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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* GREGORY J. BOSS, KARYN T. CORNELI,  
BRIAN D. GOODMAN, and RICK A. HAMILTON II

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Appeal 2018-003891<sup>1</sup>  
Application 13/733,418  
Technology Center 3600

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Before: MURRIEL E. CRAWFORD, MICHAEL W. KIM, and  
PHILIP J. HOFFMANN, *Administrative Patent Judges*.

KIM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal from the final rejection of claims 1–6, 8–12, and 14–18. We have jurisdiction to review the case under 35 U.S.C. §§ 134 and 6.

The invention relates generally to replicating subsets of documents using filtering or artificial intelligence, and providing the documents for viewing. Spec. ¶ 2.

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<sup>1</sup> The Appellants identify International Business Machines Corp. as the real party in interest. Appeal Br. 2.

Independent claim 1 is illustrative:

1. A method comprising:

storing electronic data in a server;

receiving a request to obtain a subset of the electronic data;

filtering the electronic data on a transaction per transaction basis based on characteristics of the electronic data;

automatically determining a replication priority based on a user's calendar events by determining a current time and looking up the user's calendar events within a predetermined upcoming period of time and further based on a usage frequency corresponding to each of a plurality of queries used by the user;

in response to the request to obtain electronic data, automatically replicating the filtered electronic data on the transaction per transaction basis using the automatically determined replication priority based upon the user's calendar events within the predetermined upcoming period of time and the usage frequency corresponding to each of the plurality of queries used by the user; and

providing the filtered replicated electronic data over a network for viewing of the filtered replicated electronic data.

The Examiner rejected claims 1–6, 8–12, and 14–18 under 35 U.S.C. § 101 as directed to ineligible subject matter in the form of abstract ideas.

The Examiner rejected claims 1–6, 8, 9, 11, 12, and 14–18 under 35 U.S.C. § 103(a) as unpatentable over Ionescu (U 7,499,958 B1, iss. Mar. 3, 2009) and Roecker et al. (Carsten Roecker, Victor Bayon, Maral Memisoglu, Norbert Streit, “Context-Dependent Email Notification Using Ambient Displays and Mobile Devices”, Proc. 2005 Int’l Conf. on Active Media Tech. 137–38, November 15, 2005. *See* <https://ieeexplore.ieee.org/document/1505288>. (“Roecker”).

The Examiner rejected claims 10 and 12 under 35 U.S.C. § 103(a) as unpatentable over Ionescu, Roecker, and ShamRao (US 2003/0172044 A1, pub. Sept. 11, 2003).

We REVERSE.

## ANALYSIS

### Patentable subject matter

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[I]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court’s two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is “directed to.” *See Alice*, 573 U.S. at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and

mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that “[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 187; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula.”). Having said that, the Supreme Court also indicated that a claim “seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.” *Id.* (citing *Benson* and *Flook*); *see, e.g., id.* at 187 (“It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”).

If the claim is “directed to” an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221 (quotation marks omitted). “A

claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

The PTO recently published revised guidance on the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Guidance”). Under the Guidance, we first look to whether the claim recites:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* Manual of Patent Examining Procedure (“MPEP”) § 2106.05(a)–(c), (e)–(h)).

*See* Guidance, 84 Fed. Reg. at 52–55. Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

- (3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or
- (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

*See* Guidance, 84 Fed. Reg. at 56.

*“recites a judicial exception”*

Under our Guidance, we determine whether the claim recites a judicial exception. The Examiner finds claim 1 is “an abstract idea involving storing data, receiving a request for a subset of the data, filtering

the data, replicating the data by performing pattern analysis and providing the data.” Final Act. 6.

Independent method claim 1 recites “storing data,” “receiving a request to obtain a subset of the [stored] data,” “filtering the [stored] data,” “determining a replication priority based on a user’s calendar events . . . and further based on a usage frequency corresponding to each of a plurality of queries used by the user,” “replicating the filtered [stored] data . . . using the automatically determined replication priority,” and “providing” the data for viewing.

