

742 F.3d 998  
United States Court of Appeals,  
Federal Circuit.

SOLVAY S.A., Plaintiff–Appellant,  
v.  
HONEYWELL INTERNATIONAL INC., Defendant–Appellee.

No. 2012–1660.

|  
Feb. 12, 2014.

### Synopsis

**Background:** Owner of **patent** claiming improvement to method of making hydrofluorocarbon (HFC) filed infringement suit against competitor. The United States District Court for the District of Delaware, [Sue L. Robinson, J.](#), [886 F.Supp.2d 396](#), entered judgment on jury verdict of invalidity and denied owner's motion for judgment as matter of law or for new trial. Owner appealed.

**Holdings:** The Court of Appeals, [Dyk](#), Circuit Judge, held that:

[1] owner waived review of claim that district court erroneously construed claim, and

[2] process invented by Russian engineers for making HFC was made in United States when American company successfully performed process.

Affirmed.

[Newman](#), Circuit Judge, dissented and filed opinion.

West Headnotes (13)

[1] **Patents** ➡ [Inventorship and Priority](#)

**Patent** is invalid if claimed invention was made in this country by another inventor before **patent's** priority date. [35 U.S.C.A. § 102\(g\)](#).

[12 Cases that cite this headnote](#)

[2] **Patents** ➡ [Conception of invention](#)

**Patents** ➡ [Demonstration of utility;tests](#)

For purposes of establishing prior invention, “conception” is formation, in inventor's mind, of definite and permanent idea of complete and operative invention, and “reduction to practice” requires that claimed invention work for its intended purpose. [35 U.S.C.A. § 102\(g\)](#).

[8 Cases that cite this headnote](#)

[3] **Patents** 🔑 [Suppression or concealment of invention](#)

To establish prior art, it is necessary that invention not be suppressed, abandoned, or concealed. 35 U.S.C.A. § 102(g).

[1 Cases that cite this headnote](#)

[4] **Patents** 🔑 [Reduction of Invention to Practice](#)

In order for invention to qualify as prior art, although conception may occur in another country, work constituting reduction to practice must be performed in United States by inventor or on his behalf. 35 U.S.C.A. § 102(g).

[5 Cases that cite this headnote](#)

[5] **Patents** 🔑 [Presentation and Reservation in Lower Court of Grounds of Review](#)

Owner of **patent** claiming improvement to method of making hydrofluorocarbon (HFC) waived appellate review of claim that district court erroneously construed claim requiring that HFCs be removed from reaction mixture permanently so that they were not recycled back into reactor, where owner did not ask district court to modify claim construction or accompanying jury instruction to require “isolating” to mean “isolating permanently,” or request any modification or clarification of claim construction.

[1 Cases that cite this headnote](#)

[6] **Patents** 🔑 [De novo review in general](#)

Claim construction is question of law reviewed de novo.

[1 Cases that cite this headnote](#)

[7] **Patents** 🔑 [Chemicals](#)

Term “isolating,” as used in **patent** claiming improvement to method of making hydrofluorocarbon (HFC) by isolating HFC-245fa from reaction mixture by drawing off HFC-245fa and HCl in gaseous phase as each HFC-245fa and HCl was being formed, meant separating, and therefore did not preclude additional steps that could occur after initial isolation.

[Cases that cite this headnote](#)

[8] **Patents** 🔑 [Chemicals](#)

Term “comprises,” as used in **patent** claiming improvement to method of making hydrofluorocarbon (HFC), which comprises carrying out reaction at temperature and under pressure at which HFC-245fa was gaseous and isolating HFC-245fa from reaction mixture by drawing off HFC-245fa and HCl in gaseous phase as each HFC-245fa and HCl was being formed for additional steps, indicated that claim was open-ended and allowed for additional steps.

[2 Cases that cite this headnote](#)

**[9]** **Patents** 🔑 **Inventorship and Priority**

No inurement can arise from third party's unwarranted and hostile use of another's invention, but express request or direction is not required to establish inurement.

[Cases that cite this headnote](#)

**[10]** **Patents** 🔑 **Chemicals**

Process invented by Russian engineers for making hydrofluorocarbon (HFC) was made in United States when American company successfully performed process, and thus subsequent American **patent** claiming improvement to method of making HFC was invalid as anticipated by prior art, where Russian engineers authorized company personnel to practice invention and specifically contemplated that they would do so. [35 U.S.C.A. § 102\(g\)](#).

[Cases that cite this headnote](#)

**[11]** **Patents** 🔑 **In general;utility**

[US Patent 5,202,509](#), [US Patent 5,574,192](#). Cited as Prior Art.

[2 Cases that cite this headnote](#)

**[12]** **Patents** 🔑 **In general;utility**

[US Patent 5,763,706](#). Cited.

[Cases that cite this headnote](#)

**[13]** **Patents** 🔑 **In general;utility**

[US Patent 6,730,817](#). Construed and Ruled Invalid.

[Cases that cite this headnote](#)

[Go to Markman Construed Terms](#)

**Attorneys and Law Firms**

**\*999** [Adam L. Perlman](#), Williams & Connolly LLP, of Washington, DC, argued for plaintiff-appellant. On the brief were [Glenn J. Pfadenhauer](#), [Stanley E. Fisher](#), [Kristin A. Feeley](#), and [Christopher C. Kennedy](#).

[Gregg F. Locascio](#), Kirkland & Ellis LLP, of Washington, DC, argued for defendant-appellee. With him on the brief were [J. John Lee](#), [William H. Burgess](#) and [Anders P. Fjellstedt](#). Of counsel was [Laura Burson](#), of Los Angeles, California.

