

United States Court of Appeals
for the Federal Circuit

TECHNOLOGY PATENTS LLC,
Plaintiff-Appellant,

v.

T-MOBILE (UK) LTD., T-MOBILE AUSTRIA GMBH,
T-MOBILE CZECH REPUBLIC A.S., T-MOBILE
DEUTSCHLAND GMBH, T-MOBILE HUNGARY CO.
LTD., T-MOBILE NETHERLANDS B.V.,
AND T-MOBILE SLOVENSKO A.S.,
Defendants-Appellees,

AND

ADVANCED INFO SERVICE PLC, also known as
AIS, BELL MOBILITY INC., CSL NEW WORLD
MOBILITY LIMITED, CHINA MOBILE PEOPLES
TELEPHONE COMPANY LIMITED, now known as
China Mobile Hong Kong Company Limited,
KT FREETEL CO. LTD., now known as KT
Corporation, SINGAPORE TELECOM MOBILE
PRIVATE LIMITED, SINGAPORE
TELECOMMUNICATIONS LIMITED, also known as
Singtel, SINGTEL OPTUS PTY LIMITED, STARHUB
MOBILE PTE LTD., AND TELSTRA CORPORATION
LIMITED,
Defendants-Appellees,

AND

AMERICA MOVIL, S.A.B. DE C.V., CLARO, S.A.,
AMX ARGENTINA, S.A.,

AND **RADIOMOVIL DIPSA, S.A. DE C.V.**, also known
as Telcel,
Defendants-Appellees,

AND

BELGACOM MOBILE S.A., also known as Proximus,
MOBILKOM AUSTRIA AG, SFR, also known as Societe
Francaise De Radiotelephone S.A., **SMARTONE**
MOBILE COMMUNICATIONS LIMITED,
TANGO S.A., VODAFONE CZECH REPUBLIC A.S.,
VODAFONE D2 GMBH, also known as Vodafone
Germany, **VODAFONE ESPANA S.A., VODAFONE**
ESSAR LTD., VODAFONE HUNGARY MOBILE
TELECOMMUNICATIONS LTD., VODAFONE
IRELAND LTD., VODAFONE LIBERTEL B.V.,
VODAFONE LIMITED, also known as Vodafone UK,
VODAFONE NETWORK PTY. LTD., VODAFONE
NEW ZEALAND, VODAFONE OMNITEL N.V.,
VODAFONE PORTUGAL, COMUNICACOES
PESOAIIS, S.A., VODAFONE
TELEKOMUNIKASYON A.S., also known as Vodafone
Turkey, AND **VODAFONE-PANAFON HELLENIC**
TELECOMMUNICATIONS COMPANY S.A.,
also known as Vodafone-Panafon S.A.,
Defendants-Appellees,

AND

TNL PCS S.A., ALSO KNOWN AS OI,
Defendant-Appellee,

AND

BASE N.V./S.A., E-PLUS MOBILFUNK GMBH & CO.
KG, AND KPN B.V.,
Defendants-Appellees,

AND

BERMUDA DIGITAL COMMUNICATIONS LTD.,
Defendant-Appellee,

AND

BOUYGUES TELECOM S.A.,
Defendant-Appellee,

AND

CHUNGHWA TELECOM CO. LTD.,
FAR EASTONE TELECOMMUNICATIONS CO.
LTD., AND TAIWAN MOBILE CO., LTD.,
Defendants-Appellees,

AND

CLICKATELL (PTY) LTD.,
Defendant-Appellee,

AND

FRANCE TELECOM ESPANA S.A., also known as
Orange Spain, **FRANCE TELECOM S.A., MOBISTAR**
N.V., ORANGE AUSTRIA TELECOMMUNICATION
GMBH, formerly known as One GmbH,
ORANGE COMMUNICATIONS S.A., also known as
Orange Switzerland, **ORANGE FRANCE S.A.,**
ORANGE PLC, also known as Orange U.K.,
ORANGE S.A., ORANGE SLOVENSKO A.S., AND
VOX MOBILE S.A.,
Defendants-Appellees,

AND

H3G S.P.A., also known as 3 Italia, **HUTCHISON 3G**
AUSTRIA GMBH, HUTCHISON 3G UK LIMITED,

**AND HUTCHISON TELECOMMUNICATIONS
(HONG KONG) LIMITED,**
Defendants-Appellees,

AND

KDDI CORPORATION,
Defendant-Appellee,

AND

PCCW MOBILE HK LIMITED,
Defendant-Appellee,

AND

YAHOO! INC.,
Defendant-Appellee,

AND

**KABUSHIKI KAISHA NTT DOCOMO AND
SOFTBANK MOBILE CORP.,**
Defendants-Appellees,

AND

M3 WIRELESS LTD.,
Defendant-Appellee,

AND

**NETCOM AS, NOW KNOWN AS TELIASONERA
NORGE AS**
AND TELIA DANMARK A/S,
Defendants-Appellees,

AND

**TMN – TELECOMUNICACOES MOVEIS
NACIONAIS, S.A.,**

Defendant-Appellee,

AND

TELEFONICA GERMANY GMBH & CO. OHG (formerly known as Telefonica O2 Germany GmbH & CO. OHG), **TELEFONICA UK LIMITED** (formerly known as O2 UK Limited), **TELEFONICA IRELAND LIMITED** (formerly known as Telefonica O2 Ireland Limited), **PEGASO PCS, S.A. DE C.V., TELEFONICA MOVILES ARGENTINA, S.A., TELEFONICA MOVILES ESPANA, S.A.U., TELEFONICA CZECH REPUBLIC** (formerly known as Telefonica O2 Czech Republic, A.S.), AND **VIVO, S.A.**,

Defendants-Appellees,

AND

PANNON GSM TELECOMMUNICATIONS LTD., SONOFON A/S, SWISSCOM MOBILE A.G., TDC A/S, TDC SWITZERLAND AG, also known as Sunrise, **TELENOR MOBIL A.S., AND TOTAL ACCESS COMMUNICATION PLC**, also known as DTAC,

Defendants-Appellees,

AND

SONAECOM-SERVICOS DE COMUNICACOES, S.A.,
Defendant-Appellee,

AND

TELECOM ITALIA S.P.A., TELECOM PERSONAL S.A., TIM CELULAR S.A., AND TIM PARTICIPACOES S.A., also known as Tim Brazil,
Defendants-Appellees,

AND

TRUE MOVE COMPANY LIMITED,
Defendant-Appellee,

AND

WIND HELLAS TELECOMMUNICATIONS S.A.
AND WIND TELECOMUNICAZIONI SPA,
Defendants-Appellees,

AND

AVEA ILETISIM HIZMETLERİ A.S.,
Defendant-Appellee,

AND

T-MOBILE USA, INC.,
Defendant-Appellee,

AND

AT&T MOBILITY LLC,
Defendant-Appellee,

AND

TELE-MOBILE COMPANY, also known as Telus
Mobility,
Defendant-Appellee,

AND

ROGERS WIRELESS PARTNERSHIP,
Defendant-Appellee,

AND

MICROSOFT CORPORATION,
Defendant-Appellee,

AND

PALM, INC.,
Defendant-Appellee,

AND

CELLCO PARTNERSHIP, doing business as Verizon
Wireless,
Defendant-Appellee,

AND

**HELIO, LLC, AND SPRINT NEXTEL
CORPORATION,**
Defendants-Appellees,

AND

LG ELECTRONICS MOBILECOMM U.S.A., INC.,
Defendant-Appellee,

AND

MOTOROLA, INC., now known as Motorola Solutions,
Inc.,
Defendant-Appellee,

AND

IDEA CELLULAR LIMITED,
Defendant,

AND

**DEUTSCHE TELEKOM AG, MOBILEONE LTD.,
ORANGE LIMITED, ORANGE NEDERLAND N.V.,
TURKCELL ILETISIM HIZMETLERİ A.S., AND
UPSIDE WIRELESS INC., also known as IPIPI,**
Defendants,

AND

MOTOROLA MOBILITY, INC.,
Intervenor.

2011-1581

Appeal from the United States District Court for the District of Maryland in case no. 07-CV-3012, Judge Alexander Williams, Jr.

Decided: October 17, 2012

JOESPH A. RHOA, Nixon & Vanderhye, P.C., of Arlington, Virginia, argued for plaintiff-appellant. With him on the brief were GORDON P. KLANCNIK and UNDEEP S. GILL.

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Move Company Limited, and Telecom Italia S.P.A., et al., Wind Hellas Telecommunications S.A. et al., Netcom AS, et al., DEA Cellular Limited. With him on the brief were ANDREW R. SOMMER, Winston & Strawn, LLP, of Washington, DC, for the defendants-appellees TNL PCS S.A. and STUART J. SINDER, Kenyon & Kenyon, LLP, of New York, New York, for defendant-appellees T-Mobile (UK), Ltd., et al., DORIS JOHNSON HINES, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, of Washington, DC, for defendants-appellees Advanced Info Service PLC, et al., STEVEN R. SELSBERG, Mayer Brown, LLP, of Houston, Texas, for defendant-appellees America Movil, et al., MATTHEW J. MOORE, Latham & Watkins LLP, of Washington, DC, for defendants-appellees Base N.V./S.A., et al., LOUIS M. SOLOMON, Cadwalader, Wickersham & Taft LLP, of New York, New York, for defendant-appellee Bouygues Telecom S.A., and EDWARD C. DONOVAN, D. SEAN TRAINOR and WILLIAM H. BURGESSION, Kirkland & Ellis, LLP, of Washington, DC, for defendant-appellee KDDI Corporation, and RODERICK R. MCKELVIE, Covington & Burling LLP, of Washington, DC, for defendant-appellee Bermuda Digital Communications Ltd., BRIAN WM. HIGGINS, Blank Rome, LLP, of Washington, DC, for defendant-appellees Chunghwa Telecom Co. Ltd., et al., RUSSELL E. LEVINE, Kirkland & Ellis LLP, of Chicago, Illinois, for defendant-appellee PCCW Mobile HK Limited, and ROBERT C. BERTIN and CATHERINE R. MURPHY, Bingham McCutchen LLP, of Washington, DC, for defendant-appellee M3 Wireless Ltd., and JAMES W. DABNEY, Fried, Frank, Harris, Shriver & Jacobson LLP, of New York, New York, for defendant-appellees France Telecom Espana S.A., et al., and DAVID L. LEICHTMAN and BRYAN J. VOGEL, Robins, Kaplan, Miller & Ciresi L.L.P., of New York, New York, for defendant-appellee TMN – Telecommunicacoes Moveis Nacionais, S.A., and STEPHEN B. KINNAIRD, Paul Hastings, LLP, of Washington, DC, for

defendant-appellees H3G S.P.A., et al., SHERMAN W. KAHN, Morrison & Foerster LLP, of New York, New York, for defendant-appellees Kabushiki Kaisha NTT DoCoMo, et al., SCOTT R. MATTHEWS, Windels, Marx, Lane & Mittendorf, of New York, New York, for defendant-appellee Avea Iletisim Hizmetleri A.S., and STEVEN J. YOUNG, Dewey & LeBoeuf LLP, of New York, New York, for defendant-appellees O2 (Germany) GmbH & Co., OHG, et al., STEPHEN S. MADSEN, Cravath Swaine & Moore, LLP, of New York, New York, for defendant-appellees TeliaSonera Norge AS, et al., EDWARD HAN, Arnold & Porter, LLP, of Washington, DC, for defendant-appellee Rogers Wireless Partnership, and ROBERT C. NISSEN and WILLIAM T. ENOS, Nissen & Associates, of Washington, DC, for defendant-appellees Pannon GSM Telecommunications Ltd., et al., BRIAN C. RIOPELLE, McGuire Woods LLP, of Richmond, Virginia, for defendant-appellee Sonaecom-Services de Comunicacoes, S.A., and JAY F. UTLEY, W. BART RANKIN and NATHAN A. ENGELS, Baker & McKenzie LLP, of Dallas, Texas, for defendant-appellee True Move Limited Company, and MAXIMILIAN A. GRANT, Latham & Watkins LLP, of Washington, DC, for defendant-appellees Telecom Italia S.P.A., et al., and ADAM GAHTAN, White & Case LLP, of New York, New York, for defendant-appellees Wind Hellas Telecommunications, S.A., et al.

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PARKER. Also on the brief were RAMSEY M. AL-SALAM and KAUSTUV M. DAS, Perkins Coie, LLP, of Seattle, Washington, for defendant-appellee T-Mobile USA, Inc., and KEVIN P. ANDERSON, JAMES H. WALLACE, JR., and KARIN HESSLER, Wiley Rein LLP, of Washington, DC, for defendant-appellee Cellco Partnership (d/b/a/ Verizon Wireless), and MICHAEL J. MCKEON and LINDA LIU KORDZIEL, Fish & Richardson P.C., of Washington, DC, for defendant-appellee LG Electronics MobileComm U.S.A., Inc., and ANDREW R. SOMMER, CYRUS T. FRELINGHUYSEN, and GREGORY P. EATON, Winston & Strawn, LLP, of Washington, DC, and JONATHAN E. RETSKY, of Chicago, Illinois, for defendant-appellee Motorola Solutions, Inc., (f.k.a. Motorola, Inc.), and BRIAN M. KOIDE, Crowell & Moring LLP, of Washington, DC, for defendant-appellees, Sprint Nextel Corporation and Helio, LLC, and MICHAEL M. MARKMAN and ROBERT J. WILLIAMS, Covington & Burling LLP, of San Francisco, California, for defendant-appellee Palm, Inc.,

GEORGE F. PAPPAS, Covington & Burling, LLP, of Washington, DC, argued for defendants-appellees Clickatell (PTY) LTD., Yahoo!, Inc. and Microsoft Corporation. With him on the brief were PETER A. SWANSON, ERICA N. ANDERSEN, for defendant-appellee, Microsoft Corporation, and ADAM R. ALPER, Kirkland & Ellis, LLP, of San Francisco, California, for defendant-appellee, Yahoo!, Inc. Of counsel were STEFANI E. SHANBERG and ROBIN L. BREWER, Wilson Sonsini Goodrich & Rosati, of Palo Alto, California, for defendant-appellee Clickatell (PTY) Ltd.

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Before BRYSON, PROST, and REYNA, *Circuit Judges.*
BRYSON, *Circuit Judge.*

On November 8, 2007, Technology Patents LLC (“TPL”) sued more than 100 domestic and foreign defendants for infringement of U.S. Patents No. 6,646,542 (“the ’542 patent”) and No. RE39,870 (“the ’870 patent”). The allegations concerning the ’542 patent were subsequently withdrawn, so only the ’870 patent is at issue in this appeal. The defendants can be classified into three groups: (1) the domestic carriers and handset companies, including AT&T, T-Mobile, Sprint, Motorola, and others (collectively, “the domestic carriers”); (2) the software providers, including Microsoft, Yahoo, and Clickatell (collectively, “the software providers”); and (3) the foreign carriers, including T-Mobile operating in various countries, Vodafone operating in various countries, and many others (collectively, “the foreign carriers”).

The district court dismissed the case against the foreign carriers for lack of personal jurisdiction, and it granted summary judgment of noninfringement in favor of the domestic carriers and the software providers, but on separate grounds. TPL appeals from all three orders. We reject TPL’s request that we reinstate the claims against the domestic carriers and the foreign carriers; as to the claims against the software providers, we affirm the district court’s order in part and vacate that order in part, and we remand to the district court for further proceedings on that aspect of the case.

I

The '870 patent describes a “global paging system utilizing a land-based packet-switched digital data network (e.g. the Internet) and a feature for permitting subscribers to remotely designate countries in which they are, or expect to be, located.” '870 patent, col. 1, ll. 16-19. The patent asserts that the prior art was deficient because it did not fulfill the need for a cheap and efficient global paging system that allows users who expect to receive messages or pages abroad to “remotely input country designations in which they are to be paged.” *Id.*, col. 2, ll. 33-35. In criticizing the prior art, the patent disparages automatic roaming, noting that “other than the roaming feature, the receiving user cannot input into the system designated country locations where he or she expects to be in the future [and] the roam feature is undesirable and expensive.” *Id.*, col. 2, ll. 22-31. The patent further states, “[I]t would be desirable to not require the callee’s cellular phone to continuously have to update the system via roaming, for example, as to its location, as this is expensive and inefficient.” *Id.*, col. 2, ll. 47-50.

The district court accurately described how the invention of the '870 patent sought to cure the deficiencies of the prior art:

The '870 Patent solved this problem by claiming a system which allows for paging of the receiving user (“RU”) in countries where the RU “may be located,” as per a list input by the RU. (*See, e.g., id.* at 10:14-20.) A general description of the system follows. The RU must set up a list of countries that “he or she wishes to be reachable in by way of the paging system,” and these are the

only countries where the RU can be paged. (*Id.* at 6:22-24.) When traveling, the RU may designate the country where he or she is located. (*Id.* at 6:29-50.) To contact the RU, the originating user (“OU”) contacts the “paging gateway” through the public-switched telephone network (“PSTN”) or email and inputs the RU’s “pager ID” along with a “paging message.” (*Id.* at 3:54-57.) The system then checks for the RU’s country designation, and pages the RU in that country, if access is possible. (*Id.* at 5:23-30.) If the RU’s pager cannot be accessed in the designated area, or if the RU has not designated a country, the originating server retrieves the previously input country list, attempts to page the RU at the first country on the list, and if unsuccessful, proceeds to attempt to page the RU at the second country on the list, and if unsuccessful, continues through the list, a certain number of times. (*Id.* at 5:53-60, col.8:13-20) Once the system reaches the RU, a website or server transmits the message through a land-based digital data network (e.g. the Internet) to the RU’s device. (*Id.* at 5:53-64.)

Claim 4, the only independent claim asserted against the domestic carriers, recites:

4. A system for paging a receiving user in a country-selective paging system, comprising:

a paging system spanning a plurality of different countries of the world, the paging system including a plurality of servers, and wireless transmitters in different countries for transmitting paging messages to receiving users;

at least a packet-switched digital data network interconnecting servers so as to permit digital communication of signals between the plurality of servers via at least the packet-switched digital data network;

a first website or server located in a first country for allowing an originating user to page the receiving user who may be located in a second country different from the first country, the originating user not necessarily knowing what country the receiving user is located in;

wherein the paging system determines if the second country is currently designated by the receiving user as a designated country in which the paging system is to attempt to page the receiving user;

when the paging system determines that the second country has been designated by the receiving user, means for sending a paging communication via at least the packet-switched digital data network to a second website or server, the second website or server being in communication with a wireless transmitter located in the second country, and wherein the paging communication causes the second website or server to initiate paging the receiving user via the wireless transmitter in the second country; and

when the paging system determines that the second country has not been designated by the receiving user, the paging system initiates paging operations in another country in a prede-

terminated order in an attempt to page the receiving user.

And claim 11, which is representative of the claims asserted against only the software providers, recites:

11. A system for paging a receiving user via a website and a digital data network, comprising:
 - a) a website for receiving a paging signal from an originating user, the originating user being located in a first country and the paging signal including a device ID of the receiving user and a paging message to be sent to the receiving user;
 - b) means for designating a second country, from a plurality of potential countries, in which the receiving user is to be paged, by using country data;
 - c) means for transmitting the paging message over at least a digital data network to a computer, the computer being in communication with a wireless transmitter that is located in the designated second country;
 - d) the computer causing the wireless transmitter located in the second country to page the receiving user;

and wherein said designating by the means for designating in b) is carried out by the originating user when the originating user electronically messages the website, the originating user inputting the country data

to the website to designate the second country.