Of those limitations, we do not need to consider further, in the “directed to” portion of the analysis, the “storing data,” “receiving . . . data,” or “providing” the data for viewing limitations. Specifically, the “storing” and “receiving” limitations are pre-cursors to the other limitations. For example, for the “filtering the [stored] data” limitation, the data cannot be filtered if it was not first received and then stored in some manner. For the “providing” the data for viewing limitation, merely displaying unaltered information does not provide meaningful assistance in determining what the claim is directed to. *Trading Technologies Int’l v. IBG LLC*, --- F.3d ---, ---, 2019 WL 1907236 \*4 (Fed. Cir. 2019) (noting that at *Alice* step one, “the claims here fail because arranging in-formation along an axis does not improve the functioning of the computer, make it operate more efficiently, or solve any technological problem.”).

Of the remaining limitations, we determine that the “filtering” and “determining” limitations are subsumed within the “replicating” limitation. Specifically, the “replicating” limitation refers to both the “filtered [stored] data” and the “automatically determined replication priority.” Accordingly,

the concept of independent claim 1 concerns the limitation of “replicating the filtered [stored] data . . . using the automatically determined replication priority.” In practice, the Specification informs us that this “replicating” involves making an exact copy (i.e., replica) across a computer network data that is stored on a server. Spec. ¶ 4 (“replication and delivery to a remote device”); *see also* Spec. ¶ 26 (“The term ‘replication’ or variants thereof can imply either synchronization or one way (push or pull) data transfer; although, in the case of some conventions data is transferred and then removed from servers (POP3 Mail) (which is included in the scope of this invention).”). These definitions are consistent with relevant dictionary definitions. The Authoritative Dictionary of IEEE Standard Terms 965 (7th ed., IEEE Press 2000) (Attached as Exhibit A) (replication is defined as “[t]he process by which copies of entries are created and maintained.”). This is roughly commensurate with the Examiner’s determination that independent claim 1 is, essentially, directed to “replicating the data by performing pattern analysis.”

The Examiner provides several reasons that this recited “replicating” is an abstract idea. First, the Examiner asserts that the claimed “use of pattern analysis” is similar to the use of “well-known random analysis techniques” in *Bilski*. Final Act. 5. The assertion is inapposite, as “well-known random analysis techniques” do not address the recited “replicating” *in response to* those techniques.

The Examiner asserts further that the claim involves processes that a human can perform mentally. Final Act. 6. We agree to an extent. Specifically, we agree that the limitations concerning “filtering” data and “determining” a replication priority based on examining a user’s calendar

events and the frequency of queries made by a user, are steps that could be performed mentally by a human, for example, by observing data, calendars, and query records, and making an evaluation, opinion, or judgment based on those observations.

We are unclear, though, how replication of data could be performed mentally. In particular, while certainly when the user is observing the data, a mental impression is formed, the Examiner has not explained sufficiently how selective replication of those mental impressions would occur. And while perhaps the replication could theoretically be performed using pen and paper, as noted above, “replicating” is making an exact copy, and while some information could certainly be copied using pen and paper, we do not discern that a human performing making an exact copy, using pen and paper alone, is feasible.

More generally, the Examiner determines that “replicating the data by performing pattern analysis” is a form of organizing human activity. The Examiner provides the analogy of secretarial functions, as follows:

[P]roviding the filtering in order to weed out non-important documents is nothing more than a secretarial function long performed prior to the invention of a computer. Notably the computer is merely tallying the number of times a particular replication query is performed (0042 of disclosure “. . . the system increments a key value for the query in order to learn the usage frequency of this query”) and merely duplicates what is performed by a human secretary in learning the habits of his/her employer over time. Similarly the tying of document retrieval to a calendar event (0037–0038 of disclosure) in which a meeting with particular parties is upcoming which may involve leaving the office is again the mere duplication of what is performed by a human secretary in learning the habits of his/her employer over time and prioritizing based on that learned knowledge.

Ans. 5. In support of this analogy, the Examiner relies principally on *BASCOM Global Internet Services. v. AT&T Mobility, LLC*, 827 F.3d 1341 (Fed. Cir. 2016). Ans. 4–5.

There are several issues with the Examiner’s analysis. First, “to weed out non-important documents” concerns “filtering,” which is a portion of, but not the same as, “replicating,” as, to our understanding, “weeding out” does not involve making an exact copy. The same analysis applies to “a human secretary . . . learning the habits of his/her employer over time.”

Second, the Examiner is correct that the Specification discloses that “the computer is merely tallying the number of times a particular replication query is performed.” But that disclosure does not account for the fact that independent claim 1 also recites performing the replication itself.