Before [RADER](#), Chief Judge, [NEWMAN](#), and [DYK](#), Circuit Judges.

## Opinion

Opinion for the court filed by Circuit Judge [DYK](#).

Dissenting opinion filed by Circuit Judge [NEWMAN](#).

[DYK](#), Circuit Judge.

Plaintiff Solvay S.A. (“Solvay”) appeals from a judgment of the United States District Court for the District of Delaware in favor of defendant Honeywell International (“Honeywell”). The district court held that asserted claim 1 of Solvay’s U.S. [Patent](#) No. 6,730,817 (“the #817 [patent](#)”) was invalid under 35 U.S.C. § 102(g)(2) (2006). This was so because engineers working at the Russian Scientific Center for Applied Chemistry (“RSCAC”) first conceived the invention, which was reduced to practice in this country by Honeywell personnel pursuant to the RSCAC’s instructions, and did not abandon, suppress, or conceal it.

## BACKGROUND

### I

[1] [2] [3] The question at the heart of this appeal is when an invention conceived by a foreign inventor and reduced to practice in the United States qualifies as prior art \*1000 under § 102(g)(2).<sup>1</sup> That section provides, “[a] person shall be entitled to a [patent](#) unless ... before such person’s invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.” 35 U.S.C. § 102(g)(2). Although section 102(g) initially was designed for determining priority of invention in interference proceedings, it is settled that the section has “independent significance as a basis for prior art outside of the interference context.” *Thomson, S.A. v. Quixote Corp.*, 166 F.3d 1172, 1175 n. 3 (Fed.Cir.1999); see also *Solvay v. Honeywell International, Inc. (“Solvay I”)*, 622 F.3d 1367, 1375–76 (Fed.Cir.2010). A [patent](#) is invalid under that section if the claimed invention was made in this country by another inventor before the [patent’s](#) priority date. See, e.g., *Solvay I*, 622 F.3d at 1375 n. 3 (describing 1999 amendments to § 102(g)). Making the invention requires conception and reduction to practice. While conception is the “formation, in the mind of the inventor, of a definite and permanent idea of a complete and operative invention,” reduction to practice “requires that the claimed invention work for its intended purpose.” *Id.* at 1376 (citing *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed.Cir.1986)). It is also necessary that the invention not be suppressed, abandoned, or concealed. See, e.g., *Apotex USA, Inc. v. Merck & Co.*, 254 F.3d 1031, 1036 (Fed.Cir.2001).

[4] Our prior cases have illuminated what is meant by “made in this country.” See, e.g., *Solvay I*, 622 F.3d at 1376 (citing *Mycogen Plant Sci., Inc. v. Monsanto Co.*, 243 F.3d 1316, 1331 (Fed.Cir.2001); *Apotex*, 254 F.3d at 1036). Although the inventors may reside in a foreign country and conceive the invention abroad, a reduction to practice made outside the United States is beyond the scope of § 102(g)(2) prior art. In other words, § 102(g)(2) allows conception to occur in another country, but in such circumstances requires the work constituting the reduction to practice to be performed in the United States by or on behalf of the inventor.<sup>2</sup> However, “there is no requirement that the inventor be the one to reduce the invention to practice so long as the reduction to practice was done on his behalf” in the United States. *In re DeBaum*, 687 F.2d 459, 463 (CCPA 1982) (citing *Litchfield v. Eigen*, 535 F.2d 72, 76 (CCPA 1976)). Consistent with that principle, “[a]cts by others working explicitly or implicitly at the inventor’s request will inure to his benefit.” 3A Donald S. Chisum, *Chisum on Patents* § 10.06[3].

Here, Honeywell contends that the invention was conceived by Russian inventors outside the United States and reduced to practice in the United States by Honeywell \*1001 personnel following the Russian inventors' instructions before the #817 patent's priority date. It follows, argues Honeywell, that the invention qualifies as § 102(g)(2) prior art.

## II

Solvay's #817 patent claims an improvement to a method of making a hydrofluorocarbon (“HFC”) known as HFC–245fa.<sup>3</sup> #817 patent col. 1 ll. 4–5. HFC–245fa belongs to a group of HFCs that do not deplete the ozone layer and for that reason, are legislatively mandated to replace ozone-depleting alternatives. HFC–245fa is especially useful in preparing polymeric materials commonly used for insulation in refrigeration and heat storage systems. The #817 patent has a priority date of October 23, 1995.

In 1994, before Solvay's priority date, Honeywell and RSCAC personnel entered into a research contract. Pursuant to that agreement, RSCAC engineers, working in Russia, conducted process development studies for the commercial production of HFC–245fa. In July 1994, the RSCAC sent Honeywell a report documenting the development of a continuous process capable of producing high yields of HFC–245fa by reacting HCC–240fa<sup>4</sup> with hydrogen fluoride in the presence of a catalyst. Honeywell personnel in the United States used the RSCAC's report to run the same process in this country in 1995, before the #817 patent's October priority date.<sup>5</sup>

Solvay sued Honeywell in the District of Delaware, alleging that the process Honeywell was using to manufacture HFC–245fa infringed certain claims of the #817 patent. Independent claim 1, the only claim at issue on appeal, reads:

In a process for the preparation of [HFC–245fa] comprising reaction of [HCC–240fa] with hydrogen fluoride in the presence of a hydrofluorination catalyst, the improvement which comprises carrying out the reaction at a temperature and under a pressure at which [HFC–245fa] is gaseous and isolating ... [HFC–245fa] from the reaction mixture by drawing off [HFC–245fa] and hydrogen chloride [HCl] in a gaseous phase as each of said [HFC245fa] and [HCl] is being formed.

#817 patent, col. 5 ll. 36–46.

Honeywell defended, inter alia, on the ground that independent claim 1 and dependent claims 5, 7, 10, and 11 of the #817 patent were invalid under § 102(g)(2). Honeywell's initial theory was that its engineers had reduced the invention to practice in the United States and that this made the Honeywell engineers inventors under § 102(g)(2).

In 2008, the district court construed the “isolating” limitation in claim 1 to read:

The process for making HFC–245fa includes a reaction at a temperature and under a pressure whereby HFC–245fa and HCl are produced in gaseous form and *separated from the reaction mixture in a gas stream that can include other compounds, such as unconverted reactants and chlorofluoropropanes possibly formed by incomplete fluorination of HCC–240fa.*

\*1002 J.A. 4 (emphasis added). The district court thus construed “isolating” to require “separating” HFC–245fa and HCl from the reaction mixture. *Id.* It did not require separating only those components from the reactor. *Id.* Based on that claim construction, the district court ruled on summary judgment that Honeywell's process infringed claims 1, 5–7, 10, and 11. However, the district court granted summary judgment of invalidity as to claims 1, 5, 7, 10, and 11 under § 102(g)(2) on the ground that the Honeywell engineers were other inventors who made the invention in this country without abandoning, suppressing, or concealing it.<sup>6</sup>

The district court's judgment was appealed to this court. On appeal, we agreed with the district court's claim construction of the term “isolating” in claim 1, explaining that “claim 1 is not limited to ‘isolating’ only HFC–245fa and HCl and residual amounts of other compounds.” *Solvay I*, 622 F.3d at 1382. We affirmed the district court's ruling on summary judgment that claims 1, 5, 7, 10, and 11 were infringed. However, we reversed the finding that claims 1, 5, 7, 10, and 11 were invalid under § 102(g)(2), explaining that Honeywell personnel could not qualify as “another inventor” because they “did not conceive the invention of the #817 patent, but derived it from others,” specifically, the RSCAC engineers who “first conceived the invention in Russia.” *Id.* at 1378–79.

On remand, Honeywell asserted an alternative theory as to why § 102(g)(2) applied, arguing that the Russian inventors made the invention in this country by sending instructions to Honeywell personnel who used the instructions to reduce the invention to practice in this country. The parties did not dispute the fact that, under the district court's claim construction, the RSCAC process corresponded to the invention recited in claim 1 of the #817 patent or that the RSCAC engineers first conceived the invention and reduced it to practice in Russia. But the parties disputed whether (1) the Honeywell reduction to practice should be attributed to the Russian inventors and (2) whether the Russian inventors had disclosed the invention rather than abandoning, suppressing, or concealing it. Although the district court held that, as a matter of law, the RSCAC engineers should be treated as inventors who made the invention in the United States under § 102(g)(2), it denied summary judgment on the invalidity of claim 1 because of genuine issues of material fact as to whether the RSCAC engineers disclosed their invention in a 1994 Russian patent application rather than abandoning, suppressing, or concealing it.

Eventually, a jury determined that, as required by § 102(g)(2), the RSCAC did disclose the invention of claim 1 in the 1994 Russian patent application such that they did not abandon, suppress, or conceal it. Based on the jury verdict, the district court entered judgment for Honeywell, finding asserted claim 1 invalid under § 102(g)(2).<sup>7</sup> Solvay appealed. We have \*1003 jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

## DISCUSSION

### I

The priority date for Solvay's #817 patent is October 23, 1995. The parties do not dispute that if the Russians conceived the invention and reduced it to practice in this country before that date without abandoning, suppressing, or concealing it, claim 1 of Solvay's #817 patent is invalid under § 102(g)(2). On appeal, Solvay does not dispute that the Russians were first to conceive the invention recited in claim 1 or that Honeywell reduced it to practice in this country before Solvay's October 23, 1995, priority date, but challenges (1) the jury's finding of nonsuppression, and (2) the district court's ruling that the Russians made the invention in this country.

As to the first issue, Solvay argues that the district court erroneously construed claim 1 and that the resulting instructions tainted the jury's finding that the Russians disclosed the invention in a 1994 Russian patent application and, therefore, did not suppress or conceal it. In other words, Solvay argues that the application did not satisfy § 102(g)(2) because the application did not disclose the full scope of the claims if they were properly construed. Before addressing the merits of Solvay's claim construction contention, we consider whether Solvay has waived its objection by failing to request in the district court the construction it now advocates.

### A

The general rule is that “an appellate court does not give consideration to issues not raised below.” *Hormel v. Helvering*, 312 U.S. 552, 556, 61 S.Ct. 719, 85 L.Ed. 1037 (1941); *see also Singleton v. Wulff*, 428 U.S. 106, 120, 96 S.Ct. 2868, 49 L.Ed.2d 826 (1976). The doctrine of waiver “has been applied to preclude a party from adopting a new claim construction position on appeal.” *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1346 (Fed.Cir.2001). A claim construction argument is considered “new” if a party “change[s] the scope of the claim construction” rather than “clarifying or defending the original scope of its claim construction” or “supporting its existing claim construction position with new citations to the specification.” *Id.*

According to Solvay, claim 1 requires that HFC–245fa and HCl be removed from the reaction mixture permanently so that the HFC–245fa and HCl are not recycled back into the reactor. Claim 1 reads:

In a process for the preparation of [HFC–245fa] comprising reaction of [HCC–240fa] with [HF] in the presence of a hydrofluorination catalyst, the *improvement which comprises carrying out the reaction at a temperature and under a pressure at which [HFC–245fa] is gaseous and isolating ... [HFC–245fa] from the reaction mixture by drawing off [HFC–245fa] and [HCl] in a gaseous phase as each of said [HFC–245fa] and [HCl] is being formed.*

#817 patent col. 5 ll. 36–46 (emphasis added).