On August 29, 2008, the district court granted the foreign carriers' motion to dismiss for lack of personal jurisdiction. The court found that the foreign carriers did not have sufficient "minimum contacts" with the State of Maryland or with the United States as a whole to be subject to personal jurisdiction in the forum.

Almost two years later, on August 25, 2010, the district court issued a claim construction order construing dozens of claim terms. Several weeks later, the court granted summary judgment in favor of the software providers. The court held that TPL's infringement contentions required multiple actors and that TPL had failed to produce evidence sufficient to satisfy the proof requirements for joint infringement.

On August 4, 2011, the district court granted summary judgment of noninfringement to the domestic carriers. The court explained its ruling as follows:

[TPL's] description of the accused system simply does not even resemble [the asserted independent claim], much less literally match it. In all of the scenarios provided by [TPL], it is the receiving handset, not the RU, that inputs the country code into the Defendants' system. In manual mode, all the RU does is select a carrier. In automatic mode, the RU does not even do this much: instead of selecting a particular network carrier from a list, the RU simply clicks "automatic," at which point the handset selects a carrier without any further input from the RU.

On appeal, TPL presents several arguments, including: (1) the district court erroneously construed several claim terms; (2) the district court erroneously granted summary judgment of noninfringement to the domestic carriers; (3) the district court erroneously granted summary judgment of noninfringement to the software providers; and (4) the district court erroneously dismissed the foreign carriers for lack of personal jurisdiction.

II

TPL first takes issue with the district court's construction of several claim limitations. We address only the three limitations relevant to the district court's summary judgment orders.

A

The term "receiving user" appears throughout the asserted claims. The district court construed the term to mean a person or party. TPL argues that "receiving user" means "the combination of the person and the handset." We disagree with TPL and affirm the district court's construction.

TPL rests its case on the distinction between an "originating user" and a "receiving user." The patent states that "the term 'originating user' (OU) is used herein to describe the person or party who originates a page or cellular phone call, i.e. the one who desires to page or call the receiving user." '870 patent, col. 3, ll. 50-52. The patent also states that "[t]he term 'receiving user' (RU) is used herein to define the recipient of a page or cellular phone call." *Id.*, col. 3, ll. 47-50. TPL argues that because the patent explicitly defines the originating user as a "person or party" but does not use that language with

respect to the receiving user, a receiving user is not so limited. For support, TPL relies on dictionary definitions for the terms “recipient” and “one,” even though those terms do not appear in the claim language at issue.

The intrinsic evidence rebuts TPL’s argument. The text of the patent makes clear that the term “receiving user” does not refer to a person-pager combination. First, the written description repeatedly describes the “receiving user” as either male or female, clearly contemplating that the receiving user is a person. *E.g.*, ’870 patent, col. 6, ll. 17-19 (“When the subscriber or RU first subscribes . . . he or she is assigned a pager #”); col. 6, ll. 20-21 (“the subscriber or RU inputs his or her ‘list’ of countries”); col. 6, ll. 28-30 (“the RU at 35 lists the countries in the order he or she wishes that they be accessed”).

Second, the specification repeatedly refers to the receiving user as possessing things. In fact, the specification on numerous occasions states that the receiving user possesses a pager, demonstrating that the receiving user and the pager are distinct entities. The phrase “receiving user’s pager” or the equivalent appears in the specification more than a dozen times. *E.g.*, ’870 patent, col. 6, ll. 56-57 (“the RU’s pager . . . acknowledges receipt of a page”); col. 7, line 67, through col. 8, line 1 (“the RU’s pager indicates receipt”); col. 3, ll. 7-8 (“pager of the receiving user”). The claims themselves even differentiate between the receiving user and the pager. *E.g., id.*, claim 1 (“transmitting a paging message to a pager of the receiving user”); claim 23 (referring to “a device of the receiving user”). Those references make clear that a receiving user is not a person-pager combination because, if it were, it would make no sense to refer to the receiving user as possessing a pager.

Third, the patent uses the terms “receiving user” and “subscriber” interchangeably. *E.g.*, ’870 patent, col. 6, ll. 14-15 (“illustrating how a subscriber (RU) subscribes to the pager system”). A subscriber is a person, not a person-device combination.

TPL argues that claims 6, 31, and 39 prove that its position is correct, but in fact those claims support the district court’s construction. Claim 6 contains the limitation “means for the receiving user confirming receipt of a paging message.” Claim 31 contains nearly identical language. The parties agree that the corresponding structure for that limitation is a pager. The clear implication of the claim language is that a receiving user uses a pager to confirm receipt of a paging message. It is unclear why TPL believes the “means for receiving” limitation supports its position, because if the receiving user were a person-pager combination, the combination would not need a “means for . . . confirming receipt.” If anything, that claim language makes clear that the pager and the receiving user are distinct from each other. TPL relies on claim 39 because it recites, “the receiving user . . . confirming receipt of a paging message.” Just as with claims 6 and 31, however, the receiving user may use a pager to confirm receipt. The ability of the receiving user to use a device to confirm receipt of a message does not establish that the receiving user must be a person-pager combination. TPL also relies on various other portions of the patent for support, such as references to the “device of the receiving user.” As discussed above, however, the fact that the receiving user possesses the pager tends to prove that the two are distinct: If the receiving user were a person-pager combination, there would be no need to reference the receiving user’s pager. Accordingly, we uphold the district court’s construction of the term “receiving user.”

B

The phrase “initiates paging operations in another country in a predetermined order” appears in claim 4. The district court construed that phrase to mean “begins to page the receiving user in another country that is first in an ordered list of two or more countries created by the receiving user before the paging system determines whether any country has been designated.” The parties agree, and the patent makes clear, that the term “predetermined order” refers to an ordered list of countries in which the receiving user is to be paged if he fails to designate the country in which he is located. TPL argues that the ordered list need not be “created by the receiving user” as required by the district court’s construction. We disagree with TPL.

TPL argues that the claim language itself does not require the ordered list to be created by the receiving user and that nothing in the specification limits the claim in that manner. It may be true that the “predetermined order” language itself does not specify who or what determines the order of the listed countries, but the claim language makes clear that someone or something determines that order. The only question is whether it is a person (the receiving user) or a device. TPL’s argument that the order need not be determined by the receiving user ignores a substantial amount of intrinsic evidence and the very purpose of the claimed invention.

