 1–20 under 35 U.S.C. § 101 and 35 U.S.C. § 103(a).

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner’s decision rejecting claims 1–20. *See* 37 C.F.R. § 41.50(a)(1).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED