

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:)	Confirmation No.: 1647
)	
Jason Arthur TAYLOR	)	Art Unit: 2169
)	
Application No.: 10/957,999	)	Examiner: McCue, B. N.
)	
Filed: 10/04/2004)	
)	
For: FORENSIC PERSON)	
TRACKING METHOD AND)	
APPARATUS)	

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Examiner's Answer mailed September 27, 2012, the Applicant supplies the following arguments in reply under 37 C.F.R. § 41.41(a)(1).

No fees are thought to be due with this paper, but the Director of Patents and Trademarks is hereby authorized to charge any fees necessary in this filing to Deposit Account #50-5298.

Table of Contents

I. Summary	3
II. Argument	3
II.A. Reply to Examiner's Answer to the Rejection Under 35 U.S.C. § 103(a) Over Kumhyr (US 6,975,346) and Further in View of Rossmo (US 5,781,704) and Miles (US 6,125,340), Claims 1, 3, 13, 14, 17, 19, and 21	3
II.A.1. Reply to the Examiner's Answer to the Missing "speeds of movement" Element	3
II.A.2. Reply to the Examiner's Answer to the Missing "general population ... of unknown association with the ... investigation" Element	9
II.A.3. Reply to the Examiner's Answer to the Missing Indefiniteness and Inoperability Assertion of the Cited Prior Art	12
II.A.4. Reply to the Examiner's Answer to the Missing "two or more connected events" Element	14
II.A.5. Reply to the Examiner's Answer to the Missing "processor ... configured to ... identifying a list of high-probability suspects" Element	19
II.A.6. Reply to the Examiner's Answer to the Missing "probabilities that said individuals are associated with one of the events under investigation" Calculation Element	20
II.A.7. Reply to the Examiner's Answer to the "Invention as a Whole is Not Obvious" Argument	22
II.A.8 Reply to the Examiner's Answer to the Capriciousness Argument	25
II.B. Reply to Examiner's Answer to the Rejection Under 35 U.S.C. § 103(a) of Claims 4-11, 20, & 22-28	26
III. Conclusion	28

I. Summary

In this Reply Brief, Appellant responds to nearly all of the points made in the Examiner's Answer (also termed herein, "Answer"). Appellant shows that the Answer implies that the obviousness rejections are based on what is unknown. To give perspective, Appellant herein compares the facts of the instant case of obviousness to those of *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). The Answer argues that some of the claim elements must be connected, rather than merely be similar. Upon review, it indeed seems that the section headings of the Appeal Brief regarding missing elements may have been misleading, in that they may have portrayed the pending claim elements to be too operationally independent. Therefore, for clarity, Appellant herein emphasizes some of the inter-dependencies between the various pending claim elements, and the failure of the cited references to meet these limitations. Finally, the Answer's echoed citation of *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991) is discussed in light of recent precedent.

II. Argument

II.A. Reply to Examiner's Answer to the Rejection Under 35 U.S.C. § 103(a) Over Kumhyr (US 6,975,346) and Further in View of Rossmo (US 5,781,704) and Miles (US 6,125,340), Claims 1, 3, 13, 14, 17, 19, and 21

II.A.1. Reply to the Examiner's Answer to the Missing "speeds of movement" Element

With regard to the missing speed parameter, the Examiner's Answer states, *inter alia*,

Based on Rossmo's discussion, one of ordinary skill in the art at the time of the invention would have known that the average speed discussed in Col. 2 Li. 61-67 could have been used instead of the Manhattan distances, as suggested by Rossmo (Rossmo, Col. 14 Li. 36-39).

(Ans. 2, ¶2 – 3, ¶1) The facts are that:

1. Neither Kumhyr's nor Rossmo's rather ambiguous calculations of probabilities utilize a speed parameter.
2. Pending claim 1 requires the calculation of probabilities be functions of one.
3. Rossmo mentions the word, "speed," in a discussion within his background section.
4. Rossmo has language saying future inventions could avoid using Manhattan distances.¹
5. The Examiner repeatedly has stated that it would have been obvious for a person having ordinary skill in the art to have altered Kumhyr such that this limitation of claim 1 is satisfied.
6. Five rejections and the Examiner's Answer failed to disclose *how* Kumhyr could have been modified to use a speed parameter despite Appellant highlighting this deficit in 8 papers and an interview.²

Based on Facts #5 & #6 *supra*, the Examiner has made an assessment about something that is unknown. Namely, how obvious it would have been to have made an unknown probability calculation that would have somehow depended upon a speed parameter. The problem is compounded since the assembly of prior art is actually two steps removed from having the speed reliance since two references, not merely one, must be mysteriously modified in undisclosed and unknown ways to possess this and other claim limitations.

¹ This may have been a non-executed (*i.e.*, unclaimed) attempt to catch potential infringers who avoided using them.

² This count includes analogous objections that were made regarding U.S. Pat. No. 5,666,157 ("Aviv"), which served an analogous purpose at one point during prosecution.

In order to shed perspective on how absurd the obviousness rejection is, Appellant hereby applies the facts of the instant scenario to a more familiar case. The most familiar case of obviousness is probably *KSR*. In that case, the district court concluded that it would have been obvious to a person having ordinary skill in the art to have mounted the modular electronic position sensor disclosed in U.S. Patent No. 5,385,068 on the fixed pivot section of the Asano pedal assembly in order to avoid the chafing problems associated with the Rixon design. Removing just the analogous unknown facts yields the following analogous obviousness rejection: “It would have been obvious to a person having ordinary skill in the art to have done something with something else disclosed in ’068 on some part of the Asano disclosure in order to somehow improve the Rixon design.” Obviously, since this was a borderline case anyway, having been reversed twice, the CAFC’s reversal would probably not have been heard, let alone again reversed by the Supreme Court had this case for obviousness been made to the district court.

It is fascinating how anyone could have a good opinion about what one does not know. It seems akin to saying, *e.g.*, one has no idea what the distance is between the Moon and the Earth, but also that surely, it must be driveable.³ As discussed in the Appeal Brief, the Office’s decisions cannot be arbitrary or based on mere opinion. They must be subject to review. Therefore, the rejection is defective, since it is clearly based on what is unknown, and, therefore, is mere opinion.⁴ On

³ Appellant is reminded of the expression, “I don’t know anything about art, but I know what I like.” The expression dates from the late 19th century and is from the first “platitude” in the list of “bromide” expressions in *Are You a Bromide* by Gelett Burgess (1906). It is the extreme expression of opinion that is not subject to review by an appellate body.

⁴ See, *e.g.*, *KSR* (“[T]here must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”), *Nazomi Communications v. ARM Holdings, PLC*, No. 04-1101 (Fed. Cir. Apr. 11, 2005) (“[T]his court must be furnished “sufficient findings and reasoning to permit

at least this basis, the rejection should either be reversed and/or replaced *sua sponte* with a new, non-defective grounds of rejection.

Incidentally, the failure of some skilled in the art (*i.e.*, the Examiners) to be able to supply *how* it would have been obvious to have combined these references containing the different inventions to satisfy the instant claim 1 is another way of framing the reason the rejection is invalid; the clear inability of the Office, even after working on this case for about 4 years,⁵ to be able to figure out *how* Rossmo could have been potentially modified to have included a speed parameter, and *how* Kumhyr (itself somehow mysteriously modifiable to have included the Miles voting system) might have been modified to have included a modified version of Rossmo only reveals just how nonobvious the instant invention is, since the Examiner and other co-workers who have worked on this case are already deemed skilled in the art, and actually have important exclusive advantages, such as the benefit of hindsight⁶ and possession of the Appellant's specification indicating how the claims could indeed be met.

The Answer states,

Appellant further argues on pg. 7 that if a speed parameter were used with a combination of Rossmo and Kumhyr it would alter the principle of operation in an unclear and nonoperational fashion. The Examiner respectfully disagrees. ...

meaningful appellate scrutiny.” *Gechter v. Davidson*, 116 F.3d 1454, 1458 USPQ2d 1030 (Fed. Cir. 1997). This requirement for sufficient reasoning applies with equal force to issues of law, such as claim construction, and issues of fact, such as infringement.”), *Dickinson v. Zurko*, 527 U.S. 150, 154 (1999), etc.

⁵ Though prosecution has been ongoing for 8 years, the velocity parameter was added to traverse the prior art, and is “new.”

⁶ Arguably, such hindsight is impermissible, but that may only pertain to the broader question of obviousness *after* one has first performed the technical legwork laying out how the assembly of prior art could have met the claims being examined. While the two are not unrelated, here only this preliminary step is of discussion.

Incorporating the probability utilizing a speed parameter as disclosed in Rossmo would further assist ... (underlining supplied)

(Ans. 3, ¶2) Either the Examiner is correct in disagreeing, or the Examiner is incorrect. If the Examiner is correct, the principle of operation of Kumhyr is unchanged, and still relies upon image comparison software, and does not utilize a speed parameter. In that case, the combination of prior art fails to meet the limitations of claim 1.

Alternatively, if the Examiner is incorrect in disagreeing, and the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (The court reversed the rejection holding the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.”)

Thus, although it is arguably merely an academic question, since either potentiality yields the same conclusion, that is the thing. Nobody knows which of the above possibilities is for sure true, since the most recent Examiner was unable to even find a way to modify Rossmo to incorporate a speed parameter such that Kumhyr could be further modified.

In light of this, it is not surprising that the rejection is peppered by clear indications similar to, *e.g.*, “Miles renders this limitation obvious by” that the limitations of the claims were apparently found independently and without any success in integrating them together.

Ratti was probably not a “bad” opinion. Obviation requires more than a finding claimed word (like “speed”) in the prior art. Further justification is ironically

supplied by the rather popular⁷ section of the MPEP regarding the question of enablement, “Even if a reference discloses an inoperative device, it is prior art for all that it teaches,” because what the underlying case, *Beckman Instruments v. LKB Produkter AB*, 892 F.2d 1547, 1551, 13 USPQ2d 1301, 1304 (Fed. Cir. 1989), says is that an invention can be broken into enabled portions and non-enabled portions. Here, the background section of Rossmo, termed herein “Rossmo 1,” enables one skilled in the art to calculate a radius based on the time between the occurrence of a crime and first light. Meanwhile, the main portion of Rossmo, termed herein “Rossmo 2,” potentially enables (ignoring the objections raised in the Appeal Brief) *a separate invention* involving Manhattan distances. But there is no connection between the two inventions indicating *how* Kumhyr’s probabilities become speed dependent. Nor is there any disclosed between Kumhyr, Rossmo 1, Rossmo 2, and Miles. Instead, the Examiners have merely assembled a kit, a hodgepodge of at least four different inventions, none of which simultaneously satisfy all of the limitations of claim 1, which instead requires interoperability due to the *claimed* interdependencies omitted using the rejection’s “superposition method”⁸ of merging prior art.

Page 3, ¶3 of the Answer objects that

The claims do not recite the phrase “guilt probabilities” but rather disclose calculation of a plurality of probabilities requiring certain parameters and indicating certain likelihoods.

⁷ Quoted at Ans. 5, ¶1, and the App. Br. 31, ¶1.

⁸ Superposition is the unappreciated godsend allowing mankind to master quantum mechanics, electromagnetism, and other fields whereby, *e.g.*, the fields from different charged particles can be conveniently, linearly, and independently added together in any order to determine the net forces and equations of motion. Unfortunately, it is inapplicable to some complex macroscopic machines, including the Appellant’s invention, but not others. For instance, while one may easily *add* a mirror onto an existing car, it is much more difficult (and, therefore, less obvious) to *add* a drivetrain.

It would be legal error if this was used as a basis to dismiss the arguments made in the Appeal Brief and by Dr. Shellow. The two phrases (“guilt probabilities” and “probabilities that said individuals are associated with one of the events under investigation”) mean nearly the same thing in the context of the specification. The Answer failed to explain why the difference matters. Even if these phrases did define significantly different claim scopes, the relevant standard is not whether or not they are different, but the much higher hurdle of them being different enough in scope to render only a hypothetical "guilt probabilities" version of claim 1 as obvious but not the actual “probabilities that said individuals...” version. Appellant posits the difference, if any, is not significant enough to render incorrect the arguments in the Appeal Brief or Dr. Shellow’s findings regarding obviousness and interoperability.

II.A.2. Reply to the Examiner's Answer to the Missing “general population ... of unknown association with the ... investigation” Element

In response to Appellant’s argument that, unlike pending claim 1, Kumhyr uses data with a non-general population of clear geographical association with a singular event under investigation, the Answer asserts that an unmodified Kumhyr already has the “general population of individuals of unknown association with the events under investigation” element of claim 1 on the basis that,

Cameras in an establishment will inevitably capture images of people unassociated with a crime.

(Ans. 4, ¶1) Let us set aside the issue with these images all being of people geographically connected to the event under investigation, and how Kumhyr

actually teaches away from claim 1, because, as was pointed out previously (*e.g.*, App. Br. 22, ¶3), the Final Rejection is paradoxical. The Answer also simultaneously requires that

After detection of a crime, the system regresses through stored images to determine *if* the suspect had surveyed the location before committing the crime (Kumhyr, Col. 4 Li. 18-29). These two events comprise two or more connected events. Appellant argues that these are not multiple similar events. The claims do not require multiple similar events, they require two or more connected events. The two events of Kumhyr [*e.g.*, a stick up by a bank robber and *e.g.*, past visits by people with similar physical descriptions] are connected in that they involve the same suspect. (bracketed text and emphases added)

(Ans. 5, ¶2) Thus, the “events” of pending claim 1 are mere visitations by people. Matches are probabilistic, and, in using the Kumhyr invention, assuming it has utility, as it must, since it was patented (and not rejected under 35 U.S.C. § 101) the users *a priori* do not know what images will have the best matches.⁹ This means that all of the pictures and all of the corresponding visitation “events” must also initially be under investigation in Kumhyr.

So far, so good. But if the camera is only taking pictures of people under investigation, is it really reasonable for these same visitors to also be of the “general population of individuals of unknown association with the events under investigation”? It would seem unreasonable and in conflict with *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827 (Fed. Cir. 2004); that suspects being investigated for a bank robbery would also be the members of a general population of individuals of unknown association with the bank robbery is absurd. After all, they would have to be suspects!¹⁰ That makes them have another association in addition to the denied geographical one. Otherwise, what is

⁹ Otherwise, the Examiner’s reading of Kumhyr has its input and output to be the same thing.

¹⁰ *Merriam-Webster’s Dictionary* 2003 edition defines *suspect* as “one that is suspected; especially : a person suspected of a crime.”

the use of this word, if *everyone* in the general population is a suspect! The rejection is self-contradictory.

Is the error *supra* in the construction of the word “events” (encompassing visits)? It would seem so, since Kumhyr clearly says in, *e.g.*, in the paragraph quoted *supra*, “After detection of a crime...the system [then] regresses through stored images for matches (step 304).” (Kumhyr col. 4, li. 18-19) *See* also Fig. 3 of Kumhyr. Or is the error in the construction of the phrase, “unknown association”? Or somewhere else?

Actually, where, exactly, the error/s is/are is unimportant. Though Appellant believes that Kumhyr, like Dr. Shellow, would be shocked to hear of the Office’s interpretation of the word, “events,” Appellant, also believes that these visitors *are* actually connected to the “real” events under investigation, but via a separate route, that of geographical proximity. Surely, the issue could be fixed if claim 1 of the instant application were amended to instead require “the population of perpetrators.” Unfortunately, that does not appear to be the situation presently at hand.

It is not Appellant’s obligation to supply a solution to the paradox, especially because the obviousness rejections are invalid for other reasons,¹¹ and the Answer’s construction seems to violate the doctrine of claim differentiation, because it apparently makes claims 1 and 21 identical. (App. Br. 3, ¶2; 19, ¶2) What matters is that self-contradictory arguments cannot be correct due to the

¹¹ For example, regarding just this one issue, because Kumhyr’s data source is of persons clearly connected via geography to the events under investigation, modification to cover a wider area would have had the “filtering capacity problems” described by Dr. Shellow; there is no need, as the Examiner maintains, to have filed a third RCE to have introduced yet another claim element detailing whatever filtering ratios the Office might ever deem capable of defining over the nearly infinite reservoir of prior art that would, if the prosecution history is any

“principle of explosion,” which posits once logic becomes infested with a single contradiction, anything else is provable. Without logic or reason, all that is left in the rejection is a final opinion regarding obviousness, which cannot be affirmed. *Dickinson v. Zurko*, 527 U.S. 150, 154 (1999). Therefore, unless the instant prosecution is intentionally adversarial, it should probably be reversed instead.

II.A.3. Reply to the Examiner’s Answer to the Missing Indefiniteness and Inoperability Assertion of the Cited Prior Art

The Answer states,

Appellant argues on pg. 11-18 that the references cited are indefinite, non enabled, and inoperable. The MPEP states "A prior art reference provides an enabling disclosure and thus anticipates a claimed invention if the reference describes the claimed invention in sufficient detail to enable a person of ordinary skill in the art to carry out the claimed invention." MPEP 2121. The Examiner maintains that the references meet this requirement. Further, the MPEP states, "Even if a reference discloses an inoperative device, it is prior art for all that it teaches." MPEP 2121.01 section II.

(Ans. 4, ¶2 – 5, ¶1) No technical reasons were supplied to refute any of the evidence presented in Shellow’s declarations that reveal that parts of the references are not enabled. As discussed in § II.A.2. of the Appeal Brief, it is somewhat absurd that the CCTV-era technology of 2002 (Kumhyr’s filing year) had sufficient resolution to have been used to perform facial recognition in the manner indicated (*i.e.*, with hidden ceiling cameras having multiple bodies occupying the image) because the face fraction is only about 5%, which is about a factor of ten too low. People cannot even make out the faces in low-resolution hidden ~50-foot-away-ceiling-corner-mounted CCTV cameras, so how could 2002-era computer software? There just are not enough pixels.

This would seem to be a potential problem with the obviousness rejection

indication, likely be mined to ensure that the instant invention is obviated.

because once this non-enabled part of Kumhyr is removed as valid prior art, the image matching system can no longer operate, and no matches can be generated. Thus, even if one uses only the enabled parts of Kumhyr for what they teach, the high-probability list claim element of Taylor is not within the assemblage of prior art as described by the Examiner. The preponderance of evidence shows the needed parts of the prior art were not enabled. Because the Examiner failed to bring in a new reference supplying an alternate matching system, the case of obviousness becomes neutered and defective, and the rejection of claim 1 should be reversed on at least this basis.

However, the larger issue here is not so much that some of the needed parts of the prior art are not enabled. Rather, it is that the cited assembly of prior art, even if it all operated 100% perfectly, still does not yield the inseparable and non-additive limitations of claim 1 implied by all the interacting combinations of claim elements. For instance, Miles, driven by slow humans, causes Kumhyr to be only useful for learning about dead persons. Similarly, there is still no velocity-dependent *probability* in Kumhyr after one adds Rossmo 1 to the kit of prior art. Furthermore, the Examiner's construction of claim 1, and the reading of Kumhyr causes it to violate causality, as it investigates the required preliminary casing by the suspect(s) to a future crime that has yet to occur; they become a system that determines an association probability when the association is already known in the first place. It makes no sense, and results in Kumhyr being non-operational even without consideration of Shellow's position that it would have been nonoperational before the unknown modifications. As stated previously, obviousness arguments rendering the prior art non-operational cannot be upheld upon review. Nor is *Am. Acad. of Sci. Tech. Ctr.* a license to arbitrarily twist Appellant's claims to ignore their stated pluralities, interdependencies, and other reasonable meanings:

The broadest-construction rubric coupled with the term “comprising” does not give the PTO an unfettered license to interpret claims to embrace anything remotely related to the claimed invention. Rather, claims should always be read in light of the specification and teachings in the underlying patent.

In re Suitco Surface, 603 F.3d 1255, 1259 (Fed. Cir. 2010)

While the Board must give the terms their broadest reasonable construction, the construction cannot be divorced from the specification and the record evidence.

In re Ntp, Inc., 2010-1243 (Fed. Cir. 2011) Thus, the Examiner cannot read the pending claims in such a fashion as to render the invention worthless, with the invention’s output being its input. Though the claims were at one point rejected under 35 U.S.C. § 101, it was not for lack of utility, as the Examiner would have been required to have done in nullifying its intended purpose.¹² The decision to not issue such rejections is further evidence that the Examiner disagrees with the claim construction required to allegedly obviate the claims.

Certainly, one might experiment to see how the three primary references might be combined to meet claim 1, such as, *e.g.*, how the four references to two probabilities in claim 1 are computed using the Miles invention. But the examiner was unable to even suggest how any of that might have been done. Therefore, the assembly of prior art does not simultaneously meet the inter-dependent elements of claim 1.

II.A.4. Reply to the Examiner's Answer to the Missing “two or more connected events” Element

The Examiner’s Answer disputes the assertion that the assembly of prior art is missing the “two or more connected events” element, and argues that

¹² “The goal of examination is to clearly articulate any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of

The claims do not require multiple similar events, they require two or more connected events.

(Ans. 5, ¶2) Many of the issues with the rejection have already been described, such as how the Examiner's rejection requires a construction of the word "events" that renders both the instant and Kumhyr inventions inoperative and lacking utility, but, as hinted in § II.A.2., it is really just the tip of the iceberg.

To see more, it may be useful to distinctly label all of the hypothetical visits by a bank robber in Kumhyr. For the sake of discussion here, a preliminary casing will be called, "visit #1," while "visit #2" will be the subsequent robbery. Again, the rejection posits that, in construing claim 1, visit #1 is one of the connected events under investigation:

The two events of Kumhyr are connected in that they involve the same suspect.

(Ans. 5, ¶2) The Examiner further claims

Kumhyr provides "data about members of a general population of individuals of unknown association with the events under investigation" by capturing images of people through the use of video cameras and not limiting the data to known criminals or suspects (Kumhyr, Col. 2 Li. 50-52 & Col. 4 Li. 52-66). (emphasis added)

(Final Rejection 36, ¶1) In other words, the persons that Kumhyr's invention investigates have an *unknown* association with the events under investigation. Therefore, visit #1, one of the events under investigation, is of unknown association with the crime under investigation. *Thus, per the rejection, an event under investigation is not even associated with itself!* This is one of the infinite unreasonable consequences of adopting the Examiner's claim construction and reading of Kumhyr.

patentability and otherwise reply completely at the earliest opportunity." (MPEP § 706)

Yet another result of the rejection is that the invention “knows” about the certain existence of visit #1 once visit #2 occurs, since all limitations of the claim *must* with necessity be in the prior art. Conversely, if only visit #1 has yet occurred, it is under investigation, so the future robbery is sure to happen. Therefore, Appellant and Kumhyr either invented a crystal ball or the construction of claim 1 yields an invention that can never be used, since a requirement is that there be two events under investigation, and robberies can occur in which no prior visits take place. So the inventions not only detect high-probability suspects of the past, but also of the future; Appellant invented a pre-crime detection apparatus. One cannot really argue out of these issues by claiming that the Kumhyr system only “kicks in” when visit #2 occurs, because taking this route yields a missing element problem, as pending claim 1 requires *two* events, and, *e.g.*, *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) implies all the elements are, with necessity, in the prior art, even though, as noted in § II.A.2. *supra*, the Answer paradoxically uses a conditional in stating “...*if* the suspect had surveyed...”

The myriad paradoxes detailed *supra* would seem to be the result of the flagrant unreasonableness of the Examiner’s construction yielding, *inter alia*, the “two or more connected events” claim element, which uses a strained separation of descriptive words such as “under investigation” and “connected” for the “events” claim element.

It would, however, actually seem reasonable that the Appeal Brief and Dr. Shellow are correct, and that the Answer is wrong, and that Kumhyr’s system was directed to help solve crimes, such as a bank robbery, not a series of bank robberies, or the pre-crimes potentially leading up those events before they were specifically identified as crimes and an investigation of those now identified crimes was initiated. The Examiner’s construction is paradoxical, and perhaps a result of an overzealous attempt at trying to “traverse” Appellant’s amendments, forcing

Kumhyr to fit the elements of Taylor's claim 1 which was specifically amended to exclude references like Kumhyr in many ways.