When this case was first appealed, this court upheld the district court's construction of the term “isolating” in claim 1 of the #817 patent to mean “drawing off” or “separating” HFC–245fa and HCl from the reaction, but not necessarily “purifying” the drawn-off material. *Solvay I*, 622 F.3d at 1382. As a result, the gas stream conveying HFC–245fa from the reactor can include other compounds from the reaction mixture, not only HFC–245fa and HCl. The parties did not raise, and this court did not address, the issue of whether the \*1004 HFC–245fa and HCl could return to the reactor after being drawn off initially.

Near the end of the validity trial, however, a disagreement between the parties arose as to whether the reaction products had to be permanently isolated from the reaction mixture. Solvay argued that “isolating” the reaction products necessarily required keeping them separated. In response, Honeywell argued that requiring permanent separation contradicted the district court's claim construction, affirmed by this court, as well as the plain language of the claim.

The district court held that, based on claim language, specification references, and this court's construction of the term “isolating,” the reaction products did not have to be permanently isolated from the reaction mixture. The court granted Honeywell's request for a standard jury instruction that the term “comprising” means that “the claim is not limited to a process that includes only what is in the claim and nothing else.” J.A. 49. At trial, Honeywell argued that the #817 patent could read on processes in which HFC–245fa and HCl return to the reaction mixture through additional steps after the initial separation.

Solvay contends that the district court's instruction reflected an erroneous interpretation of “isolating.” According to Solvay, if given the correct interpretation, “the jury might well have found that the Russian application did not disclose Solvay's invention” because in the RSCAC process, some gaseous HFC–245fa condenses back into a liquid and drips back into the reaction mixture after the initial separation. Reply Br. 34.

[5] The problem is that Solvay did not ask the district court to modify the claim construction or accompanying jury instruction to require “isolating” to mean “isolating permanently.” When the issue surfaced at trial, it was raised by Honeywell in response to Solvay's questioning of its expert witness. Honeywell argued that Solvay was attempting to make improper claim construction arguments to the jury. In response, Solvay insisted that the isolating limitation necessarily implied permanence notwithstanding the ambiguity that the disagreement between the parties made apparent. The district court, which had not previously been asked to consider the issue of permanence, asked the parties to submit briefs on the issue. Solvay, in its brief, still did not request any modification or clarification of the claim construction,



“reassert [ing] that it agree[d] with the Court's proposed construction.” J.A. 5263. Because Solvay failed to object to the court's construction or jury instruction with respect to the term “isolating,”<sup>8</sup> it waived the issue and cannot now raise novel arguments to redefine the scope of claim 1. See *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1341 (Fed.Cir.2005) (a party that “agreed to the district court's construction at the time ... cannot [on appeal] argue against that claim construction simply because it resulted in an adverse ruling”).<sup>9</sup>

## B

[6] [7] [8] Even if the claim construction issue had been properly raised, we see no \*1005 error in the district court's construction. Claim construction is a question of law reviewed de novo. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1451 (Fed.Cir.1998). The conclusion that “isolating” means “separating,” and therefore does not preclude additional steps that could occur after the initial isolation, is consistent with the claims and specification. Claim 1 of the #817 patent uses the transitional term “comprises” to define the bounds of the patented improvement. See # 817 patent col. 5 l.40. The well-established meaning of “‘comprising’ in a method claim indicates that the claim is open-ended and allows for additional steps.” *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368 (Fed.Cir.2003) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 811 (Fed.Cir.1999)).

We agree with the district court that nothing in the claims or specification overcomes the well-established meaning of “comprises” as a transitional term allowing for additional steps. Solvay supports its position by pointing to a portion of the specification stating that “[i]t is advantageous to separate the [HFC–245fa] and the [HCl] from the reaction mixture as they are being formed and to keep in, or return to, the reactor the unconverted reactants, as well as the chlorofluoropropanes possibly formed by incomplete fluorination of [HCC–240fa].” #817 patent col. 2 l. 64 to col. 3 l. 2. On its face, the statement pertains to recycling reactants, not reaction products, and does not expressly or impliedly preclude recycling reaction products to the reaction mixture as well.

Solvay attempts to buttress its argument by pointing out that the reference in the specification corresponds to a statement in the #817 patent's prosecution history that purportedly “shows that the isolation limitation was intended to distinguish” the invention from the prior art, specifically the # 192 patent. Reply Br. 32. According to Solvay, it amended claim 1 to avoid rejection in view of the #192 patent and thus explained to the examiner that its invention “enables [HFC–245fa] to be easily separated from the reaction mixture, which is an advantage as it makes it possible to retain or to return to the reactor the unconverted reactants and [products of incomplete fluorination].” J.A. 8364. As with the specification reference, the statement pertains only to recycling reactants and incomplete reaction products and does not require HFC245fa or HCl to be isolated once and for all time when they first leave the reaction mixture in gaseous form. It does not follow that distinguishing a process on the basis of the continuous removal of reaction products also requires such removal to be permanent. Continuous removal pertains to the status of the reaction and does not connote or require permanence with respect to steps occurring after products are formed and removed while the reaction is still ongoing. We find no legal error in the court's claim construction. Under this claim construction, Solvay does not on appeal contest that the Russian patent application sufficiently disclosed the invention.<sup>10</sup>