One of the primary purposes of the invention was to allow users to be paged only in countries that they selected, rather than in countries automatically selected by the devices they use. As noted above, in criticizing prior art systems, the patent states that, “other than the roaming feature, the receiving user cannot input into the

system designated country locations where he or she expects to be in the future; . . . the roam feature is undesirable and expensive.” ’870 patent, col. 2, ll. 22-31. The patent further states, “it would be desirable to not require the callee’s cellular phone to continuously have to update the system via roaming, for example, as to its location, as this is expensive and inefficient.” *Id.*, col. 2, ll. 47-50. If the ordered list referred to by the “predetermined order” language of the claim did not need to be created by the receiving user, the claim would arguably cover the very roaming system that the patent criticized.

Moreover, the patent makes clear that the ordered list, which dictates the “predetermined order” of the claim, is created by the receiving user. *E.g., id.*, col. 6, ll. 28-32 (“[T]he RU at 35 lists the countries in the order he or she wishes that they be accessed in the event that no country or area has been designated. In other words, in step 35 the RU lists his or her accessible countries in the order in which he or she is most likely to be in them.”); col. 6, ll. 20-21 (“the subscriber or RU inputs his or her ‘list’ of countries to be serviced”); col. 2, ll. 34-37 (“receiving users . . . may remotely input a list of countries in which they desire paging services”). TPL’s proposed construction would remove the source of the predetermined order, which goes to the heart of the invention’s alleged improvement over the prior art. We therefore see no error in the district court’s construction of the term “predetermined order” or the phrase “initiates paging operations in another country in a predetermined order.”

C

Many of the asserted claims require the paging system to determine whether the receiving user has “designated” a country in which the system is to attempt to

page him. For example, claim 4 contains a limitation that recites, “wherein the paging system determines if the second country is currently designated by the receiving user.” The district court construed that limitation to mean, “wherein the paging system determines if the receiving user has input a selection of the second country.” In other words, the district court determined that a receiving user (i.e., a person, not a device) designates a second country by inputting a selection of that second country. TPL argues that the designation (or inputting) need not be done by the “person of the RU” but instead can be done automatically by the “pager of the RU.” In large part, this goes back to TPL’s contention that the receiving user is a person-pager combination—a contention that we have already rejected.

On this issue, TPL points to two embodiments of the invention that allegedly show that the phone itself (“the pager of the RU”) designates a second country. First, it points to “an embodiment where the RU renews a designated country.” For support, TPL points to the following passage in the specification:

As shown in step 39, designated country data input by the RU is automatically erased after a pre-determined period of time (e.g. 30 days). When deletion occurs, the system automatically pages the RU and informs the RU that his/her designated country data has been deleted from the system. At this point in time, the RU may E-mail or call up any web site or server 9 in the paging system and either renew his designated country or enter a new designated country or coverage area.

’870 patent, col. 7, ll. 5-13. Second, TPL relies on “an embodiment where the ‘RU’s designated country’ is auto-

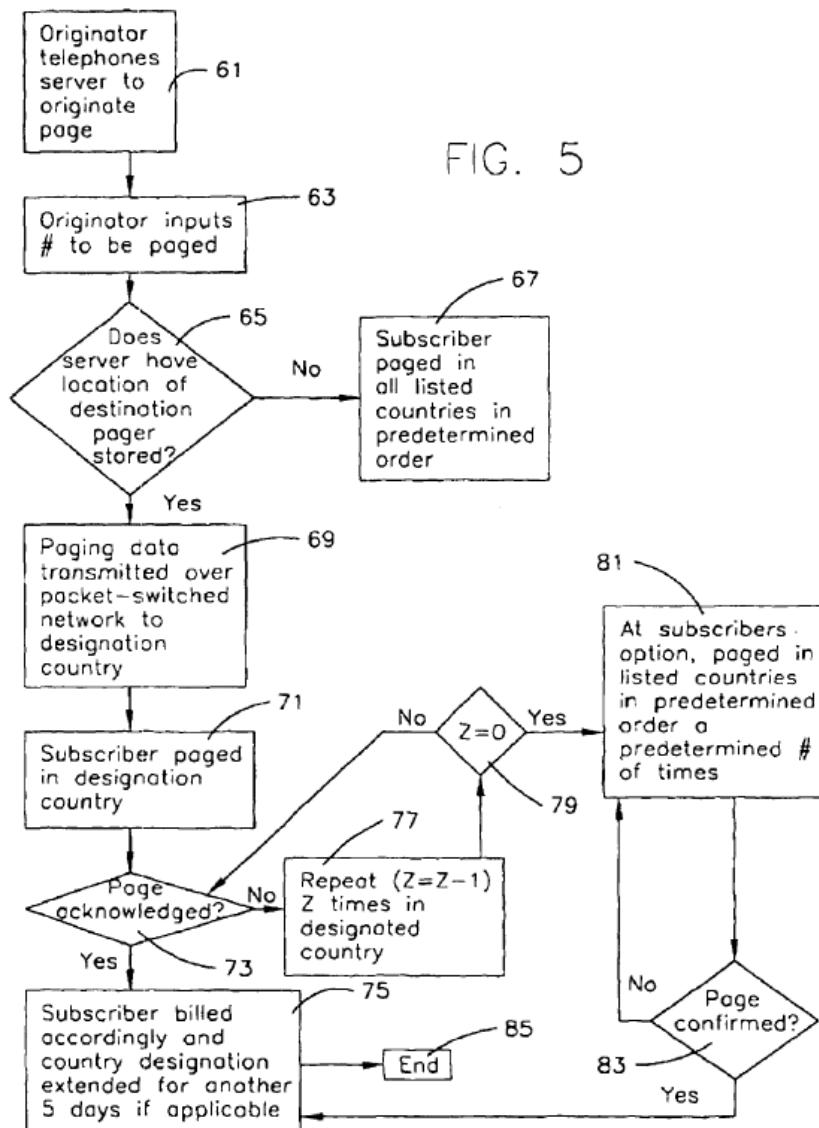
matically changed by the pager of the RU when the pager confirms receipt of a page.” TPL points to the following passage for support:

When it is determined in step 79 that Z finally equals 0, the system stops attempting to page the RU in the designated country, and retrieves the RU’s list of service countries and performs pages therein a predetermined number of times as discussed above in step 81. In step 81, the paging systems [sic] continues to page the RU in his listed countries until either receipt of the page is confirmed 83, or until the process has been performed a predetermined number of times. If the page is confirmed, the subscriber is billed accordingly in step 75. According to certain alternative embodiments, if a page is confirmed 83 during the step 81 process, then in step 75 the RU’s designated country may be automatically changed so as to correspond to the country or coverage area in which the page was confirmed at 83. After step 75, the transaction is ended 85.

Id., col. 8, ll. 20-35. TPL argues that in the first embodiment (the renewal embodiment), “the person of the RU designates the country,” whereas in the second embodiment (the automatic embodiment), “the pager of the RU designates the country when sending a confirmation signal.”