Third, the Examiner has not explained adequately the relevance of “tying of document retrieval to a calendar event” to the issue at hand. At a glance, it would seem that “document retrieval” involves retrieving a pre-existing document, not replicating it.

Finally, we are unclear how such a “document retrieval” is a “mere duplication of what is performed by a human secretary in learning the habits of his/her employer over time and prioritizing based on that learned knowledge.” As best as we can understand, the retrieval of a calendar entry of a prioritized event apparently serves as a reminder of that event, in addition to the human secretary reminding the individual of that same event. We are unclear, though, how this involves a replication, for example, of the calendar entry. In order to be a replication, the human secretary, having done the prioritization analysis, would have to take the document of the calendar entry, *make a physical copy of that document*, and then return that

document to storage. That is not what is advanced by the Examiner, and we discern that such an analogy stretches credulity.

We note that the Examiner's citation to *BASCOM* is appropriate, in that the fact patterns are very similar. Independent claim 22 at issue in *BASCOM* reads as follows:

22. An ISP server for filtering content forwarded to controlled access network account generating network access requests at a remote client computer, each network access request including a destination address field, said ISP server comprising:

a master inclusive-list of allowed sites;

a plurality of sets of exclusive-lists of excluded sites, each controlled access network account associated with at least one set of said plurality of exclusive-lists of excluded sites; and

a filtering scheme, said filtering scheme allowing said network access request if said destination address exists on said master inclusive-list but not on said at least one associated exclusive-list, whereby said controlled access accounts may be uniquely associated with one or more sets of excluded sites.

Essentially, the principal difference between the claims at issue here and in *BASCOM*, is that instead of “replicating” based on the filtering, the claims in *BASCOM* “allow said network access request” based on the filtering, and *BASCOM* instructs that the particular type of filtering claimed is a “longstanding, well-known method of organizing human behavior.” 827 F.3d at 1348. That characterization is consistent with the Guidance, where “allowing said network access request” based on the filtering is one of certain method of organizing human activity.

Specifically, such actions could be considered “managing personal behavior or relationships or interactions between people” in the form of “following rules or instructions.” Essentially one person has been told to

allow, or not allow, network access to a certain group of people, which is determined by that person following a set of “rules or instructions.”<sup>2</sup>

Alternatively, such actions could also be considered “commercial or legal interactions” in the form of “legal obligations” or “business relations,” in that the presence of such “legal obligations” or “business relations” may allow, or not allow, network access.

The issue here, however, is that unlike “allowing said network access request,” as in *BASCOM*, the present application’s “replicating the data by performing pattern analysis” does not have a similar human analogue for the reasons stated above. Similarly, it does not fit into any of the grouping set forth in the Guidance, in particular, it does not fit into any of the listed “[c]ertain methods of organizing human activity.” Accordingly, when considered as a whole, independent claim 1 does not recite an abstract idea.

*“integrate[d] . . . into a practical application”*

Although we find above that independent claim 1, when considered as a whole, does not recite an abstract idea, as noted above, we acknowledge that independent claim 1 does recite certain steps, such as “filtering” and “determining,” that are mental processes that can practically be performed in the human mind. Such an acknowledgement does not alter our ultimate conclusion, however, that we are persuaded the Examiner erred in determining that independent claim 1 is not statutory subject matter. Even if we focus our above analysis only on the “filtering” and “determining” limitations, we determine that these mental processes are integrated into a practical application, because independent claim 1, when considered as a

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<sup>2</sup> Real world examples include administrative assistants screening calls or mailroom employees screening certain mailings (e.g., ads).

whole, involves “replicating the data by performing pattern analysis,” which is an improvement to the functioning of a computer. MPEP § 2106.05(a). To that end, *BASCOM* is again instructive.

In *BASCOM*, the Federal Circuit held the following:

As explained above, construed in favor of [the patent owner] as they must be in this procedural posture, the claims of the '606 patent do not preempt the use of the abstract idea of filtering content on the Internet or on generic computer components performing conventional activities. The claims carve out a specific location for the filtering system (a remote ISP server) and require the filtering system to give users the ability to customize filtering for their individual network accounts.

*BASCOM*, 827 F.3d at 1352.