## II

Solvay urges that, even under the district court's claim construction, the requirements of § 102(g)(2) are not satisfied. Solvay does not dispute that Honeywell fully performed the RSCAC's process for making HFC–245fa in the United States \*1006 before the #817 patent's October 1995 priority date. Nor is it disputed that, under the district court's claim construction, the RSCAC process corresponds to the invention claimed by the #817 patent. Instead, Solvay argues that (1) the doctrine of inurement, defining when the activities of others inure to the benefit of the inventor, controls



the question of whether Honeywell's work can be attributed to the RSCAC engineers, and (2) the undisputed facts do not establish inurement because the RSCAC engineers did not expressly ask the Honeywell researchers to perform the inventive process.

[9] Assuming that the inurement doctrine governs, inurement does not require that the inventor expressly request or direct the non-inventor to perform reductive work. To be sure, no inurement can arise from a third party's "unwarranted and hostile use" of another's invention, *Burgess v. Wetmore*, 1879 Dec. Comm'r Pat. 237, 240 (no inurement of reduction to practice built by rival applicant), but an express request or direction is not required. The request may be "implicit[.]" *Cooper v. Goldfarb*, 154 F.3d 1321, 1332 (Fed.Cir.1998). In *Hogue v. Cowling*, 26 CCPA 874, 101 F.2d 541, 542, 544, 550 (1939), a third party's reduction to practice inured to the benefit of the inventor, who disclosed his idea for a "confection making apparatus" to the manager of a popsicle company and suggested that the latter sketch the invention. The manager did not merely make a sketch, but built and tested a working device, believing he was "acting in accordance" with the inventor's wishes. *Id.* at 550. The inventor knew nothing about the third party's work, but was still able to claim it as his own to establish the priority of his invention.

Similarly, in *Learned v. Thompson*, 39 C.C.P.A. 730, 191 F.2d 409, 410–11, 415 (1951), an inventor benefited from work performed by a third party with whom he had no direct communication. The inventor, Learned, disclosed his invention and offered it to the United States government, which then turned the disclosure over to an employee, who reduced the invention to practice. *Id.* at 410–11. The employee even filed his own patent application for improvements he made, although he later abandoned that application in the first inventor's favor. *Id.* at 410. The court treated the reduction to practice as the inventor's because he had given "authorization to the Government" to use his invention. *Id.* at 415. The inventor's authorization was sufficient even though he never asked the government or its employee to reduce the invention to practice nor supervised the reductive work.

In *Kendall v. Searles*, 36 C.C.P.A. 1045, 173 F.2d 986, 992 (1949), as with Honeywell and the RSCAC, Fafnir and Westinghouse had a "joint program of development." The inventor, an official at Fafnir, conceived the invention and communicated his conception to Westinghouse, which conducted tests necessary to establish the inventor's reduction to practice and the priority of his invention. *Id.* at 991–92. Although it appears that the inventor did not have "anything to do with the tests conducted by Westinghouse," those tests were held to inure to his benefit. *Id.* at 992.

[10] Thus, our case law does not support Solvay's contention that an inventor must make an express directive or request to benefit from a third party's reduction to practice. Rather, inurement exists if the inventor authorizes another to reduce his invention to practice. Here, the research agreement between the RSCAC and Honeywell confirms that the RSCAC authorized Honeywell to practice its invention in the United States and contemplated that Honeywell would do so. The contract \*1007 stated that "RSCAC will assist [Honeywell] in the development of manufacturing processes for hydrofluorocarbon compounds (HFCs) ... or hydrofluorocarbon ethers (HFC ethers)." J.A. 3355. Pursuant to that agreement, Honeywell promised to provide yearly compensation, information, and equipment, while the Russians agreed to produce 1,000 kg of HFC–245fa, develop production processes, and send regular reports to Honeywell detailing their results and progress. While title and rights to inventions would belong to Honeywell, the RSCAC could make, use, and sell those inventions in Russia. The collaborative research arrangement between Honeywell and the RSCAC thus parallels the joint development program in *Kendall*, 173 F.2d at 992.

Solvay does not suggest that the RSCAC did not intend for Honeywell to use the information it sent or that it did not authorize Honeywell to reproduce the process it described. The undisputed facts show that the RSCAC authorized Honeywell to practice its invention and specifically contemplated that it would do so under the companies' joint research agreement aimed at developing commercial processes for the production of HFC–245fa. The RSCAC engineers gave Honeywell personnel the information they needed to perform the inventive process in this country in July 1994, and Honeywell relied on that information in so doing. As we noted in our earlier decision, "in early 1995, Honeywell replicated

the Russian process *by following the information provided by RSCAC*, thereby practicing the invention in the United States before the #817 **patent**'s priority date.” *Solvay I*, 622 F.3d at 1374 (emphasis added).

Solvay argues that there can be no inurement here because Honeywell independently benefited from performing the RSCAC process. Solvay in particular points to Honeywell's subsequent filing of its own **patent** application and notes that in *Burgess*, the existence of a rival **patent** application was held, in part, to defeat inurement. But *Learned* shows that the mere filing of a related **patent** application does not in itself preclude inurement. Here, the Russians applied for and received a **patent** in Russia, while Honeywell filed a **patent** application in the United States. The parties did not view these applications as rivals, providing that Honeywell was entitled to exclusive rights to inventions resulting from the collaboration while the Russians were entitled only to sublicenses.