TPL’s argument is not persuasive. It is clear in both embodiments that the receiving user (the person, not the device) must designate a country in order for anything to happen. Nothing in either of those passages suggests that the receiving user is a device, rather than a person. TPL admits as much with respect to the first embodi-

ment. Appellant's Br. at 49 ("In the renewal embodiment, the person of the RU designates the country . . ."). With respect to the second embodiment, TPL claims that the "pager of the RU" designates the country. In order to receive a page in the first place, however, the receiving user must have created an ordered list or manually designated a country. Figure 5 of the '870 patent confirms that requirement:



The figure shows that the automatic updating of block 75 occurs only after (1) the receiving user has designated a country (block 65); (2) the paging system cannot find the receiving user in that designated country (blocks 73, 77, 79); (3) the paging system retrieves the receiving user's

list of service countries (block 81); and (4) the paging system receives a confirmation that the page was received in one of the countries that the user had previously input when he created his ordered list (block 83). '870 patent, col. 7, line 54, through col. 8, line 2. Nothing in the figure suggests that the receiving user can be a device rather than a person. It is thus clear that to reach a point at which anything happens automatically, the receiving user (the person) has to input (designate) a country.

In any event, even if the specification described a system in which the device could designate the country, the claims do not cover such a system. The claim limitation at issue expressly recites “designated by the receiving user.” Because, as we have determined, the receiving user is a person, and not a person-pager combination, it is clear that the designation must be done by a person. For those reasons, we affirm the district court’s construction.

III

TPL next argues that the district court erred in granting summary judgment of noninfringement to the domestic carriers and to the software providers.

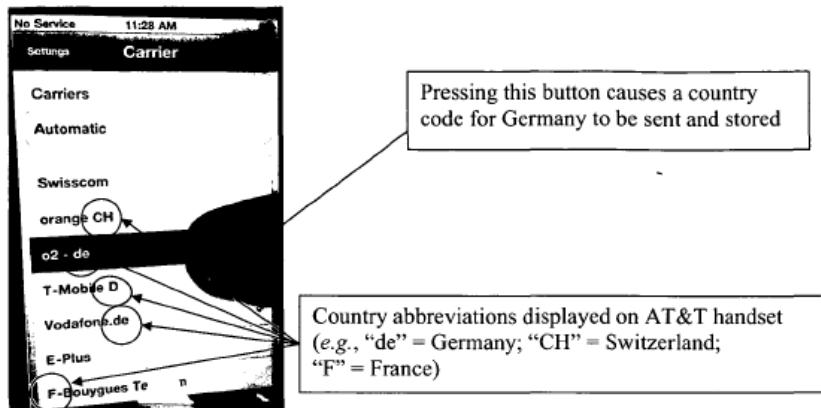
A

TPL asserted independent claim 4 and dependent claims 5-8 of the '870 patent against the domestic carriers. TPL contends that the domestic carriers infringe those claims even if we affirm the district court’s claim construction, as we have done. We disagree with TPL.

The district court found that “[TPL’s] description of the accused system simply does not even resemble Claim 4, much less literally match it.” As described above, the

claims asserted against the domestic carriers require that a receiving user designate a second country. If the system determines that no second country has been designated, it initiates paging operations in a predetermined order, based on an ordered list created by the receiving user of other countries in which the receiving user might be located.

TPL's theory of infringement relies heavily on the following image that TPL introduced into the summary judgment record:



The image shows what happens in the accused systems when, for example, an American cell phone user takes a phone to Europe. The person (the receiving user) must select a carrier. The top of the image is clearly labeled "Carrier" (not "Country" or "Location"). Below "Carriers," several options are listed. The receiving user can choose "Automatic," which allows the phone to automatically choose a carrier. Otherwise, the receiving user can choose a specific carrier such as Swisscom, orange CH, etc. TPL's theory of infringement is that when a receiving user selects one of the carriers, he has "designated" a second country, as required by the claims. Furthermore,

TPL asserts that when the receiving user selects a carrier, he also creates an ordered list because the selected carrier becomes the first country in the list, and the receiving user's home country (i.e., the United States) becomes the second country in the list, thereby satisfying the "predetermined order" requirement of the claims. The district court correctly found that TPL's theory of infringement failed with respect to three claim limitations.

First, the district court found that the accused products do not enable the receiving user to designate a country. It is clear that the accused products enable a receiving user to select only a carrier. The image provided by TPL shows that it is a carrier and not a country that is selected by the receiving user. It is true that some of the carriers have a country label within the name (e.g., "orange CH," where CH represents Switzerland; "O2 – de" where de represents Germany, etc.). But others do not (e.g., "E-Plus"). It is undisputed that the accused products do not allow a receiving user to select a country apart from a carrier.

TPL argues that the carrier/country distinction is insignificant. The district court disagreed, and so do we. The specification and the claims make clear that the invention is concerned with the country in which the receiving user is located, not with the receiving user's carrier. For instance, the abstract of the patent states that "the receiving user inputs a designated country . . ." The patent notes that the "invention relates to [a system] . . . for permitting subscribers to remotely designate countries in which they are, or expect to be, located." '870 patent, col. 1, ll. 15-19. The specification repeatedly makes references to the receiving user's location. *E.g.*, *id.*, col. 1, ll. 59-61 (prior art systems "do not permit the subscriber to remotely select or designate countries in

which he or she will most likely be"); col. 2, ll. 32-37 ("It is apparent from the above that there exists a need in the art for a more efficient global paging system in which potential receiving users or subscribers may remotely input country designations in which they are to be paged, and/or may remotely input a list of countries in which they desire paging services."). The claim language itself makes clear that it is the country in which the receiving user is located, not the carrier he is using, that is important: "A system for paging a receiving user in a country-selective paging system . . . knowing what country the receiving user is located in . . ." *Id.*, claim 4.

If a receiving user were limited to selecting a carrier corresponding to the country in which he was located, TPL's argument that the carrier/country distinction is insignificant would be stronger. However, the image provided by TPL shows multiple carriers and at least three different country abbreviations: orange CH and Swisscom correspond to Switzerland; O2 – de, T-Mobile D, and Vodafone.de correspond to Germany; and F-Bouygues corresponds to France. The image thus demonstrates that a carrier based in one country can serve a receiving user in another. The receiving user could be located in, for example, France, but nevertheless select a carrier with a German or Swiss country code. That possibility reveals that the accused systems allow a receiving user to designate a carrier based on which carriers provide service at the receiving user's location, regardless of what country that happens to be. The accused systems do not care where the receiving user is located, and they do not enable the receiving user to designate the country in which he is located, as contemplated by the claims; they only allow the receiving user to select a carrier. Therefore, the accused systems do not

satisfy the claim limitations requiring that a second country be “designated by the receiving user.”