Similarly, here, independent claim 1 recites that the “filtering” and “determining” is performed in conjunction with the server, and they give users the ability to customize the information they are provided. This is consistent with the Specification, which describes problems concerning downloading of electronic data using slow communications methods and narrow windows of time in which the transfers could be done, which constitute network capacity and time obstacles to performing a complete replication of requested data. Spec. ¶¶ 4–6.

The Specification describes that there are some replication related solutions, such as where “Lotus Notes replication has the ability to front load the replication queue with smaller documents first so that one large document does not hold many smaller documents ‘hostage’ until the larger one is downloaded.” Spec. ¶ 7. Even there, however, “in current technologies, all of the data is still [eventually] transferred even if only one piece of data is required or desired by the user.” Spec. ¶ 8.

By “replicating the data by performing pattern analysis,” the consequences of such a problem are reduced, as follows:

if user “A” has a customer meeting at 11:00 AM with four customers, “B”, “C”, “D” and “E”, and the current time is 10:30 AM, the replication will automatically prioritize replication so that any emails or documents from “B”, “C”, “D” and “E” and subject related to the customer meeting are prioritized and sent to the user prior to any other emails or documents.

Spec. ¶ 37.<sup>3</sup> Thus, even if independent claim 1 is considered to a recite mental processes, under Prong Two of Revised Step 2A of our Guidance, the claim is not considered directed to an abstract idea because, consistent with the reasoning in *BASCOM*, the claim is directed to an improvement to the functioning of a computer, thus integrating the abstract idea, if any, into a practical application.<sup>4</sup>

#### *Independent Claim 14*

Independent claim 14 essentially embodies the method of claim 1 in a computer program on media that allows execution of the code. As such, the above analysis also applies to independent claim 14.

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<sup>3</sup> The technical improvements identified in the Specification are of a type and nature that readily measurable, similar to those in *Enfish, LLC v. Microsoft Corp.*, 722 F.3d 1327 (Fed. Cir. 2016) (“Moreover, our conclusion that the claims are directed to an improvement of an existing technology is bolstered by the specification’s teachings that the claimed invention achieves other benefits over conventional databases, such as increased flexibility, faster search times, and smaller memory requirements.”).

<sup>4</sup> As we determine that independent claim 1 is not directed to an abstract idea at *Alice* step one (Step 2A, Prongs 1 and 2 of the Guidance), there is no need to continue to *Alice* step two (Step 2B of the Guidance).

*Conclusion*

For these reasons, we do not sustain the rejection of claims 1–6, 8–12, and 14–18 under 35 U.S.C. § 101.

*Prior Art Rejections*

In the Final Action, the Examiner rejected claims 1 and 14 as obvious over Ionescu and Roecker. Final Act. 19. The Examiner finds most elements of claims 1 and 14 disclosed by Ionescu, including that “Ionescu discloses automatically replicating the filtered electronic data on the transaction per transaction basis (13:42–14:8) based on a user’s calendar events by determining a current time, looking up the user’s calendar events within the predetermined upcoming period of time.” Final Act. 20. The Examiner, however, finds “Ionescu does not explicitly disclose automatically determining a replication priority using learned information obtained by performing pattern analysis based on a user’s calendar events by determining a current time and looking up the user’s calendar events within a predetermined upcoming calendar events within a predetermined upcoming period of time,” which the Examiner finds in Roecker. *Id.*

As an initial matter, we note that the rejection itself fails to demonstrate any consideration of the claim language about determining replication priority “based on a usage frequency corresponding to each of a plurality of queries used by the user.” However, two months later, the Examiner did find in an Advisory Action that “Ionescu discloses that replication priority is based on usage frequency with regard to a plurality of queries (5:49–56, 6:1–14, 6:53–61, 7:8–11, 8:34–37, 8:40–51, 11:12–24, 11:38–47, 12:54–57, 13:18–22, claim 1). Therefore the existing 103(a) rejection would be replaced by a rejection of anticipation under section

102.” Advisory Act. 2 (Aug. 24, 2017). More specifically, the Examiner asserts that the § 103(a) rejection was replaced by a § 102(e) rejection over Ionescu. Answer 3.