In an apparent attempt to resolve some of these issues, the Answer claims, assuming the inserted parentheticals *infra* are correct,

Appellant references the [Taylor] specification, on pg. 19 of the brief, as stating, [Kumhyr quote:] "In response to specific events, such as a criminal act" and [Kumhyr quote:] "responsive to a criminal event at the location" ([Taylor] specification, pg. 1, Li. 18 and 23 and pg. 9 Li. 23-26). Appellant argues that the Kumhyr reference is incompatible with respect to events under investigation due to this definition the [Taylor] specification. The Examiner is required to give the claims their broadest reasonable interpretation *in light* of the specification not in vacuum (See MPEP 2111). (bracketed parentheticals added; emphasis in original)

(Ans. 5, ¶2) But this is factually incorrect. It is Kumhyr that has these quotes, not Taylor. The Office, in an attempt to pretend that the Taylor's "two or more connected events ... under investigation" are those of Kumhyr's system, reads the phrase "*in light*" of the extrinsic Kumhyr specification rather than the more reasonable/applicable instant Specification, and is, therefore, again in conflict with *Am. Acad. of Sci. Tech. Ctr.* Once one repairs this error that the Office's rejection of Taylor's claims relies upon, the entire rejection falls like a house of cards, because it causes Kumhyr's invention to not have the "two or more [known and] connected events caused by people and [already] under investigation" limitation of Taylor's claim 1.

The Answer proffers that

The items of evidence of Miles correspond to connected events under investigation ... (emphasis supplied)

(Ans. 6, ¶1) This merely underscores the extent by which the Office has failed to operatively connect the disparate pieces in the assembled conglomerations of prior art, thus failing to simultaneously meet the actual inter-connected limitations of claims 1 and 14, the latter of which requires, *e.g.*, a produced output yielding

speed-dependent probabilities that members of a short list are perpetrators. In Miles, the word, “event” is actually the future outcome of a trial:

More particularly, the present invention relates to using probability theory upon subjective probabilities for items of evidence input by a user to determine the probability of an event based upon the items of evidence.¹³

(Miles col. 1, li. 8-12) In Miles, an event is not connected to anything, and it is not a plurality. As the Answer highlights, the rejection requires a totally different definition in which the events are instead masquerading as the items of evidence in a trial, such as hair (which actually does seem to Appellant to be a reasonable example of an item of evidence in a high-profile trial), but no procedure is outlined by which one should alter the actors in Miles to fit the various differences in the words. Consider, by contrast, the evidence in Kumhyr is supposed to be images, which are also allegedly events of claim 1. Moreover, the fundamental subject of interest of Miles is not innocence or guilt of anyone. Instead, it is the items of evidence, and ability of these *items* to cause an event such as, *e.g.*, a conviction or an acquittal. The dizzying and seemingly arbitrary matching of words without any considerations of the underlying technology, such the fact that Miles uses human mock jurists as a data source, while the claims require it to be time-stamped location data, which is not even in Kumhyr (since the Kumhyr data is from the location of an event under investigation), and the complete disregard for anything the Appellant’s Specification might have to say regarding what its own terms should mean, underscores just how unobvious it would have been for one to have made these inventions compatible with one another without any hindsight, and the Office’s inability to resolve the basic conversions of even the terminologies, let alone the technologies, merely indicates the extent by which the two references

¹³ Compare with, *e.g.*, the title, “System for Determining the Probability That Items of Evidence Prove a Conclusion.”

teach away from one another and their unsuitability to be grouped together in making a case that they supposedly obviate the instant pending claims.

II.A.5. Reply to the Examiner's Answer to the Missing “processor ... configured to ... identifying a list of high-probability suspects” Element

The Answer fails to dispute the findings by Dr. Shellow, and instead states,

Appellant further argues on pg. 20-22 that the references fail to teach a “list of high-probability suspects”. The Examiner respectfully disagrees. Kumhyr discloses determining a list of preliminary suspects based on the analysis of surveillance data (Kumhyr, Col. 5 Li. 20). Appellant provides details disclosed in the specification to suggest that Kumhyr fails to teach the “identifying” of the list. Again, the Examiner is required to give the claims their broadest reasonable interpretation *in light* of the specification, not in vacuum. (See MPEP 2111.) Kumhyr identifies the list of preliminary suspects (Kumhyr, col. 5 Li. 20).

(Ans. 6, ¶2) This is slightly humorous, since it seems reading the pending claims in a vacuum would steer the pending claims towards patentability, and that they were actually only read in light of the specifications of the cited prior art. The difference in what each inventor viewed as identifying information is hinted within Kumhyr itself, which for some reason has a need to distinguish between “known” persons and those who are merely “identified” in sentences like, “Next the system attempts to exclude known persons from unknown ones (step 402),” where “identified” persons have “identifying physical characteristics, the best captured images, estimates of direction of travel, current location and time, and identified weapons”; according to Kumhyr, all of the bank visitors except for persons such as past and present employees are both identified *and also* unknown. Thus, the pending Specification uses “identity” like Kumhyr’s Specification uses the word “known.” Had the Answer been less hypocritical, Figure 2 of the pending Specification would have been looked at. It gives plenty of examples of what identifying information might be according to the Appellant. It includes license

plate numbers, addresses obtained from a phone company, social security numbers, addresses obtained from E-Z Pass billing information, addresses from a utility (gas, water, sewage, or electrical), addresses derived from computer IP addresses, addresses obtained from a credit card company, etc.

The Answer further states,

The data Appellant references in the specification used to identify the suspect is not included in claims 1, 14, or 21.

(Ans. 6, ¶2) The Answer seems to suggest the claims continue to grow in size to encompass most of the enabling and defining portions of the Specification so that the claims can be read in a vacuum. Indeed, the only offer made of an allowance thus far was not too different from doing this. Unfortunately, as was previously stated, doing that would result in unnecessarily narrow claims, which is a reason why this case is instead being appealed.

**II.A.6. Reply to the Examiner's Answer to the Missing
“probabilities that said individuals are associated with one of the
events under investigation” Calculation Element**

The Answer states,

Appellant argues on pg. 22-23 that the references to fail to teach "probabilities that said individuals are associated with one of the events under investigation". Miles renders this limitation obvious by teaching a probability that items of evidence prove an issue of trial.

(Ans. 7, ¶1) As pointed out previously (*e.g.*, App. Br. 14-18), if Miles is utilized to obtain these probabilities, it actually renders the assembly of prior art useless, inoperable, and unable to meet the pending claims. There are four interconnected probabilities recited in claim 1, and the rejection merely says they can be obtained “by hand” from mock jurists.

Nor does the Answer refute that the rejection results in the probability paradox pointed out by the Appeal Brief in which the probabilities of association with the event under investigation is 100% for all the members of the “general population” of “unknown” association (instead of different and unique numbers).

Nor does the Answer explain how this would not preclude the generation of a ranked list, as is also required. The rejection causes a similar problem to occur in the proposed inclusion to Kumhyr, as the list of suspects matching the images of the crime scene becomes equal to the entire data set, rendering the Kumhyr invention useless and inoperable. Because the rejection renders the cited prior art inoperable in this and the other ways discussed elsewhere, and because it would probably change the basic mode of operation, the cited prior art cannot be used as described to obviate the instant claims under 35 U.S.C. § 103(a). *McGinley v. Franklin Sports*, 262 F.3d 1339 (Fed. Cir. 2001) (“If references taken in combination would produce a ‘seemingly inoperative device,’ we have held that such references teach away from the combination and thus cannot serve as predicates for a *prima facie* case of obviousness.”)

The Answer does not actually cite where the isolated version of the “probabilities that said individuals are associated with one of the events under investigation” limitation is in the prior art. On the one hand, the Examiner admits that the Kumhyr invention/disclosure does not have or yield it. Instead, this element is allegedly within Miles, which again leads us to the Kumhyr+Miles enablement issue: if this feature is in Miles, how does it operate? And what exactly is it obvious for one skilled in the art to have done or built? How, specifically, would the probabilities of a voting system have been operationally connected to the hidden surveillance cameras of Kumhyr to have produced the required “probabilities that said individuals are associated with one of the events

under investigation” for each citizen? If it was so obvious to have combined them, allegedly on the basis that “it provides authoritative users with confidence for the evidence at hand,” (*i.e.*, which evidence that trial attorneys should probably not present to a real jury), then why was the Examiner totally unable, even after repeated requests, to explain how the probabilities are to be computed? Because the Examiner was unable even with hindsight to explain how Miles was to do this, the rejection is invalid, as the rejection fails to find the probability limitation within the assembly of prior art and neither Miles nor Kumhyr fully has all aspects of it.

This was not so much a failure on the part of the Examiner, as Dr. Shellow also failed. The apparent difficulty was part of the reason he used such strong language against alleged obviousness to combine these two references. There are serious operational and logistical problems of doing it. One has two distinct inventions, Kumhyr and Miles, operating independently. It is not clear how the probabilities that Miles produces (which are the mock jury probabilities that a piece of evidence in a single lawsuit might persuade jurists) can become the guilt probabilities for a population with a velocity dependence. Nor is there any clue how Kumhyr+Miles can calculate a probability that individuals are associated with *all* of the events under investigation. Again, the Office seems to have no idea, yet repeatedly insists that it surely would have been obvious anyway. Clearly, since the rejection is based upon what is not known, it is both pure opinion and speculation. Because the rejection is not subject to extrinsic review, there would seem to be no discretion regarding the procedural nuisance of reversing it.

II.A.7. Reply to the Examiner's Answer to the “Invention as a Whole is Not Obvious” Argument

The Answer states,

Appellant argues on pg. 23-32 that the invention as a whole is not obvious. In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

(Ans. 7, ¶2) However, *Gorman* actually warns, originally only in *dicta*, but since referenced and/or quoted in other holdings, such as, *e.g.*, *In Re Hyom*, 2011-1239 (Fed. Cir. 2012), that the more references from which elements are picked and chosen from, the more teachings there must have been to have combined them:

It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps. *Interconnect Planning*, 774 F.2d at 1143, 227 USPQ at 551. The references themselves must provide some teaching whereby the applicant's combination would have been obvious.

And yet the Examiner clearly does exactly such a hindsight reconstruction, as in rejecting claims 3, 13, 14, 17, 19, and 21 the Office failed to show where the references suggest any hint of a use for one another. The “cost” of adding a new reference is not zero. In *Gorman*, adding in other features/references to a novelty candy to “get” the claimed invention made sense, since they complemented one another, and are additive. Here, however, some of the references clash, are not analogous, and even render one another inoperable. Kumhyr indeed does *not* suggest a need for Rossmo or Miles, nor does Rossmo suggest a need for Kumhyr or Miles, and nor does Miles suggest a need for Rossmo or Kumhyr. A similar statement can be made regarding the rejection of the claims 4-11, 20, & 22-28, yielding $16 \times 4! = 384$ associations that, according to the Answer, the references should have in order to obviate the invention. Since the Examiner has failed to show these required associations by the authority the Office relies upon, it is clear the Office is essentially admitting that the case for obviousness is, at best, weak.

The Answer states,

Appellant states on pg. 28 that Kumhyr fails to teach the "means for" limitations of claims 1 and 18. It is unclear claim limitations Appellant is referring to because the claims in the appendix do not disclose "means for" limitations and the previously filed claims do not disclose "means for" limitations.

(Ans. 7, ¶3) The Appellant apologizes. The Examiner is correct in pointing out these errors in the Appeal Brief. However, it is false that none of the claims were ever cast in a means plus function format.

At any rate, the Answer in no way renders the Appeal Brief's inoperable arguments wrong or inapplicable, because even the previously amended (and now pending claims) still require that the invention have the various interconnected elements such as "...a list of high-probability suspects." To find this element in an assembly of the prior art, that assembly must be able to operate as prescribed in, *e.g.*, claim 1. Otherwise, it does not actually have all the limitations of the claim. The Examiner was unable to show how Kumhyr, Miles, and Rossmo *simultaneously* meet this limitation and the others at the same time, because, while the parts of the prior art, such as Rossmo 1, might meet one or more of the limitations independently (such as using a speed parameter "to calculate a distance radius, centered on the crime site, which determines a circle within which the home village of the dacoity members most probably lies"¹⁴), the rejection essentially constitutes $12 + 1 = 13$ unconnected inventions, and the inter-connections *are* claimed. And while Kumhyr is able to generate a list of images of suspects, it does not use any speed parameter. The inability of the Office to figure out a mode of operation yielding all of the limitations indeed implies that would be have been too hard to have combined the prior art to meet *all* of the claim limitations *simultaneously*, and that the instant invention, as described in the ensemble of claims, is nonobvious.