We therefore agree with the district court that the process invented by the Russian engineers was made in this country when Honeywell successfully performed the process because the Russians authorized Honeywell personnel to practice the invention and specifically contemplated that they would do so.<sup>11</sup> We affirm \*1008 the district court's judgment that the #817 **patent** is invalid under § 102(g)(2).<sup>12</sup>

**AFFIRMED.**

**NEWMAN**, Circuit Judge, dissenting.

The court today creates a new class of secret prior art, holding that a privately performed experiment, without publication or public knowledge or use or sale or inclusion in a United States **patent** application, is invalidating “prior art.” Heretofore the role of secret prior art has been carefully circumscribed. The new general rule here adopted contravenes the policy and the letter of **patent** law, wherein inventors are charged only with knowledge of what is known or knowable as defined by statute, subject to special limited circumstances.

The panel majority holds that private secret activity—in this case Honeywell's evaluation of Russian technology that had been invented in Russia and placed in an unpublished Russian **patent** application—is “prior art” against all others, thereby invalidating the Solvay **patent**. The panel majority does not recognize the unavailability of an interference contest, for there is no United States counterpart to the Russian **patent** application.

In the prior appeal of this case, *Solvay S.A. v. Honeywell Int'l, Inc.*, 622 F.3d 1367 (Fed.Cir.2010) (*Solvay I*), this court confirmed that the Russian invention was conceived and reduced to practice in Russia, and that Honeywell's repetition of the process in the United States was not an invention made in the United States. Testing the invention of another is not an act of invention by the tester. This aspect was finally resolved in *Solvay I*, the court describing Honeywell's work in the United States as a “derivation” of the Russian invention. The matter was finally decided; it is not open for redetermination.

Undaunted, the panel majority now rules that Honeywell's activity was a “reduction to practice” of the Russian process. The private/secret duplication of the prior invention of another does not convert either that prior invention or its duplication into prior art. The issue here is not priority between the Russian invention and the Solvay invention; the issue is prior art against the world.

The Honeywell test of the Russian process was a private experiment. No United States **patent** application was filed on the Russian process, not by Honeywell and not by the Russian inventors. A private experiment is not prior art, when it is not published, nor used, sold or otherwise made known, nor included in a United States **patent** application.

The panel majority concedes that the Russian process was conceived and reduced to practice in Russia and placed in a Russian **patent** application, for which no corresponding United States application was filed. Nonetheless the panel majority holds that the Russian invention was “made in this country,” maj. op. at 1007, because it was privately communicated to Honeywell, who tested it in this country. The panel majority states that the Honeywell test “inured” to the benefit of the Russians. However, the Russians had no United States **patent** application that could benefit from “inurement,” even if my colleagues had not created the theory (for \*1009 Honeywell does not so state) that Honeywell performed this evaluation on behalf of the Russian inventors. My colleagues simply rule that due to “inurement” the secret Honeywell test converts the still secret Russian technology into “prior art.”

In the earlier appeal in this case, the status of Honeywell's test of the Russian technology was established, by final judgment, as “derivation.” Honeywell's private testing did not convert the subject technology into prior art. The court's new class of secret prior art enlarges the situations in which unknowable private activity may serve to invalidate the independent inventions of third parties. From the confused and incorrect new law announced by the court, I respectfully dissent.

## DISCUSSION

In the prior appeal in this action, the court considered Honeywell's status in the context of § 102(g)(2):

Since it is undisputed that Honeywell did not originate the invention, but reproduced it in the United States by following RSCAC's instructions, Honeywell cannot be said to have conceived of the invention and cannot, consequently, be an inventor for purposes of § 102(g)(2).

*Solvay I*, 622 F.3d at 1378. The court decided, unequivocally and finally, that Honeywell was not the inventor of the Russian technology

but, rather, derived it from RSCAC [Russian Scientific Center for Applied Chemistry], whose engineers invented it in Russia.

*Id.* at 1374. These rulings are the law of this case. It is no longer before this court to attempt to treat the Russian technology as if it were invented in the United States.

Also, I must correct the court's erroneous statement concerning Honeywell's later-filed United States **patent** application on its subsequent improvement and development of the Russian process. It is misleading to state that “the Russians applied for and received a **patent** in Russia, while Honeywell filed a **patent** application in the United States.” Maj. op. at 1007. The Honeywell **patent** application was not on the Russian invention but on the later Honeywell invention, as explained in *Solvay I*:

Throughout the summer of 1995, Honeywell continued working to develop and perfect its process for the preparation of HFC–245fa. The work included finding optimum operating conditions for the process, as well as designing and enabling downstream purification of the HFC–245fa product. Development of a pilot plant to test a commercially viable manufacturing process for HFC–245fa was begun by Honeywell, and the plant was in successful operation by February 1996. In March 1996, Honeywell began drafting a **patent** application on an improvement process for making HFC–245fa. The application was filed on July 3, 1996, and eventually issued as U.S. **Patent** No. 5,763,706 (“the #706 **patent**”). The #706 **patent** discloses a process for the continuous preparation of HFC–245fa, using optimal conditions for downstream purification, so that the HFC–245fa recovered by distillation has a high purity (at least about 99.5%). See #706 **patent**, col.1 1.60–col.2 1.25; col.4 11.40–42.