The Appellants argue persuasively that none of the above-cited sections of Ionescu, advanced in the Advisory Action, actually discloses the claim language “based on a usage frequency corresponding to each of a plurality of queries used by the user.” Appeal Br. 20–22; *see also* Reply Br. 6–11. The Examiner responds by explaining that Ionescu discloses determining a replication priority. Answer 9–11 (citing Ionescu 11:12–24). But the Examiner does not respond to the arguments about queries. *Id.*

After our review of the cited sections that the Examiner purports to disclose determining a replication priority based on a number of queries, we fail to discern any description that corresponds to the claim language at issue. Although Ionescu is concerned with replicating data (Ionescu 3:12–16), none of the sections of Ionescu cited in the Advisory Action addresses a number queries used by a user as a basis for replication priority, as claimed. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

Here, the Examiner has not established that Ionescu discloses “automatically determining a replication priority based on a user’s calendar events by determining a current time and looking up the user’s calendar events within a predetermined upcoming period of time and further based on a usage frequency corresponding to each of a plurality of queries used by the user,” as recited in each of independent claims 1 and 14. For this reason, we

do not sustain the rejection of claims 1 and 14, nor of the dependent claims rejected as anticipated by Ionescu. Because the Examiner has not established that either of Roecker or ShamRao remedy the deficiencies of Ionescu, we also do not sustain the obviousness rejection of claims 10 and 12 over Ionescu, Roecker, and ShamRao.

#### DECISION

We REVERSE the rejection of claims 1–6, 8–12, and 14–18 under 35 U.S.C. § 101.

We REVERSE the rejection of claims 1–6, 8, 9, 11, 12, and 14–18 under 35 U.S.C. § 102(e).<sup>5</sup>

We REVERSE the rejection of claims 10 and 12 under 35 U.S.C. § 103(a).

#### REVERSED

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<sup>5</sup> Even if the claims actually stand rejected under 103(a), the outcome would be the same, as the Examiner does not rely on Roecker for the indicated limitation of independent claim 1.