¹⁴ Rossmo col. 2, li. 65-67.

The Answer is also silent on the fact that none of the references thus cited are able to perform the “action-at-a-distance” and “measure” something outside its immediate vicinity, and thus assist in solving a crime, as an example, without having to use data taken from the crime scene itself. Instead, the rejection strips the claims of the words added to explicitly exclude these crime-scene-based technologies. This caused significant collateral damage to the rejection due to the implied paradoxes, contradictions, and inoperabilities, all of which, as was explained in detail, render the rejections under obviousness mere personal opinion. The refusal to put even that remnant opinion formally on record in the affidavit that was requested in accordance with MPEP § 2144.03 and 37 C.F.R. § 1.104(d)(2) nullifies even this last previously standing piece in the case for obviousness the Office has proffered.

II.A.8 Reply to the Examiner's Answer to the Capriciousness Argument

The Answer does not dispute any of the prosecution anomalies.

Regarding jurisdiction, one would hope the ApJs are not automatons. Even if they rarely write about it, members of the Board’s predecessor have, in the past, orally stated they take various issues into consideration, such as credibility, or the amount of effort the examiner apparently took in making a rejection. For example, they might treat an examiner with more leniency in a case taken straight to appeal (consuming few man-hours to review the prior art) than one in an otherwise equally strong borderline case involving a plurality of examiners and SPEs working together over several years tweaking a dozen or so rejections.

Regardless, thanks to the incredible foresight of our forefathers, even the existing procedures the PTO may have in play at the moment (regarding what is

only petitionable and what is only appealable) are themselves subject to a review extrinsic to this administrative forum, and, unfortunately, at least for most situations, precedent¹⁵ precludes guaranteed consideration of issues not raised in this administrative forum.

II.B. Reply to Examiner's Answer to the Rejection Under 35 U.S.C. § 103(a) of Claims 4-11, 20, & 22-28

Appellant further argued that some of the cited prior art, especially Miles and references utilized/exploited in conjunction with three or more *other* references, is “alien” to the instant invention. In response, the Office wrote,

Kumhyr discloses several options for receiving surveillance data (Kumhyr, Col. 3 Li. 41-63). ... Thus, it would have been obvious ... to have modified Kumhyr to have included ... RF-ID...

(Ans. 8, ¶2) This section of Kumhyr reads, *inter alia*,

In addition, face recognition may be combined with other image identification methods, such as height and weight estimation based on comparison to known reference objects within the visual field. (underlining supplied)

(Kumhyr col. 3, li. 43-46) This newly cited section nearly teaches away from using Hind's RF-ID because it is indeed discussing potential hypothetical other applications and enhancements beyond the actual exemplary embodiments, yet it restricts itself to image-derived content. Using RF-ID seems two-steps removed from Kumhyr, not merely one, unless there is some way to convert RF-ID (radio) data into images. There is no RF detection equipment within Kumhyr aside from regular (*e.g.*, CB) radios. No reference was supplied by the Examiner to convert RF-ID tags into images.

¹⁵ See, *e.g.*, *In re Watts*, 354 F.3d 1362 (Fed. Cir. 2004).

Regardless, as previously asserted, this type of logic is systemic to the rejection, which uses impermissible hindsight purely in an attempt to marry the references together in the absence of the other inter-connected limitations of the pending claim 1. Once these other claimed limitations are considered, the Kumhyr-Rossmo-Miles kit has morphed into something arguably excluding, *e.g.*, Hind.

Consider, the Examiner's construction of claim 1 requires that the initial visits are also under investigation. Therefore, to additionally satisfy claim 20, the RF-ID tagging of all items ever placed near the bank are also under investigation. Is this really compatible with Rossmo? Clearly not, because Rossmo is focused on the likely geographical location of a perpetrator's residence, and in no way is compatible with, *e.g.*, marketing. The error in logic is that one cannot view the myriad references in any convenient form. They must be viewed to satisfy the limitations of the pending claim 1, which has unique features, requirements, and restrictions on what additional references can and cannot be reasonable to have combined with Kumhyr.

As also discussed in § II.A.7. in response to the Answer's cite to *Gorman*, not only do most of the references have no "need" for one another, but, they are also alien¹⁶ to one another. The fields of Miles (psychology), Hind (marketing),

¹⁶ See, *e.g.*, App. Br. 36, ¶1; App. Br. 10, ¶2 (citing Shellow I ("I would disagree with any assertion that the probabilities discussed in Miles are the same or even similar to those of claim 1 of the Taylor reference. Miles' system...is a system about how people will act....So the ... are, therefore, much different. Miles' probability (that a piece of evidence would favorably affect the outcome of a trial) is not the chance that a person is guilty, nor the chance that some evidence would produce a given result, but it is what a jury might decide... So, it is only a 'faux probability.' ... Miles deals with probabilities about human behavior instead of actual guilt probabilities....Miles' 'faux probability' deals with game theory more than reality....Even if the probabilities were about the same things, which they are not, this is much different from the automatically computer-generated, objective

and the instant invention (forensics) are simply not analogous;¹⁷ the appellant is not aware of any schools offering bachelor's degrees in, *e.g.*, criminal justice that also require attendance in marketing classes. Only Kumhyr, Rossmo, Boyd, Layson, and Mohri are in related fields; the rejection fails to indicate how Miles, Hind, Peters, Granneman, Petersen, Myr, and Peek are in the field of forensics. Miles, in the field of jury psychology, is used to reject all of the claims, though the Examiner fails to make explicit that association for claims 22 and 23. Hind, in the field of marketing, is used to reject claims 6, 10, and 20. Peters, in the field of finance, is used to reject claim 8. Granneman, in the field of RF-ID, is used to reject claims 22 and 23. Petersen,¹⁸ in the field of data management, is used to reject claim 24. Myr, in the field of transportation, is used to reject claim 26. Peek, in the field of telephonic communications, is used to reject claims 27 and 28. Thus, because these references are alien and not analogous to the field of the instant invention, and because the Office failed to show how one skilled in the art would have discovered their pertinence without the benefit of any hindsight, they cannot serve as valid prior art under the obviousness rubric, and the rejections of all the claims, and especially claims 4-11, 20, & 22-28 should be reversed on at least this basis.

III. Conclusion

guilt probabilities of Taylor...It is a different kettle of fish, a different animal.”)), etc.

¹⁷ “To qualify as prior art for an obviousness analysis, a reference must qualify as “analogous art,” *i.e.*, it must satisfy one of the following conditions: (1) the reference must be from the same field of endeavor; or (2) the reference must be reasonably pertinent to the particular problem with which the inventor is involved.” *K-TEC, Inc. v. Vita-Mix Corp.*, Nos. 11-1244, -1484, -1512 (Fed. Cir. Sept. 6, 2012).

¹⁸ This was incorrectly spelled as “Peterson” throughout prosecution.

In this Reply Brief, Appellant showed how the Examiner's Answer confirms that the rejection is a mere assembly of pieces, a kit or hodgepodge of nonanalogous inventions, none of which simultaneously satisfy all of the limitations of claim 1, because it requires interdependencies that do not operate in the prior art and a rejection should not require criminals to follow any particular behavior pattern. It is the epitome of hindsight reconstruction to say the claim is obvious without even being able to figure out how the elements in the assembly of prior art exist, let alone all of their exponentially rising interdependencies. The obviousness rejections are also defective in that they contradict themselves. A contradictory rejection cannot be correct. Regarding the man-hours issue, in citing Miles, what the Office has actually alleged is that the Appellant's machine is obvious because it could be replaced by a huge team of many, many people. This is accurate to a small extent. After all, as the Specification indicates, it was an intent of the invention to swap human labor, albeit in the opposite direction. But it is ridiculous to deny the instant application on that basis, because it would suggest very few patents should issue, and there would be little incentive to invent any machines that help do the work of people.

For these reasons, as well as some others discussed in the Appeal Brief, the Board should reverse all of the Examiner's rejections or *sua sponte* issue new ones that are not defective.

Respectfully submitted,
/Jason A. Taylor/
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Applicant

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/957,999	10/04/2004	Jason Arthur Taylor	MR3909-2	1647

4586 7590 09/27/2012
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EXAMINER

MCCUE, BRITTANY N

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2169

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09/27/2012

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Art Unit: 2169



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/957999
Filing Date: 10/04/2004
Appellant(s): Taylor, Jason

David I. Klein
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/29/2012.

(1) Grounds of Rejection to be Reviewed on Appeal

Every ground of rejection set forth in the Office action dated 1/30/12 from which the appeal is taken is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(2) Response to Argument

Appellant argues on pg. 4-8 that Rossmo fails to disclose the "speeds of movement" element of claims 1, 14, and 21. Appellant states that Rossmo itself does not have a calculation of probabilities that includes at least parameter accounting for speeds of movement of said individuals (Brief, pg. 6). As discussed in the Final rejection, Rossmo discloses a determining the average speed it takes a person to travel so that a distance radius centered on the crime scene can be determined (Rossmo, Col. 2 Li. 61-67). Later, Rossmo discloses using Manhattan distances to determine a radius to provide an area where an offender of a crime is most likely to live (Rossmo, Col. 6 Li. 45-Col. 7 Li. 8). A probability that an individual living within the radius is then determined (Rossmo, Col. 5 Li. 52-65). Rossmo states that any distance related measurement could be used to determine the radius, and specifically suggests travel time based measurements (Rossmo, Col. 14 Li. 36-39). Based on Rossmo's discussion, one of ordinary skill in the art at the time of the invention would have known that the average speed discussed in Col. 2 Li. 61-67 could have been used instead of

Art Unit: 2169

the Manhattan distances, as suggested by Rossmo (Rossmo, Col. 14 Li. 36-39).

Therefore, Rossmo teaches a calculation of probabilities that includes at least one parameter accounting for speeds of movement of said individuals.

Appellant further argues on pg. 7 that if a speed parameter were used with a combination of Rossmo and Kumhyr it would alter the principle of operation in an unclear and nonoperational fashion. The Examiner respectfully disagrees. Kumhyr and Rossmo are both attempting to identify a suspect. Incorporating the probability utilizing a speed parameter as disclosed in Rossmo would further assist the Kumhyr's method by providing more data indicative of a potential suspect. As disclosed by Rossmo, it would allow police departments to focus their investigative activities, geographically prioritize suspects, and concentrate saturation in those zones where the criminal is most likely to be active (Rossmo, Col. 5 Li. 61-65).

Further, Appellant states that the references do not compute the "guilt probabilities" of the present invention. The claims do not recite the phrase "guilt probabilities" but rather disclose calculation of a plurality of probabilities requiring certain parameters and indicating certain likelihoods.

Appellant argues on pg. 8-11 that the references fail to teach a "general population of unknown association with the investigation" because Kumhyr uses images of the perpetrators taken as he or she is committing a crime as a baseline in subsequent operation. The Examiner respectfully disagrees. The independent claims require, "at least one data source that provides time-stamped location data about

Art Unit: 2169

members of a general population of individuals of unknown association with the events under investigation” or some slight variation thereof. Kumhyr discloses a data source that collects data through the surveillance system of an establishment (Kumhyr, Col. 2 Li. 31-38). Cameras in an establishment will inevitably capture images of people unassociated with a crime. Kumhyr even discusses that several individuals are in the videos that are being analyzed to identify a suspect and the individuals may be strangers or known persons (Kumhyr, Col. 4 Li. 52-66). When a crime is committed, the surveillance system identifies and evaluates the suspect using visual surveillance data (Kumhyr, Col. 4 Li. 3-7). The system then regresses through stored images from other cameras in the system. This is to match the data with previous data to determine if the suspect had surveyed the location before committing the crime, potentially providing more data useful to the investigation (Kumhyr, Col. 4 Li. 18-29). Thus, the stored data and ongoing surveillance that takes place before a crime is committed will capture data about members of a general population of individuals of unknown association with the events under investigation. Once the crime is committed, a specific individual associated with the crime may be identified, however, the data accumulated before the crime will include data of individuals with unknown association with the crime.