Second, the accused systems do not meet the “predetermined order” limitation of claim 4 because the accused systems do not enable the receiving user to create an ordered list. TPL argues that the receiving user creates an ordered list when the receiving user selects a carrier. Essentially, TPL claims that when the receiving user selects a carrier, the system will page the user first in the home country of the selected carrier, and then in the United States. According to TPL, that constitutes the creation of an ordered list of two countries. We reject that argument.

TPL’s own theory proves that the receiving user does not create anything, much less an ordered list of countries. As described above, the receiving user selects a carrier—nothing more. The patent provides a detailed description of how the ordered list is created:

Then, or at the same time, the RU at 35 lists the countries in the order he or she wishes that they be accessed in the event that no country or area has been designated. In other words, in step 35 the RU lists his or her accessible countries in the order in which he or she is most likely to be in them. For example, if the RU spends most of his time in the U.S. and Japan, the next most amount of time in France, some time in the U.K., Spain, Brazil, and Australia, and very little time in Mexico, the RU would likely, in step 35, list his/her countries in the following order:

1. United States
2. Japan
3. France

4. Spain
5. United Kingdom
6. Brazil
7. Australia
8. Mexico

Given such a list, the RU may only be paged in these eight countries.

'870 patent, col. 6, ll. 28-49. TPL has provided no evidence that the accused systems follow a procedure resembling that description in any way.

Even if the accused systems can be viewed as creating an ordered list of two countries when the receiving user selects a carrier, it is undisputed that the receiving user cannot predetermine the order or the content of the list. The receiving user has no control over the fact that the United States is the second country in the list. Yet, as the patent makes clear, the essential purpose of the ordered list is to allow the receiving user to list countries of his choice in which he can be paged: "the RU lists his or her accessible countries in the order in which he or she is most likely to be in them. . . . Given such a list, the RU may only be paged in [the listed] countries." '870 patent, col. 6, ll. 31-49. Indeed, the patent implies that being able to choose the countries in which the receiving user would like to be paged, and to exclude those in which he does not wish to be paged, is an important feature of the claimed invention: "In other words, the RU may not be paged in a country or coverage area unless that country is listed in step 33." *Id.*, col. 6, ll. 24-25. In the accused systems, the receiving user has no control over the selection of the United States as a country in the alleged list, nor does he have control over the order of the alleged list. Accordingly, we agree with the district court that the accused

systems do not satisfy the “predetermined order” requirement of the asserted claims.

Third, we agree with the district court’s conclusion that the accused systems do not “determine[] if the second country is currently designated by the receiving user,” as required by the asserted claims. As noted, the claimed invention contemplates two methods by which the receiving user can be contacted: a primary and a fallback. The primary method involves designation of the receiving user’s country by the receiving user. If the claimed invention “determines” that a country has been designated by the receiving user, it contacts the user in that country. If the claimed invention “determines” that a second country has not been designated, it resorts to the second method, which involves paging the receiving user according to an ordered list. Which method the system uses depends on whether the receiving user has “designated” a country. The system must therefore “determine” whether such a designation has been made before deciding how to page the receiving user.

As described above, however, the accused systems allow the receiving user to perform only a single action: selecting a carrier. TPL’s theory requires the selection of the carrier to constitute both the act of designating the second country and the act of creating the ordered list, as TPL’s expert acknowledged:

Q. So there’s no—just so I understand, there’s no difference that you can identify between the act of designating and the act of creating the ordered list?

A: Off the top of my head, I don’t—I don’t think I can think of any, no.

If the act of selecting a carrier constitutes both designating a country and creating an ordered list, then the accused systems have nothing to determine; they have only one way to page the receiving user. Put simply, TPL has failed to show that the accused systems “determine” which of two methods should be used to contact the receiving user because TPL has not shown that the accused systems are capable of using alternative methods. Based on the evidence presented, it appears that the accused systems page the receiving user by a single method; there is no “determination” to be made. Accordingly, we affirm the district court’s finding that the accused products do not literally infringe the asserted claims.

We also reject TPL’s doctrine of equivalents argument. As described above, the distinction between selecting a carrier and selecting a country is not insignificant in the context of this patent. The patent is concerned with allowing the receiving user to select a country in which he is located or to create a list of countries in which he expects to be located. In contrast, the accused systems do not provide for designation of the country in which the receiving user is located; they provide only for designation of the carrier serving the receiving user’s location. That is a fundamental difference between the accused systems and the claimed invention that goes to the heart of the claimed invention. Applying the doctrine of equivalents would bypass each of the claim limitations described above, i.e., “second country . . . designated by the receiving user,” “predetermined order,” and “determines if the second country is currently designated by the receiving user.” In sum, as the district court observed, the accused systems “do[] not even resemble” the claimed invention, so the doctrine of equivalents has no application in this case.

A final, related issue concerns the district court's denial of TPL's motion to amend its claim charts "as futile." TPL argues that "[t]he district court's denial . . . should be reversed/vacated as a function of the reversal/vacation of summary judgment in favor of AT&T et al." Because we have affirmed the judgment in favor of the domestic carriers, we need not address that issue.

B

TPL asserted claims 4-6, 8-9, 11-18, and 21-35 against the software providers. The district court granted summary judgment of noninfringement to the software providers with respect to all the asserted claims.

Claims 4-6, 8-9, 13, 15-18, 25, and 29-35 all contain one or more of the claim limitations discussed above with respect to the domestic carriers (i.e., "second country . . . designated by the receiving user," "predetermined order," and "determines if the second country is currently designated by the receiving user"). Because TPL has not produced sufficient evidence that the accused systems are even capable of meeting those limitations, the software providers cannot infringe them. With respect to those claims, we affirm the district court's grant of summary judgment of noninfringement on that basis.