<i>Notice of References Cited</i>	Application/Control No. 13/733,418	Applicant(s)/Patent Under Patent Appeal No. 2018-003891	
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U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
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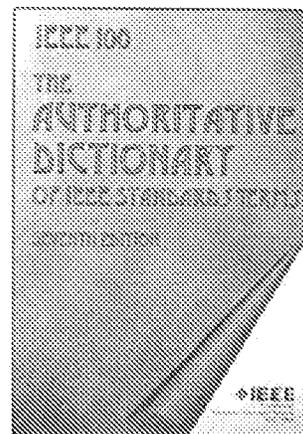
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	U	IEEE 100, The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition, Page 965			
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- repetitive peak forward current (semiconductor)** The peak value of the forward current including all repetitive transient currents. (IA) [12]
- repetitive peak line voltage (thyristor)** The highest instantaneous value of the line voltage including all repetitive transient voltages, but excluding all nonrepetitive transient voltages. (IA/IPC) 428-1981w
- repetitive peak OFF-state current (semiconductor)** The maximum instantaneous value of the OFF-state current that results from the application of repetitive peak-OFF-state voltage. (IA) [12]
- repetitive peak OFF-state voltage** The maximum instantaneous value of the OFF-state voltage that occurs across a thyristor, including all repetitive transient voltages, but excluding all nonrepetitive transient voltages. (IA/ED) 223-1966w, [62], [46], [12]
- repetitive peak ON-state current (semiconductor)** The peak value of the ON-state current including all repetitive transient currents. (IA) [12]
- repetitive peak reverse current (semiconductor)** The maximum instantaneous value of the reverse current that results from the application of repetitive peak reverse voltage. (IA) [12]
- repetitive peak reverse voltage (I) (semiconductor rectifiers)** The maximum instantaneous value of the reverse voltage, including all repetitive transient voltages but excluding all nonrepetitive transient voltages, that occurs across a semiconductor rectifier cell, rectifier diode, or rectifier stack. See also: semiconductor rectifier stack; principal voltage-current characteristic; rectification. (IA/EL) 59-1962w, [12], [62], [46], 223-1966w  
(2) (reverse-blocking thyristor) The maximum instantaneous value of the reverse voltage which occurs across the thyristor, including all repetitive transient voltages, but excluding all non-repetitive transient voltages. (IA) [12]
- repetitive peak reverse-voltage rating (rectifier circuit element)** The maximum value of repetitive peak reverse voltage permitted by the manufacturer under stated conditions. See also: average forward current rating. (IA) 59-1962w, [62], [12]
- repetitive surge and follow-current withstand** The number of surges of specified voltage and current amplitudes and wave-shapes that may be applied to a device without causing degradation beyond specified limits. The repetitive surge and follow-current withstand ratings apply to a device connected to an ac line of specified characteristics and to pulses applied at specified rates and phase angles. The effects of any cumulative heating that may occur are included. (SPD/PE) C62.62-2199
- replaceable unit** A collection of one or more parts considered as a single part for the purposes of replacement and repair due to physical constraints of the unit under test (UUT). (ATLAS) 1232-1995
- replacement part** A part for use in place of an existing component of switching equipment. (SWG/PE) C37.30-1971a
- replay** See: reversible execution.
- replicate** One of multiple aliquants of a sample. (N3) N42.23-1993
- replica temperature relay** A thermal relay whose internal temperature rise is proportional to that of the protected apparatus or conductor, over a range of values and durations of over-heating. (SWG/PE) C37.100-1992
- replication (I) (A)** Theoretically, repetition of an experiment in exact detail. (B) Obtaining similar results from similar experiments. (T&D/PE) 539-1990  
(2) The process by which copies of entries are created and maintained. (C/PA) 1328.2-1993w, 1326.2-1993w, 1224.2-1993w, 1327.2-1993w
- reply (I) (transponder operation) (navigation aids)** A radio-frequency signal or combination of signals transmitted as a result of an interrogation. (AES/GCS) 172-1983w  
(2) Messages from the printer to the host. Synonym: response. (C/MM) 1284.1-1997  
(3) The response sent from a target to an initiator indicating that the target has successfully or unsuccessfully executed the process specified by the command originally sent from the initiator to the target. (C/MM) 1284.4-2003  
(4) See also: transaction completion. (C/MM) 1212.1-1993
- replying agent** An agent that participates in a transfer operation with the bus owner. (C/MM) 1296-1987a
- reply phase** The final phase of a transfer operation that consists of one or more consecutive data and/or status transfers on the parallel system bus. (C/MM) 1296-1987a
- report** The data objects/elements sent to a master device from slave devices. Used only in connection with slave devices. A slave device may parse requests for objects that it cannot generate or report. (PE/SUB) 1379-1997
- report-by-exception** The reporting of data (e.g., from RTU to master station) only when the data either changes state (e.g., for a status or digital input point) or exceeds a predetermined deadband (e.g., for an analog input point). (SUB/PE) C37.1-1994
- Report Generation Language** A problem-oriented language designed for file processing and report creation. (C) 610.13-1993w
- reporting period** A period assumed to be one year unless otherwise stated. (PE/T&D) 1386-1998
- reporting period time** The duration of the reporting period (equals service time plus outage time). (PE/PEE) 859-1987w
- report standard** A standard that describes the characteristics of describing results of engineering and management activities. (C) 610.12-1990
- report writer (I)** A query language that can produce formatted reports using data from a database or other files. (C) 610.5-1990w  
(2) A software tool or programming language used specifically for generating reports. (C) 610.13-1993w
- repository (A)** A collection of all software-related artifacts (e.g., the software engineering environment) belonging to a system. (B) The location/format in which such a collection is stored. (C/SE) 1219-1998
- repository of last resort** In a hierarchical memory (or cache-based) environment, a storage location that "owns" the only, or last remaining, copy of sharable data. Note: It may be a unique source, an ultimate destination, or simply a "safe" repository of data that may not be invalidated, unless action is taken to preserve a copy of that data at some higher level in the memory (or cache) hierarchy. In a cache-only Fibrebus+ system (e.g., one where even the main DRAM storage is also designed as a hardware cache), the repository of last resort begins life as the binding of an address to a physical location in one of the caches, along with the creation of the data by initialization, a copy from some higher level in the memory hierarchy, or by its arrival from some I/O device. This data may migrate around the system, and be owned by different caches at different times, provided no less than one copy of that data is maintained somewhere. A repository of last resort may end its life by an explicit instruction to "destroy" the data by migration to a highest level in the memory (or cache hierarchy), or by transfer of ownership through some I/O device to another system, storage device, or display. (C/BA) 10857-1994
- representation (I)** A likeness, picture, drawing, block diagram, description, or symbol that logically portrays a physical,