Appellant argues on pg. 11-18 that the references cited are indefinite, non enabled, and inoperable. The MPEP states “A prior art reference provides an enabling disclosure and thus anticipates a claimed invention if the reference describes the claimed invention in sufficient detail to enable a person of ordinary skill in the art to carry

Art Unit: 2169

out the claimed invention." MPEP 2121. The Examiner maintains that the references meet this requirement. Further, the MPEP states, "Even if a reference discloses an inoperative device, it is prior art for all that it teaches." MPEP 2121.01 section II.

Appellant argues on pg. 18-20 that Kumhyr fails to teach "two or more connected events". The Examiner respectfully disagrees. Kumhyr teaches detecting that a crime has been committed (Kumhyr, Col. 3 Li. 66 - Col. 4 Li. 1-7). After detection of a crime, the system regresses through stored images to determine if the suspect had surveyed the location before committing the crime (Kumhyr, Col. 4 Li. 18-29). These two events comprise two or more connected events. Appellant argues that these are not multiple similar events. The claims do not require multiple similar events, they require two or more connected events. The two events of Kumhyr are connected in that they involve the same suspect. Appellant references the specification, on pg. 19 of the brief, as stating, "In response to specific events, such as a criminal act" and "responsive to a criminal event at the location" (specification, pg. 1, Li. 18 and 23 and pg. 9 Li. 23-26). Appellant argues that the Kumhyr reference is incompatible with respect to events under investigation due to this definition the specification. The Examiner is required to give the claims their broadest reasonable interpretation *in light* of the specification not in vacuum (See MPEP 2111). Additionally, Appellant seems to define "event" as "something that happens" (brief, pg. 20) which is consistent with the teachings of Kumhyr.

Appellant further states that the items of evidence disclosed in Miles do not equate to connected events because a hair sample from a person and a witness testimony are not events within the context of claim 1, not necessarily under investigation themselves, and much different in nature from each other. The items of evidence disclosed in Miles are connected in that they relate to the issue of trial. Appellant asks how hair is an event, however, Miles does not appear to disclose examples such as hair samples as items of evidence and Appellant has not provided a citation for this example. The items of evidence of Miles correspond to connected events under investigation since they are items that can prove or disprove a conclusion, where the conclusion may be the guilt or innocence of a defendant (Miles, Col. 5 Li. 64 – Col. 6 Li. 1).

Appellant further argues on pg. 20-22 that the references fail to teach a “list of high-probability suspects”. The Examiner respectfully disagrees. Kumhyr discloses determining a list of preliminary suspects based on the analysis of surveillance data (Kumhyr, Col. 5 Li. 20). Appellant provides details disclosed in the specification to suggest that Kumhyr fails to teach the “identifying” of the list. Again, the Examiner is required to give the claims their broadest reasonable interpretation *in light* of the specification not in vacuum (See MPEP 2111). Kumhyr identifies the list of preliminary suspects (Kumhyr, col. 5 Li. 20). The data Appellant references in the specification used to identify the suspect is not included in claims 1, 14, or 21.

Appellant argues on pg. 22-23 that the references fail to teach "probabilities that said individuals are associated with one of the events under investigation". Miles renders this limitation obvious by teaching a probability that items of evidence prove an issue of trial. Miles suggests that it is useful to know the probability that items of evidence prove a fundamental issue of trial (Miles, Col. 7 Li. 50-54). The fundamental issue of trial is the guilt or innocence of a defendant (Miles, Col. 5 Li. 66 – Col. 6 Li. 1). Based on this teaching, the Examiner maintains that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have included such a calculation because it provides authoritative users with confidence for the evidence at hand (Miles, Col. 7 Li. 65-67).

Appellant argues on pg. 23-32 that the invention as a whole is not obvious. In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Appellant states on pg. 28 that Kumhyr fails to teach the "means for" limitations of claims 1 and 18. It is unclear claim limitations Appellant is referring to because the claims in the appendix do not disclose "means for" limitations and the previously filed claims do not disclose "means for" limitations.

Appellant argues on pg. 32-35 that the review of the application may be capricious. The arguments presented in this section are not reviewable by the Board of Patent Appeals and Interferences. The issues are petitionable to the Director of the USPTO if Appellant desires to do so.

Appellant argues on pg. 35-36 that it would not have been obvious to combine Hind and Kumhyr to provide the limitations of claim 20 regarding a data source that translates data from RF-ID reading equipment into identification data. The Examiner respectfully disagrees. Kumhyr discloses several options for receiving surveillance data (Kumhyr, Col. 3 Li. 41-63). Hind teaches processing RFIDs detected on a person and correlates them with a purchase database to determine the person's identity (Hind, Col. 3 Li. 41-49). This could be used with the invention of Kumhyr as an additional source of data. Thus, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified Kumhyr to have included a data source that translates data from RF-ID reading equipment into identification data because it provides a way to associate products with people so that authorities can track the location, identity, and time that a person comes in contact with others (Hind, Col. 6 Li. 19-23).

Art Unit: 2169

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Brittany N. McCue

/BRITTANY N MCCUE/

An Appeal Conference was held on September 13, 2012 at 2:30 EST.

Agreement was reached to proceed to the Board of Appeals and Interferences.

Conferees:

/Tony Mahmoudi/

Supervisory Patent Examiner, Art Unit 2169

/Jacob F. Bétit/

Supervisory Patent Examiner, Art Unit 2158

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Confirmation No.: 1647
)	
Jason Arthur TAYLOR	)	Art Unit: 2169
)	
Application No.: 10/957,999	)	Examiner: McCue, B. N.
)	
Filed: 10/04/2004)	
)	
For: FORENSIC PERSON)	
TRACKING METHOD AND)	
APPARATUS)	

37 C.F.R. 41.37 APPEAL BRIEF

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Alexandria, VA 22313-1450

Sir:

The Applicant of the above-identified U.S. patent application submits this Appeal Brief in response to the Office Action dated January 30, 2012 and in support of an appeal from the final rejection of claims 1, 3-11, 13, 14, 17, and 19-28 in this application. The Applicant filed a Notice of Appeal May 29, 2012. A request for the appropriate Extension of Time and the necessary fee have been submitted concurrently with this Brief. The Applicant also submits the appeal brief fee herewith.

TABLE OF CONTENTS

I. Real Party in Interest	1
II. Statement of Related Cases	2
III. Summary of Claimed Subject Matter.....	3
IV. Argument Regarding Rejections of Claims 1, 3-11, 13-14, 17, and 19-28 Under 35 U.S.C. § 103(a), Obviousness, Over Kumhyr (US 6,975,346) and in View of Rossmo (US 5,781,704), Miles (US 6,125,340), Boyd, Layson et al. (US 6,405,213), Hind et al. (US 7,07	4
IV.A. Rejection under 35 U.S.C. § 103(a) over Kumhyr (US 6,975,346) and further in view of Rossmo (US 5,781,704) and Miles (US 6,125,340), Claims 1, 3, 13, 14, 17, and 19.....	4
IV.A.1. Missing “speeds of movement” element.....	4
IV.A.2. Missing “general population ... of unknown association with the ... investigation” element.....	8
IV.A.3. The assembled prior art seems indefinite, not enabled, and inoperable. 11	
IV.A.4. Missing “two or more connected events” element.	18
IV.A.5. Missing “processor ... configured to ... identifying a list of high- probability suspects” element.	20
IV.A.6. Missing “probabilities that said individuals are associated with one of the events under investigation” calculation element.....	22
IV.A.7. The invention as a whole is not obvious.....	23
IV.A.8. The Office’s review of this application may be capricious.	32
IV.B. Rejection under 35 U.S.C. § 103 of Claim 4-11, 20, & 22-28.....	35
V. Conclusion	36
VI. Claims Appendix	39
VII. Evidence Appendix	46

I. Real Party in Interest

The real party in interest is Technology Advancement Labs LLC of Kensington, Maryland, the assignee of record. The assignment of the above-identified patent application to Technology Advancement Labs LLC was filed August 20, 2008.

II. Statement of Related Cases

No other appeals from the United States Patent and Trademark Office (hereafter, “Office”) in connection with U.S. Patent Application No. 10,957,999 (hereafter, “application”) were previously before the Board of Patent Appeals and Interferences (hereafter, “Board”).

The Appellant, Dr. Jason Arthur Taylor, as well as the real party in interest, Technology Advancement Labs LLC, are unaware of any other case pending that will directly affect or be directly affected by the Board’s decision in the pending appeal.

III. Summary of Claimed Subject Matter

Claim 1 of the present invention is a forensic person tracking and identification system used for analyzing events caused by people and under investigation. (specification page 1, lines 9-10) The input to the system is time-stamped location data about members of a population of individuals of unknown criminality. (specification page 2, lines 21-22) One such input is OCR'd license plate data. The system uses a central relational database for storing the time-stamped location data. By processing this data with mathematical operations accounting for reasonable speeds of movement, it calculates probabilities that individuals are associated with one of the events under investigation (specification page 2, lines 19-20, 23-25) Unlike the cited prior art, the system does not require any data taken from crime scenes. The system also outputs a list of high-probability suspects. (specification page 2, lines 25-28)

Claims 1, 14, and 21 are the independent claims. Claim 14 is a method claim effectively covering use of the invention of claim 1. Claim 21 is very similar to claim 1, but claims a different number of events to be investigated.

IV. Argument Regarding Rejections of Claims 1, 3-11, 13-14, 17, and 19-28 Under 35 U.S.C. § 103(a), Obviousness, Over Kumhyr (US 6,975,346) and in View of Rossmo (US 5,781,704), Miles (US 6,125,340), Boyd, Layson *et al.* (US 6,405,213), Hind *et al.* (US 7,076,441), Peters, Mohri (US 6,559,766), Granneman, Peterson (US 2002/0103907), Myr (US 2003/0014181), and further in view of Peek *et al.* (US 2002/0049768)

This brief alleges that the Final Rejection dated January 30, 2012 (hereafter, “Final Rejection”) reversibly erred by rejecting all of the pending claims. Organization is by elements common to most claims. Most of the arguments presented *infra* assert that the Final Rejection fails to have one or more claim elements in the prior art as assembled. As is often the case, most of these “missing element arguments” could have been couched as improper claim construction arguments. This brief also purports that the proposed combination renders the prior art inoperable for their intended purposes. Finally, it is suggested that the handling of this application may have been capricious in nature and, therefore, in violation of the Administrative Procedures Act, 5 U.S.C. § 701 *et seq.*

Since there are multiple reasons the Examiner’s rejection should be reversed, any of the arguments *infra* could be dispositive if the Board is open to the possibility that there could have been reversible error in the Examiner’s last Final Rejection. Similarly, no arguments are dispositive if a full affirmance is ultimately made, which instead would require findings about the validity of each argument.

IV.A. Rejection under 35 U.S.C. § 103(a) over Kumhyr (US 6,975,346) and further in view of Rossmo (US 5,781,704) and Miles (US 6,125,340), Claims 1, 3, 13, 14, 17, and 19

IV.A.1. Missing “speeds of movement” element.

In order for a proper rejection to be made under 35 U.S.C. § 103(a), all claim limitations must be shown to have been obvious.¹ The first argument Applicant wishes to present that may show reversible error in the Final Rejection is one of the missing element arguments. The first missing element is that the calculation of probabilities that said individuals are associated with one of the events under investigation includes at least one parameter accounting for speeds of movement of said individuals. All pending independent claims (1, 14, and 21) require this speed element. Reasoning supplied when these amendments were introduced indicated that they were intended to further define over the prior art. It indicated a construction that when information about the location of an entity or potential suspect has been acquired, the calculation of the probability that they are associated with an event being investigated explicitly must account for the fact that, *e.g.*, people take a finite amount of time to move from one location (*e.g.*, that of a Camera Location Point) to another (*e.g.*, that of the location of the event under investigation or another Camera Location Point). Thus, there is little ambiguity as to what this claim element can mean under the “BRI” (broadest reasonable interpretation in light of the specification as it would be interpreted by one of ordinary skill in the art) standard set forth in *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827 (Fed. Cir. 2004).