Claims 11, 12, 14, 21-24, and 26-28 do not contain those claim limitations. The district court found that TPL's contentions with respect to those claims failed because those claims require multiple actors and TPL failed to show that the defendants have direction or control over the end users. In so ruling, the district court relied on this court's cases involving "joint" or "divided" infringement. *See BMC Resources, Inc. v. Paymentech, L.P.*, 498 F.3d 1373 (Fed. Cir. 2007); *Muniauction, Inc. v.*

Thomson Corp., 532 F.3d 1318 (Fed. Cir. 2008). Although this court has recently revisited the issue of divided infringement in the en banc decision in *Akamai Technologies, Inc. v. Limelight Networks, Inc.*, No. 2009-1372 et al. (Fed. Cir. Aug. 31, 2012), that decision does not affect our analysis because claims 11, 12, 14, 21-24, and 26-28 do not present an issue of joint or divided infringement. That is because, contrary to the district court's ruling, those claims do not require performance by multiple actors. Representative claim 11 requires action only by the originating user, and TPL's claim charts for each of the listed claims do not require multiple actors. Furthermore, TPL appears to have raised a single-actor theory in an August 4, 2008, opposition to a motion to dismiss. In that pleading, TPL argued that “[t]he sender puts the invention into action or service, and controls the transmission of messages.” TPL cited *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1313-17 (Fed. Cir. 2005), for support. In that case, we noted that “[t]he ordinary meaning of ‘use’ is to ‘put into action or service.’” *Id.* at 1317. And in *Centillion Data Sys., LLC v. Qwest Communications International, Inc.*, 631 F.3d 1279, 1284 (Fed. Cir. 2011), we held that “to ‘use’ a system for purposes of infringement, a party must put the invention into service, *i.e.*, control the system as a whole and obtain benefit from it.” Importantly, we noted that the user does not necessarily need to “have physical control over” all elements of a system in order to “use” a system. *Id.* at 1284. Accordingly, we vacate the district court's judgment with respect to claims 11, 12, 14, 21-24, and 26-28. On remand, the court should consider whether TPL has produced sufficient evidence to create a genuine dispute as to any material fact with respect to infringement of those claims.

Moreover, unless the software providers are barred from raising the argument at the district court for some reason, the district court may also consider the software providers' argument that "TPL has no evidence that Clickatell and Yahoo!'s users designate the country 'in which [the] receiving user [i.e., the Cellular Customer] is to be paged.'" That argument was raised for the first time on appeal as an alternative ground of affirmance. Because it was not raised previously, we decline to address it. The issue is most appropriately considered in the first instance by the district court.

IV

The district court dismissed the claims against the foreign carriers for lack of personal jurisdiction. The court held that it lacked personal jurisdiction over the foreign carriers under Fed. R. Civ. P. 4(k)(1) because Maryland's long-arm statute does not confer jurisdiction over the foreign carriers. It further held that even if Maryland's long-arm statute conferred personal jurisdiction over the foreign carriers, personal jurisdiction could not be exercised over those defendants consistent with due process because the foreign carriers do not have sufficient "minimum contacts" with the State of Maryland. The district court also held that it lacked personal jurisdiction over the foreign carriers under Fed. R. Civ. P. 4(k)(2), referred to as the "federal long-arm statute," *Synthes (U.S.A.) v. G.M. Dos Reis Jr. Ind. Com de Equip. Medico*, 563 F.3d 1285, 1290 (Fed. Cir. 2009), because the foreign carriers do not have sufficient contacts with the United States as a whole such that the exercise of personal jurisdiction over them would comport with due process.

TPL argues that the district court's ruling on personal jurisdiction was erroneous and that, in any event, the court should have permitted TPL to conduct jurisdictional discovery. In light of our ruling on the summary judgment granted to the domestic carriers, it is unnecessary for us to reach the question whether the foreign carriers were properly before the district court under either subsection of Fed. R. Civ. P. 4(k). The allegations against the foreign carriers in the complaint make clear that TPL's theory of infringement with respect to the U.S. activities of the foreign carriers depends on the foreign carriers' "roaming agreement" contracts with domestic carriers. TPL alleges that those agreements enable the customers of the foreign carriers to use the services of the domestic carriers to send and receive messages in the United States, "thereby infringing the patents in suit," and that the roaming agreements make the foreign carriers jointly liable for infringement with the domestic carriers. TPL acknowledges in its brief that the foreign carriers' liability for infringement "arises directly from these messaging agreements/contracts" (TPL Br. at 14), which enable foreign carrier customers to use domestic carrier networks while traveling in the United States. That is, the infringement case against the foreign carriers necessarily depends on proof that the messaging services provided by the domestic carriers are infringing. As the foreign carriers put it in their brief, "the foreign carriers' alleged infringement 'piggybacks' the U.S. carriers' alleged infringement and occurs when the foreign carriers' foreign subscribers travel to the United States and send a message." TPL does not take issue with that characterization of its theory of infringement in its briefs, and it conceded at oral argument that there is "much overlap" between the claims against the domestic carriers and the claims against the foreign carriers; TPL added that depending on the rationale for the court's ruling, a decision in favor of

the domestic carriers would dispose of the case against the foreign carriers as well.

The rationale of the ruling in favor of the domestic carriers is that the messaging services that the domestic carriers offer (and that the customers of the foreign carriers are able to use pursuant to the roaming agreements) do not infringe. Based on TPL's theory of infringement and the ground on which the district court ruled in favor of the domestic carriers, the district court's determination that the domestic carriers do not infringe the '870 patent necessarily means that the foreign carriers also do not infringe. Our ruling sustaining the district court's decision in favor of the domestic carriers thus dooms TPL's claim of infringement against the foreign carriers as well. For that reason, it is unnecessary for us to decide whether the district court was correct in dismissing the case against the foreign carriers for lack of personal jurisdiction.¹

¹ A federal court generally may not rule on the merits of a case without first determining that it has jurisdiction over the subject matter and the parties. *Sinochem Int'l Co. v. Malaysian Int'l Shipping Co.*, 549 U.S. 422, 430-31 (2007). In a case such as this one, however, where the court plainly has subject matter jurisdiction and has personal jurisdiction over the domestic carriers, and where the merits issues are the same for both the domestic and foreign carriers, it is permissible for the court to address the merits of the claims against the foreign carriers before addressing the issue of personal jurisdiction as to those defendants. See *Chevron Corp. v. Naranjo*, 667 F.3d 232, 246 n.17 (2d Cir. 2012). We have already ruled in favor of the domestic carriers on the merits, so even if we were to hold that the district court has personal jurisdiction over the foreign carriers, the consequence would be to reinstate the plaintiff's claims against those defendants only to have them promptly dismissed on the merits.

V

In sum, we hold that the district court properly granted summary judgment of noninfringement to the domestic carriers and that the judgment against the domestic carriers applies equally to the foreign carriers; we affirm the district court's grant of summary judgment of noninfringement to the software providers with respect to claims 4-6, 8-9, 13, 15-18, 25, and 29-35, but we vacate the district court's grant of summary judgment of noninfringement to the software providers with respect to claims 11, 12, 14, 21-24, and 26-28 and remand those claims for proceedings consistent with this opinion.

Costs are awarded to the domestic carriers and the foreign carriers. As to the claims against the software providers, all parties shall bear their own costs for this appeal.

**AFFIRMED IN PART and VACATED AND
REMANDED IN PART**