*Solvay I*, 622 F.3d at 1372 (citations omitted). My colleagues' suggestion that this Honeywell **patent** was the United States counterpart of the Russian **patent** application, or somehow converted Honeywell's evaluation of the Russian invention into "prior art" against Solvay and all others, is untenable.

The court in *Solvay I* resolved that the Russian invention was not made in the United States. The panel majority now \*1010 concedes that the Russian process was conceived and reduced to practice in Russia, maj. op. at 1002, but states that "§ 102(g)(2) allows conception to occur in another country, but in such circumstances requires the work constituting the reduction to practice to be performed in the United States by or on behalf of the inventor." Maj. op. at 1000. This is incorrect on two fronts. First, this court has never held that an invention conceived in a foreign country is "made in this country" under § 102(g)(2). And second, it was not shown that Honeywell's work in the United States was "by or on behalf of" the Russian inventors. Honeywell never so stated; that is a postulate of the panel majority.

In priority contests between conflicting United States **patent** applications under § 102(g)(1), reliance for priority has occasionally been authorized on activity conducted in the United States on behalf of a foreign applicant. Here there is no priority contest, no United States **patent** application, and no domestic activity on behalf of a foreign inventor. The cases cited by the panel majority are inapplicable.

The majority cites *Holmwood v. Sugavanam* for the thesis that a "foreign inventor was 'another inventor' under § 102(g)(2) when the invention was reduced to practice in the United States on his behalf." Maj. op. at 1000 n. 2. *Holmwood* was an interference case under § 102(g)(1). Section 102(g)(2) was not at issue, nor did the foreign inventor claim to be "another inventor." The majority's citation is out of context, for the case is not applicable to any of the issues before us.

The other cases cited to support the ruling that Honeywell's private/secret activity in the United States converted the Russian process into "prior art" are all "interference" contests, where United States activity served as evidence of priority of invention. *E.g.*, *Shurie v. Richmond*, 699 F.2d 1156, 1158 (Fed.Cir.1983) (evidence that the process in interference was performed on behalf of the inventor in the United States); *Scott v. Koyama*, 281 F.3d 1243 (Fed.Cir.2002) (evidence of disclosure in the United States to show conception by a party to the interference); *Tyler Refrigeration Corp. v. Kysor Industrial Corp.*, 601 F.Supp. 590 (D.Del.1985), *aff'd on other grounds*, 777 F.2d 687 (Fed.Cir.1985) (an actual reduction to practice in the United States could be relied on by a foreign inventor to support interference priority).

The panel majority's reliance on "inurement" is thus irrelevant, for there is no United States application to which the Honeywell experiment could inure. Whether activity in the United States can support a foreign inventor's interference priority has no relation to whether that activity is prior art against the world.

The panel majority insists that the Russian invention was merely conceived in Russia, and although reduced to practice in Russia, was also "reduced to practice" by Honeywell in the United States, whereby the panel majority concludes that the Russian invention was "made in this country." Maj. op. at 1007. Not even Honeywell made that argument, and there was no evidence or argument that Honeywell's work was done at the request of and on behalf of the Russians.

The panel majority makes much of the conclusion that the Russians did not "abandon, suppress, or conceal" their invention. No one argued otherwise. However, the unpublished, unused, unknown, Russian invention, contained in a Russian **patent** application with no United States counterpart, does not thereby become prior art.

\*1011 Unpublished private activity in a foreign country is not prior art. Foreign inventions may of course be the subject of a United States **patent**, and the benefit of a foreign filing date may be obtained in accordance with 35 U.S.C. § 119. Here, however, there is no corresponding United States **patent**. The Russian **patent** application, filed on May 28, 1994, would, according to Russian law, have been "laid open" eighteen months later, on November 28, 1995, after Solvay's priority date of October 23, 1995. Whether or not Honeywell's work with the Russian process in the United States

“inured” to the Russians, it could not convert the unpublished Russian application, or its unpublished evaluation in the United States, into prior art.

The issue here is not whether Honeywell has a personal defense to infringement, as the panel majority states: “We have repeatedly held that prior invention by another is a defense to infringement.” Maj. op. at 1007–08 n. 11. The issue is whether the Russian secret process became prior art against the world when Honeywell secretly reproduced it in the United States.

The *Checkpoint* case, relied on by the panel majority, is misapplied, first because *Checkpoint* confirms that § 102(g) relates to inventions “made in this country,” and second because *Checkpoint* on its facts offers no guidance here. In *Checkpoint* the question was **patent** validity related to inventorship, and the court stated, citing § 102(g), that: “Checkpoint does not contest that Kaltner completed the subject invention in this country.” *Checkpoint Sys., Inc. v. U.S. Int’l Trade Comm’n*, 54 F.3d 756, 761 (Fed.Cir.1995). The court explained that “a first inventor may seek to avoid a determination of abandonment by showing that he or she marketed or sold a commercial embodiment of the invention or described the invention in a publicly disseminated document,” *id.* at 762, none of which is here asserted. The only possible relevance of *Checkpoint* would be to show that the Russian invention was indeed abandoned by the Russians in the United States.

The *Amgen* and *New Idea* decisions that the majority cites to support its flawed reliance on *Checkpoint* concern inventions made in this country. In *Amgen* the question was whether conception and reduction to practice occurred together or separately for DNA sequence identification work done in this country. *Amgen, Inc. v. Chugai Pharm. Co., Ltd.*, 927 F.2d 1200, 1205 (Fed.Cir.1991). And *New Idea* discussed the inventor’s work in this country, stating that “Burkhart’s testimony further showed that in early 1971, a prototype harvester was built with an arched tongue and a center pivot connection to the harvester.” *New Idea Farm Equip. Corp. v. Sperry Corp.*, 916 F.2d, 1561, 1566 (Fed.Cir.1990). There was no issue of foreign invention.