The Final Rejection purports to find this element in the prior art as follows:

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have modified Kumhyr to have included at least one parameter accounting for speeds

¹ See, *e.g.*; MPEP §§ 2143.03, 2143; *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970); *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995); *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003); *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)).

of movement of said individuals because it allows police departments to focus their investigative activities, geographically prioritize suspects and concentrate saturation in those zones where the criminal is most likely to be active (Rossmo, Col. 5 Li. 61-65).

This statement essentially says it would have been obvious to have married Rossmo to Kumhyr. Even if, *arguendo*, the assertion were true, the cited prior art still fails to be operable in utilizing such a parameter to compute anything, let alone the probabilities required by Taylor. This is partly because Rossmo itself does not have a calculation of probabilities that includes at least one parameter accounting for speeds of movement of said individuals. Rather, the Rossmo probability function is based upon the Brantingham and Brantingham (1981) model, which is geographically based on historical data. It does not have a speed parameter. As Rossmo puts it,

The present invention targeting is based on the Brantingham and Brantingham (1981) model for crime site selection and on the routine activities approach (Felson, 1986). The present invention uses a distance-decay function $f(d)$ that simulates journey to crime behaviour. A probability value $f(d_c)$ is assigned to each point (x, y) , located at distance d from crime sites. (Rossmo col. 6, li. 8-14.)

Again, the speed parameter is a required element of all pending claims. As the Examiner correctly pointed out, Rossmo used the word “speed” in column 2 of his background section describing other methods. However, this fact alone does not equate to a functional calculation based on speeds. Since Rossmo does not actually utilize any speed parameter in his actual calculations and no specific mechanism was proffered as to how the guilt probabilities of Miles are to be computed upon using such a speed even if it were to exist, the Office failed to reveal with the particularity required by *KSR Int'l Co. v. Teleflex Inc.*, 127 127 S.Ct. 1727, 1741

(2007) showing what it is that it supposedly would have been obvious to have done that utilizes a speed parameter to compute the required probabilities.

Applicant considered the SPE's suggestion of adding even more elements to the independent claims, but before doing so decided to ask someone skilled in the art to review the question of whether or not the prior art, as the Final Rejection assembles it, is capable of falling within these phrases and claim elements *supra* in their broadest reasonable interpretation. Specifically, Applicant asked Dr. Robert Shellow, CEO of IMAR Services LLC, who is one skilled in this art. Both the 2009 and 2011 Shellow Declarations under 37 C.F.R. § 1.132 are appended (hereafter, "Shellow I" and "Shellow II," respectfully). Dr. Shellow not only stated that it would not have been obvious to have combined these references in the fashion described (Shellow II, ¶¶14-15), but that if they were combined there is still no calculation of probabilities that said individuals are associated with one of the events under investigation that includes at least one parameter accounting for speeds of movement of said individuals. (Shellow II, ¶¶7-9, ¶13) Dr. Shellow said that a speed parameter does not appear to be present in the cited prior art inventions; Rossmo's invention does not actually apparently utilize one. (Shellow II ¶¶ 7-9) A *prima facie* case of rejection has not been made, as the sections cited by the Examiner do not have this element of Taylor's claims in an operational form.

Moreover, if a speed parameter were to be used with a combination of Rossmo and Kumhyr it would alter the principle of operation in an unclear and nonoperational fashion. According to Dr. Shellow, the speed that would be most obvious to use is the speed of going from one crime scene to the next, which is a very low speed. However, to fail to reverse the Examiner would upset whose burden it was to make the *prima facie* case. Even so, using that speed does not

appear to result in an operable invention capable of computing the “guilt probabilities” of Taylor. Perhaps this is part of the reason why it would not have been obvious to have combined these two references in the first place; the two technologies do not really “hook into” each other in any obvious way.² At any rate, a *prima facie* case including a speed dependent “guilt probability” is not within the prior art as assembled by the Final Rejection, at least in an operational fashion. Therefore, the rejections should be reversed on this basis.

IV.A.2. Missing “general population ... of unknown association with the ... investigation” element.

It is hoped that the preceding argument is sufficient to warrant a full reversal of the rejections. In that case, the other arguments need not be considered. However, if the previous argument is deemed to be wrong, a second “backup argument” argument that Applicant wishes to present purporting to show reversible error in the Final Rejection of the claims is another missing element argument. The argument is that the Examiner’s proposed combination of Kumhyr, Rossmo, and Miles does not provide for a “general population of individuals of unknown association with the events under investigation” input required by claim 1 of the instant invention. The Office Action alleges that Kumhyr’s technology does have this claim element:

(Kumhyr, Col . 2 Li. 50-67, video cameras are connected to network for capturing images for storage which can then be cross-referenced and compared to other images recorded by different cameras at different times);

² See, e.g., Shellow II ¶¶6-10, 12-15. Cf. Shellow I ¶ 21.

(Final Rejection p. 4¶5). If this is true, the authorities do not know if the individual seen committing the crime in the video frames relied upon by Kumhyr is associated with the event under investigation. But this is completely false. Kumhyr's technology uses such images of the perpetrators taken as he or she is committing the crime as a baseline in its subsequent operation. The individual in the baseline image(s) *are actually assumed* to be associated with the event under investigation. That is the whole point. Kumhyr's technology relies upon it as a starting point. Kumhyr's claim 1 requires, "responsive to a criminal event at the location, in real time tagging every person visible in the video to form a set of tagged persons." All those tagged people are associated with the event under investigation. They are not members of a general population of *unknown* association. What is unknown is who they are, not whether or not they are a causative agent partly responsible with the event under investigation. By contrast, Taylor's claim requires utilization of data from members of a general population of individuals of unknown association with the events under investigation. So it is not known before hand if these members of the population are associated with the event under investigation. As such, because the associations are opposite, the embodiment cited in Kumhyr does not infringe on this element of Taylor's claims; it fails to actually meet this element. Therefore, a *prima facie* case of obviousness was not made in the Final Rejection.

The instant invention also makes use of the phrase, "list of high-probability suspects," in attempting to describe an output of the invention. The combination of these claim phrases describes not merely an invention capable of getting the short list using data from people not even known to be at the crime scene, but also a separate substantial capacity to screen or otherwise filter suspect-related data.

Neither of these two elements is within the Kumhyr, Rossmo, and Miles references as assembled by the Final Rejection.

Dr. Shellow was also kind enough to have supplied a detailed analysis of both claim elements regarding their potential residence within the assembly of cited prior art. (Shellow I, ¶¶ 4-5, 14, 17, and 19; Shellow II, ¶¶ 6, 10-15) Dr. Shellow determined that none of the references have the “general population” as an input. (Shellow II, ¶¶ 10-11, and 14) There is nothing general about the specific visitors to a specific branch of a specific bank, particularly after they are tagged as the perpetrators in a crime scene video clip. Regarding the second “filtering” aspect of claim 1, Shellow stated that Kumhyr’s “system has a filtering ratio that is too low by a very large factor” (Shellow I, ¶ 11) to meet the existing limitations within claim 1. If Dr. Shellow is right, there would be no reason to add even more limitations to claim 1 in order for it to define over the prior art. Claim 1 already has 163 words, making it a bloated micro-essay that is 126% expanded over the originally-filed 72-word version. While it is possible that Shellow II is biased or wrong, and there are some hints of a reluctance in his declaration to have spoken about certain aspects of the prior art,³ at the present time the Applicant has no reason to doubt its validity. In light of Taylor’s specification the definition of “population” is unreasonable. The first and most applicable definition from Webster’s dictionary is,

1 a : the whole number of people or inhabitants in a country or region

The Final Rejection’s constructions imply Taylor’s “population” could be a small family of four. This is before one attempt to apply the word, “general,” which is

³ Note the use of the word, “layman” in Shellow I ¶ 15.

defined as “1 : involving, applicable to, or affecting the whole” and “3 : not confined by specialization or careful limitation.” The Final Rejection ignores the word, “not.” It is incorrect. Therefore, it was decided not to further amend claim 1 to infinitely reduce its scope in the fashion that was previously proposed by the SPE at the interview.

Also, the “general population ... of unknown association with the ... investigation” element was specifically introduced to exclude technologies based upon persons already known to be associated with a crime scene/event and crime-scene-based technologies. The meaning of a claim element term may be derived from “the words of the claims themselves, *the remainder of the specification, the prosecution history*, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) Therefore, it is also unreasonable to now construe these terms to encompass territory which they were specifically meant to exclude, especially given that no indefiniteness rejection is outstanding. Therefore, a *prima facie* case of obviousness has not yet been made having these claim elements required by Taylor.

IV.A.3. The assembled prior art seems indefinite, not enabled, and inoperable.

The third argument (second backup) the Appellant wishes to present is a combined indefinite, non-enablement, and inoperable for its intended purpose argument. Though separate statutory requirements, each relates to the ability of the prior art to satisfy the claim elements. For space considerations, they are discussed together. Generally speaking, prior art non-enablement arguments could be ineffective when made in response to an obviousness rejection, as even non-

enabled prior art is valid art for what it teaches. However, for a *prima facie* rejection to be valid, the prior art must nevertheless be enabled, even if only by the Examiner's assemblage of it.

Before showing that the assemblage is not enabled, it is probably worthwhile to review the operation of the three primary references common to all rejections. Kumhyr, as a whole, is a video surveillance perpetrator present-to-past image-matching system. Rossmo, as a whole, is an expert system to determine regions with high criminal activity. Miles, as a whole, is a jury evidence evaluator prediction system.

According to Dr. Shellow, the primary reference, Kumhyr, is not enabled even before it is modified by the Examiner in an apparent attempt to meet Taylor's claims. "It is probably not even operable now, so it certainly was not operable then." (Shellow I ¶9) The reason Dr. Shellow gave had to do with, among other things, the Kumhyr face-camera distances and very low resulting "fraction of the screen covering the face" as compared to the industry requirements at the time (allegedly $\geq 50\%$). The resolution of CCTV systems is usually measured by TV lines in the field. Camera quality is not the limiting aspect of Kumhyr because NTSC VHS could only reproduce approximately 350x350 pixels per frame. Kumhyr's inclusion of even lower resolution night-vision IR cameras that also happens to be within the Examiner's cite only proves Shellow's point that Kumhyr was oblivious to the fundamental issues "facing" face recognition. It seems Kumhyr's intent was to capitalize on the 20-year patent term and likely technological advances (e.g., Moore's law). This could be fine for Kumhyr's purpose, but concerning review of this application it would seem Kumhyr is not valid under 35 U.S.C. § 103(a), because it would have had to have been enabled when the invention was filed. The issue is real. Taylor's methods, by contrast, did

not rely upon “cutting edge technologies” or future computational advances. (*See, e.g., Shellow I ¶7.*)

The secondary reference, Rossmo, is also arguably not enabled. The reasons are perhaps not worth getting completely into here, as they are rather technical, and plenty of other dispositive reasons are in this brief sufficient to warrant a reversal, but Rossmo’s core equation, equation (5), appears to lack the thing being indexed perhaps indicating what fundamental mathematical operation, if any, is to be employed. With some numerical monte-carlo simulations, which operation (*e.g.,* integration, multiplication, summation, etc.) is missing might be deducible, but if it is multiplication, it would seem a divergent probability peak is possible around crime scenes. If so, such a result would actually oppose the core stated desire of the reference, which was to numerically digitalize the Brantingham and Brantingham (1981) model, which became popular because of its treasured feature that was compatible with the observation that criminals tend to avoid a buffer zone surrounding their own place of residence. Perhaps partly due to some nontrivial printing issues, but not exclusively due to them, the rest of the core equation (5), *e.g.,* “ $|x_i - x_c| |y_j - y_c|$ ” and “/ +” (!) is not that much clearer either. This is not to say Rossmo’s overall contributions are not meritorious. Rather, merely that equation (5) seems to either invalidate the intended purpose of the reference or would have failed to have adequately communicated how one skilled in the art should have operated the invention without undue experimentation.⁴ Therefore, the reference may be indefinite, not enabled, and inoperable for its intended purpose.

⁴ The purpose of the Rossmo reference was not to teach computer scientists how to do simulations. Rather, that was just a tool apparently leading to a final result one skilled in the art was to use. Namely, equation (5), whatever it was supposed to be.

The third reference cited against all rejected claims is Miles. Unlike the other primary prior art references, Miles is probably enabled unmodified for what it does. But the Examiner's rejection and construction of Taylor's claims, and application of Miles to Kumhyr and Rossmo makes Miles fail to satisfy its intended purpose. A calculation of probabilities is within Miles, but the way Miles operates, for it to be the "guilt" calculation of claim 1 without any hindsight from Taylor, the types of embodiments resulting from this reading of claim 1 (using Miles to compute the probability that a suspect is "guilty," *i.e.*, associated with an event under investigation) requires that the data from the data sources be manually entered for subsequent review by multiple mock jury participants. Once the polling data has been entered, the computer can take that human-extracted data and average it and determine the "Miles" guilt probability. There are many reasons the cited assembly of prior art is inoperable. One of them is because marrying Miles to Kumhyr alters the fundamental operation of Kumhyr: to reduce human work. Another issue is that interrogation of even one member from a mock jury about the members of a population, *e.g.*, 5 million people, would take, assuming, *e.g.*, 10 minutes per interrogation and a 40 hour work week, approximately 400 years.⁵

Strictly speaking, whether or not this time is sufficiently high enough to render the hindsight-assisted assemblage of prior art by the present Examiner inoperable is subjective and debatable. While there are probably ways one could speed up interrogations (the 10 minutes figure provided here is just a speculative guess anyway), given that it exceeds the longest human lifespan on record (Jeanne Louise Calment, who lived 122 years), it is suggestive that the assembled prior art would be inoperable under the assumption that the intended purpose of Kumhyr is

⁵ This calculation is a lower limit, as it excludes the time required to input data from each person of unknown association.

punitive. (That is, to ultimately render a form of justice or to protect the living entities being surveilled; to punish criminals while they are still living.) Dr. Shellow arrived at a similar conclusion. (Shellow I ¶¶ 26, 14, 17, 19-21, & 23) Applicant agrees with Shellow's assertion, and reads it to mean that the assembly of prior art as described by the Final Rejection would be inoperable for its intended purpose.

As an aside, Taylor does not have this inoperative issue even though Taylor's Claim 1 is now limited to require "a means for calculating probabilities that a given individual is associated with one of the events..." The reason is because Taylor has an enabling method to get this result. Taylor discloses a sample means for computing the probability "of guilt" on pages 10-11 of the specification in order to satisfy the 35 U.S.C. § 112, first paragraph enablement requirement. Such a computation employs, *e.g.*, equation (4):

$$f(x, k, N_k) \equiv \sum_{i_1=1}^{N_K-(k-1)} \sum_{i_2=i_1+1}^{N_K-(k-2)} \dots \sum_{i_k=i_{k-1}+1}^{N_K} \left(\prod_{l=1}^k x_{i_l} - \sum_{j=k+1}^{N_k} \frac{\binom{N_k-k}{j-k}}{\binom{N_k}{j}} f(x, j, N_k) \right)$$

A question of relevance here is thus two-fold: (1) whether the methodologies taught by the combination of art as cited by the Examiner supply the limits of claim 1, and (2) if such a combination would enable the cited combination of prior art without undue experimentation via yielding equation (4) and/or related guilt probability equations (12) and (13) or with necessity some enabling analogues that allows the claims to be met. Unfortunately, the assemblage of prior art uses the Miles method of computing probabilities. Therefore, because it would take longer than the lifespans of people, it is clearly inoperable for its intended punitive (of

alive verses dead persons) purpose and, therefore, cannot be used to obviate Taylor.

The Examiner found this argument not persuasive on the basis that the claims would need to have the detailed equation *supra* or other precise elements in order to explicitly limit them in this fashion. However, the Examiner seems to miss the point. As a preliminary remark, it is a common misconception that the inventive aspects of inventions need to be claimed. This is especially true if the inventive aspect enables something to exist that did not occur before. The issue here is the operability of the prior art as it was arranged in the Final Rejection, not the operability of Taylor. Such enablement is a requirement under 35 U.S.C. § 103; to render a later invention unpatentable for obviousness, the prior art must enable a person of ordinary skill in the field to make and use the later invention. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988); *Beckman Instruments, Inc.*, 892 F.2d at 1551; *Payne*, 606 F.2d at 314; *In re Kumar*, 418 F.3d 1361, 76 USPQ2d 1048, 1053 (Fed. Cir. 2005). If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP §2143.01; *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984). The modifications proposed in the Final Rejection to Rossmo, Kumhyr, and Miles not only make them even more inoperable, but also make them fail to have the required limitations of Taylor's claim 1, such as the short list. As discussed *supra*, based on the technology disclosed at conferences at the time this invention was filed, Shellow argued that even Kumhyr unmodified would have even been inoperable then. But the modifications required to meet Taylor's amended claims (*e.g.*, the unknown association, general population amendments) the Examiner apparently attempts to make to Kumhyr (to not merely process archived footage of visitors to a specific

bank branch) would have rendered Kumhyr even more inoperable. According to Shellow, the Final Rejection's construction reading Kumhyr to have "members of a general population of individuals of unknown association with the events under investigation" element is not reasonable. Rather, Kumhyr is restricted to comparisons with a previously determined relatively short list that is restricted to manually tagged low-probability suspects (e.g., bank employees) and high-probability suspects (persons not of the general population but, rather, persons who were previously present at the crime scene) and profiles of known convicts. (Kumhyr, Col. 4 Li. 46-48, 51-57, 64-66 and Col. 5 Li. 21) The Final Rejection does not dispute that it is an unreasonable interpretation of Taylor's claims to ignore the elements "general" and "unknown association" specifically introduced to exclude technologies focused on crime scene data. However, even if Shellow were wrong on this point, one alternatively is faced with the Final Rejection's assemblage of the prior art being inoperable not only because it defeats the purpose of Kumhyr (to reduce, rather than increase, human man-hours required to process archived video footage), but also because it would take too long to be of any utility. (Shellow I ¶26)

As previously stated, the combination of prior art, in addition to being clearly articulated by the Examiner in making a *prima facie* case and revealing each of the claimed limitations must also *be able to operate* to attain all claimed and even implied functionality. *Gordon* ("Indeed, if the French apparatus were turned upside down, it would be rendered inoperable for its intended purpose. ... In effect, French teaches away from the board's proposed modification."); *McGinley v. Franklin Sports*, 262 F.3d 1339 (Fed. Cir. 2001) ("If references taken in combination would produce a 'seemingly inoperative device,' we have held that such references teach away from the combination and thus cannot serve as

predicates for a *prima facie* case of obviousness.”); *In Re Icon Health and Fitness, Inc.*, 2006-1573 (Fed. Cir. 2007). Because all of the suspects and bank employees will be dead by the time the filtering has been performed, the combination of cited prior art cannot be construed as being operational for the intended purpose of Kumhyr.

On the other hand, if the prior art does not meet the “members of a general population of individuals of unknown association with the events under investigation” limitation of claim 1, a *prima facie* case of obviousness has not yet been made either, since the assemblage of prior art fails to meet all of the limitations of claim 1. In order for a proper rejection to be made under 35 U.S.C. § 103(a), *all claim limitations* must be shown by an embodiment the Examiner claims would have been obvious based on the prior art. *See, e.g.*, MPEP § 2143, *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), etc. Thus, either possibility (lack of enablement or lack of operationally satisfying all of Taylor’s claim limitations) regarding this issue yields the same end result: that a *prima facie* case for obviousness has not yet been made.

IV.A.4. Missing “two or more connected events” element.

The Office is required to construe claims in accordance with the BRI standard. Regarding the claim element, “connected events,” the Final Rejection relies upon a construction of this element of claim 1 that is out of context and beyond the BRI. For instance, “the two or more *connected* events caused by people and under investigation of claim 1” are, presumably, “connected.” But what exactly does that word mean here, if anything? The Specification actually supplies insight, with examples of “connected events,” such as serial killings. Note that these “connected

events” *are similar in nature* (all being, *e.g.*, crimes), even though claim 1 is not necessarily restricted to them being crimes *per se*.

However, the Final Rejection (page 4, ¶4) asserts that “...Kumhyr teaches a...system used for analyzing two or more connected events...” The “connected” events are the visitations from all persons to the bank branch prior to the subsequent crime at that location. But these are not multiple *similar* events at all. Kumhyr is concerned with the empirical statistic that perpetrators frequently case the place they, *e.g.*, rob prior to committing their crime. An event consisting of a visit to a bank by someone who later robs it *is much different* from the robbery event itself, yet this section of the Final Rejection is treating them the same, since it relies on Kumhyr's comparison made with archived images to the crime-scene images (Kumhyr, Col. 6 Li. 43-44). Since those two types of events inherently are of different classes, the present Examiner has ignored the “connected” word in its context, thus stretching claim 1 well beyond its broadest reasonable construction permissible under *Am. Acad. of Sci. Tech. Ctr.*

The Examiner's construction of the phrase event under investigation, if applied to Kumhyr, apparently implies that $(\sim 6 \text{ hours/day}) \times (30.5 \text{ days/month}) \times (\sim 10 \text{ persons/suspects/events / hour}) \times [(\text{several} \geq \sim 3) \text{ months}] \gtrsim 5,490$ events are actually under investigation after a bank robbery analyzed using Kumhyr's technology. It is incompatible with page 1, lines 18 and 23 and page 9, lines 23-26 of the Taylor specification, the Final Rejection, and even Kumhyr, which contains the phrases, “In response to specific events, such as a criminal act,” “responsive to a criminal event at the location,” etc. It would seem somewhat unreasonable to assert that Taylor's claimed events under investigation in light of the Taylor specification actually refers to >5,000 people not really of interest. Also, the Final Rejection's construction is in conflict with the doctrine of claim differentiation.

Yet another reason the connected events limitation is missing because, ultimately, the Final Rejection assembles the prior art to utilize Miles' "items of evidence." They do not equate to connected "events," since, *e.g.*, a hair sample from a person and witness' testimony about that person are

- (a) not "events" within the context of claim 1 in the first place,
- (b) not necessarily "under investigation" themselves, and
- (c) much different in nature *from each other*.

How, for instance, is some hair an event? Webster's defines "event" as

- 2 a : something that happens : occurrence
- b : a noteworthy happening

Upon looking at the definition of the word, "event," hair would not seem to be an event. Rather, it would seem to be a thing. Per Dr. Taylor's specification, the word "event" could not possibly be some hair. Dr. Shellow also indicated that the construction required by the Final Rejection is not reasonable. (Shellow I ¶8.) Therefore the cited prior art lacks this element of claim 1.

IV.A.5. Missing "processor ... configured to ... identifying a list of high-probability suspects" element.

In responses to cited prior art, Claim 1 of Taylor was amended to limit the invention to those with a "processor further including a computer program configured to calculate probabilities that said individuals are associated with all of the events under investigation and identifying a list of high-probability suspects."

Over the years the Office has purported to have found this limitation in several different references. The most recent Final Rejection finds it in Kumhyr by itself:

...**identifying** a list of high-probability suspects (Kumhyr, Col. 5 Li. 21, a list of preliminary suspects is created). (emphasis added)

Whether or not one skilled in the art would, in the broadest reasonable reading of Taylor's claim 1 in view of the *Taylor* specification encompass Kumhyr Col. 5 is to some extent subjective. Taylor's specification includes an exemplary method for calculating the association probabilities as shown in, *e.g.*, equation (14), while a method for the related task of identifying a list of suspects is supplied by, *e.g.*, equation (15) and the processes described such that each suspect on the short list has a probability of guilt of at least P_G . Kumhyr (Col. 5 Li. 21-25) merely has a list with "a description of identifying physical characteristics, the best captured images, estimates of direction of travel, current location and time, and identified weapons." The word "identifying" is within Kumhyr, but it would seem that this is not specific enough to satisfy the BRI standard given that Taylor's identification information is social security numbers, phone number, license plates, etc.; Kumhyr's elements do not provide accurate, nondegenerate identification information. Rather, Kumhyr only outputs vague physical descriptors applicable to many people:

In my opinion, Kumhyr's system does not actually identify suspects. Kumhyr fails to properly address the error and ambiguity "of measurement" in determining its templates of distinctive object features and, thus, whether a processed image of a person actually produces information that reliably and fully identifies a perpetrator. You might get a match to a person's height and a few other characteristics, but this is a far cry from actually identifying someone. For example, in my experience with the Washington, DC Metropolitan Police Department, we would have alerts like "there is a robbery suspect who was a black male of medium height between 18 and 30 years old wearing jeans, sneakers, and a raincoat or hoodie." That description would be so vague that nobody was stopped (even if someone was found who matched the physical description) because so many people fit it. Kumhyr's technology would probably produce the same result until the technology is modified to get to the point where

it would uniquely identify people. This is not the case even today. Taylor's system, by contrast, would, in my opinion, actually help identify people, since it is crisp and definite enough to much more uniquely and quantitatively distinguish who a suspect is. ... I would consider only Taylor (not Kumhyr) capable of actually quantitatively identifying a list of high-probability suspects. ... As I understand them, neither the Kumhyr, Rossmo, nor Miles reference actually produces a probability that individual(s) are associated with the event(s) under investigation while at the same time identifying a list of high-probability suspects, especially once you consider that the filtering capacities of these systems are far below what is implied and claimed in Taylor. So I do not see them producing these features of claims 1, 14, and 21 of the Taylor reference.