Invalidation by secret prior art is disfavored. See *OddzOn Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1402 (Fed.Cir.1997) (“Thus, the **patent** laws have not generally recognized as prior art that which is not accessible to the public.”); *Kimberly–Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1446 (Fed.Cir.1984) (defining § 102 “prior art” as “technology already available to the public,” and stating that “secret prior art” may not be used to invalidate a **patent** under § 102(g)). The majority’s spin on § 102(g) takes “secret prior art” into unintended territory.

There is no issue before us of whether Honeywell might have a personal defense against the Solvay **patent**; the only issue is whether the secret Honeywell test of the unpublished Russian process is prior art against the world. The court’s ruling that prior art includes secret information is of far-reaching potential impact. It is as unnecessary \*1012 as it is inappropriate to so enlarge the scope of secret prior art.

I respectfully dissent.

## All Citations

742 F.3d 998, 109 U.S.P.Q.2d 1609

## Footnotes

- 1 The activities at issue occurred before the enactment of the Leahy–Smith America Invents Act (“AIA”), Pub.L. No. 112–29, § 3, 125 Stat 284, 285–93 (2011), after which § 102 no longer includes subsection (g). Therefore all references to § 102 are to the earlier version of the statute, 35 U.S.C. § 102(g)(2) (2006), which governed the activities at issue in this case. See AIA § 3(n)(1), 125 Stat. at 293 (providing that AIA amendments apply only to applications and **patents** with an effective filing date of March 16, 2013, or later).



- 2 See, e.g., *Holmwood v. Sugavanam*, 948 F.2d 1236, 1238 (Fed.Cir.1991) (foreign inventor was “another inventor” under § 102(g)(2) when the invention was reduced to practice in the United States on his behalf); *Shurie v. Richmond*, 699 F.2d 1156, 1158 (Fed.Cir.1983) (no reduction to practice where the inventive process was carried out in Canada, not the United States); *Breuer v. DeMarinis*, 558 F.2d 22, 27 (CCPA 1977) (foreign inventors reduced the invention to practice in this country when reduction to practice was done on their behalf in the United States).
- 3 The chemical name for HFC–245fa, used in the #817 patent, is 1, 1, 1, 3, 3–pentafluoropropane.
- 4 The chemical name for HCC–240fa, used in the #817 patent, is 1, 1, 1, 3, 3–pentachloropropane.
- 5 Honeywell eventually filed a patent application covering a refined version of the RSCAC process in July 1996, which issued as U.S. Patent No. 5,763,706 (“the #706 patent”).
- 6 Although the district court's invalidity ruling did not include claim 6, the parties stipulated that claim 6 would be withdrawn, and that Solvay could reassert it if only if claims 1, 5, 7, 10, and 11 were held not invalid.
- 7 The jury also determined that claim 1, the only claim asserted at trial, was anticipated in view of U.S. Patent No. 5,574,192 (“the # 192 patent”) and obvious in view of the #192 patent and U.S. Patent No. 5,202,509. The district court entered a judgment of invalidity on those grounds as well. In light of our disposition on appeal, we need not reach these other issues. The parties do not explain why on remand only claim 1 was the subject of the invalidity trial. It appears likely that the parties agreed that the remaining claims found to be infringed would stand or fall together with claim 1.
- 8 Solvay did not preserve the issue by objecting to the “comprising” instruction.
- 9 At trial, Solvay asserted that the phrase “as each of said [HFC–245fa] and [HCl] is being formed” should have been added to the jury instruction on claim 1. J.A. 96. In its motion for a new trial, Solvay did not renew that objection. The final jury instruction on claim 1 was modified only slightly to include “continuously” and “or drawn off.” J.A. 96. On appeal, Solvay concedes that “[t]his instruction is consistent with the claim limitation requiring ‘isolat[ion]’.” Reply Br. 27 (second alteration in original).
- 10 On appeal, there is no contention that disclosure of the reduction to practice was required.
- 11 The dissent argues that the majority is improperly incorporating concepts from interferences into the infringement context, and is allowing “secret prior art” to invalidate a patent. Dissent at 1008–09, 1011–12. The dissent is incorrect. We have repeatedly held that prior invention by another is a defense to infringement. See, e.g., *Checkpoint Sys., Inc. v. U.S. Int'l Trade Comm'n*, 54 F.3d 756, 761–62 (Fed.Cir.1995) (“However, § 102(g) is applicable in other contexts as well, such as when it is asserted as a basis for invalidating a patent in defense to an infringement suit.”) (citing *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1203 (Fed.Cir.1991); *New Idea Farm Equip. Corp. v. Sperry Corp.*, 916 F.2d 1561, 1565 (Fed.Cir.1990)). The invention was described in the Russian patent application. It is also established that § 102(g) requires that the prior inventor not “abandon, suppress, or conceal” his invention. See, e.g., *Apotex*, 254 F.3d at 1037 (“A § 102(g) prior invention defense is governed by the identical ‘suppressed or concealed’ language applicable to priority determinations in interference proceedings.”). Here, the jury specifically found that the Russian inventors did not abandon, suppress, or conceal their invention, a conclusion the dissent does not dispute.
- 12 We need not consider the district court's exclusion of statements made by an attorney prosecuting a patent for Honeywell given Solvay's admission, during oral argument, that this issue has no bearing on invalidity under § 102(g)(2).