(Shelton I ¶5, ¶7, II ¶15) Because Miles does not calculate the probability that an item of evidence individually proves the conclusion, the previously described attempt to use Miles to obtain this list also does not result in an enabled invention capable of calculating the probability that an individual is associated with all events, or, for that matter, provide a short list of high-probability suspects either.

IV.A.6. Missing “probabilities that said individuals are associated with one of the events under investigation” calculation element.

The Final Rejection pulls the first word of “probability that said ...” in claim 1 (which refers to a computer-generated probability that a suspect is a perpetrator of two or more connected events) from Taylor's context in order to be equated to the probabilities discussed in Kumhyr and Miles. But, paradoxically, recall it also assumes that in order to meet the two or more events element all of the persons who have visited the bank are deemed under investigation, so that probability of being associated with the events under investigation is always unity, according the construction of the Final Rejection.

Reluctance must be given to a such a construction of Taylor's claims, as it is paradoxical. Regarding the notion that Taylor's probability is that an item of

evidence in a trial (such as a witnesses' testimony or a strand of hair) will alter the jury's verdict seems unreasonable. All of Miles' probabilities are fake, not real. (Shellow I ¶17) Fake probabilities are not the same because, as Dr. Shellow pointed out, there are manipulation methods that exist only in the mock jury microcanonical ensemble. (Shellow I ¶14) Consider, the construction of the Final Rejection implies that Taylor's probabilities are all unity but also intentionally fool an imperfect microcanonical ensemble of a hypothetical jury. Because the Miles and Taylor probabilities are actually different, and because the probabilities all would paradoxically become unity, which would defeat the intended purpose of Taylor, the construction by the Final Rejection equating them is unreasonable. Therefore, the Final Rejection would also fail to find this claim element in the latest assembly of prior art.

IV.A.7. The invention as a whole is not obvious.

The sections *supra* of this appeal mostly look at the individual questions of whether or not the assemblage or prior art has one or two specific limitations in Taylor's claims 1, 14, and 21. As stated *supra*, because they all fail to have at least one element, the Examiner failed to make *prima facie* rejection and should be reversed. But even if this were not the case, the number of references the Examiner wishes to bring forth seems, if not infinite, certainly large, and it would seem possible that new references could be added at a rate in step with the amendment rate in a sort of perpetual prosecution.

However, there are other considerations required to make an assessment of obviousness. The combination of the elements, *i.e.*, the consideration of the invention as a whole, also implies such extreme effort on behalf of the Office to

show nonobviousness was not worthwhile. This is because even though the Office has cited at least 19 unique references⁶ that collectively allegedly show all elements of the now drastically more lengthy and limited claims, the invention as a whole is not in the Examiners' vast assembly of the prior art. The sheer number of references alone points away from an obviousness rejection as being meritorious, and none of the 19 references had the "general population" "of unknown association" paired claim element combination when a non-incorrect construction is adopted. As the present Examiner did not resolve the *Graham* factors, the rationale the present Examiner provides for combining the cited references is improper. It can even be shown that the *Graham* factors work in the Applicant's favor. But independent of this issue, and even if the "general population=a family of four" construction is adopted (allegedly because of boiler plate lingo in Taylor's specification and Taylor's claims fails to be restricted in scope to handling cities with a constant and exact population of no more nor less than 5,000,000 persons), there is still the "problem" of the prior art all focusing upon the crime scenes. In doing so, they actually teach away from Taylor's "action at a distance" feature, which, if not magical,⁷ is at least nonobvious, even if it were not reflected and required by all pending claims.

The objective evidence of unobviousness is not evaluated for its 'separate knockdown ability' against the 'stonewall' of the *prima facie* case . . . but is considered together with all other evidence, in determining whether the invention

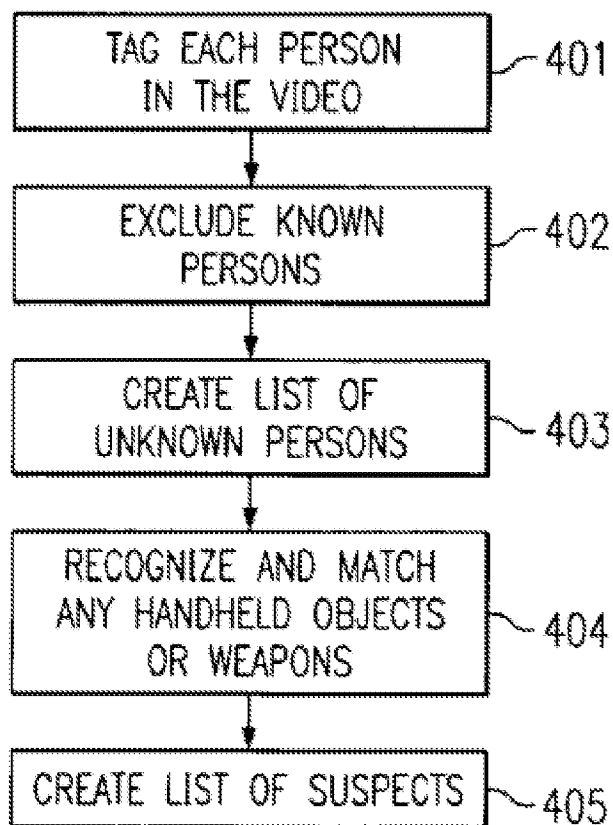
⁶ To date, the Office has suggested that the instant invention is obvious in light of at least Bohannon *et al.*, Boyd, Gutta *et al.*, Hind *et al.*, Kumhyr, Layson *et al.*, Miles, Mohri, Oatley, Peters, Roth, Wheeler, Aviv, Dahbur, Granneman, Rossmo, Peterson, Myr, and, last but not least, Peek.

⁷ "I thought it was interesting, and even a little surprising, that Taylor's method can yield a list of high probability suspects employing observations of people who weren't even at the crime scene." (Shellow II ¶6)

is as a whole would have been obvious to a person of ordinary skill in the field of the invention.

Applied Materials Inc. v. Advanced Semiconductor Materials, 98 F.3d 1563, 1574, 40 USPQ2d 1481, 1486 (Fed. Cir. 1996). Clearly, a relatively broad perspective is required to make a finding regarding obviousness under *Applied Materials Inc.*

Overall, the twelve references cited in the most recent Final Rejection are opposite to Taylor's claimed embodiments regarding their approach. Kumhyr is a system correlating images from perpetrators of a crime with previously stored images taken from the same location. That clearly sets forth the first of several major distinctions between Kumhyr and the instant invention. Kumhyr requires that the individuals who are being analyzed as potential perpetrators already be "tagged" persons of interest. This is evident from Kumhyr's Figure 4:

FIG. 4

By contrast, in the instant invention the individuals who are analyzed as potential suspects are members of the general public, persons of unknown criminality, the time-stamped location data for such population being collected on a continuing basis irrespective of criminal events. The first filter for separating potential suspects from non-suspects is a selection of identification data for members of the general public who are identified for analysis by virtue of their time and location. Thus, Kumhyr nowhere discloses at least one data source that provides time-stamped location data about members of a population

of individuals of unknown criminality, as is required by all pending claims. Further, Kumhyr fails to disclose receiving data about a population of individuals of unknown criminality from a plurality of different data sources, as is also claimed. In fact, the cited prior art teaches away from the claimed system and method of the invention of the subject Patent Application by its concentration on collecting only either crime scene data from the crime scene or known criminals in the image database.

In the cited prior art, when a crime incident is being investigated, the past images that had been taken from the crime location are scanned for matches. While, as Dr. Shellow points out, the software regression software match threshold parameter(s) can be adjusted, for a given facial recognition software run either there is a match or there is not.⁸ Clearly, this simplistic method of categorizing suspects is not a calculation of probability that a particular individual perpetrated a crime being investigated. Rather, all the Kumhyr-matched images have the same probability. Further, there is neither a categorization nor a calculation of an individual's probability of being associated with a crime under investigation for each of a plurality of data sources disclosed by the reference. In contradistinction, the method and system of the instant invention calculates these probabilities using advanced mathematics (*e.g.* equations 1-4) and proffers fundamentally new paradigm of forensics in which seemingly extraneous and irrelevant data (*i.e.*, data generally obtained **far** from a crime scene or locality associated with an event being investigated or of

⁸ “If the degree of similarity reaches a defined threshold (corresponding to statistical correlation models), the system confirms a match between the “live” template and a stored template (step 204).” (Kumhyr col. 3, li. 37-40)

interest) is applied in such a fashion to feasibly be of use to potential investigators.

Hence, the Kumhyr fails to disclose means for calculating probabilities that the individuals are associated with one of the events under investigation using at least a portion of the time-stamped location data having a time and location association with at least one of the events under investigation, as is defined in Claim 1. The reference also fails to disclose the means for calculating probabilities that the individuals are associated with one of the events includes means for calculating a probability that each of the individual is associated with one of the events for each of the plurality of data sources, as now claimed in Claim 18. Kumhyr nowhere discloses the method step of calculating a probability of each individual being associated with at least one of the events under investigation for each of the data sources from a portion of the identification information in the central relational database, the portion of the identification information being both temporally and spatially related to the connected events, as is defined in Claim 14. The prior art's initial tagging requirement is a further teaching away from the present invention, which, as Dr. Shellow pointed out (*e.g.*, Shellow I ¶5, 7; Shellow II, ¶11), could not have, at least when the invention was filed, handled a general population unless the "short list" of high probability suspects is over ~300,000 people. (Shellow II ¶13)

The Final Rejection's construction of Kumhyr's alleged ability to handle two or more events under investigation also distinguishes from the instant invention. It would seem absurd, but that construction requires each archived image to be under investigation.⁹ Therefore, the Kumhyr reference cannot disclose a means

⁹ An advisory action based on Gutta instead of Kumhyr reads, "The events of Gutta are under investigation. Referring to Fig. 3 of the Gutta reference, images are

for calculating probabilities that the individuals are associated with *all* of the events under investigation and identifying a list of high-probability suspects where “events” references “two or more events under investigation” as claim 1 requires. Nor does the reference disclose calculating a probability of each individual being associated with all of the events under investigation from the probabilities of each individual being associated with at least one of the events, as now claimed in Claim 14. Because Kumhyr fails to suggest such a combination of elements/method steps of claims 1 and 14, and in fact teaches away from the claimed combination, it cannot make obvious the present invention when considered as a whole.

With respect to Claims 3-11, these claims were amended specifically so that rather than being an “arrangement of data,” they further define the data source, and in particular for Claims 4-11 defines an interface for translating data from the data source into identification data associated with the data from the data source. While Kumhyr uses a video tape archive, there is no translation from various “data representations” to a common database format for each data item as is required in Taylor’s claims. Nor is there an interface for translating data from the data source into identification data associated with the data from the data source, as now claimed in Claims 3-11, 19 and 20. Kumhyr nowhere discloses or suggests obtaining location information from systems vehicle-mounted RF-ID tags as specifically defined in Claims 8 and 20 and described in the Specification, page 7, lines 9-15.

obtained and analyzed in steps 310-330 and in steps 330-350, if the images detect a fraudulent event, appropriate action is taken to record the images. Therefore the events are under investigation when they first are analyzed by the system.”

Claims 3, 17 and 19 of Taylor are directed to one of the unique aspects of the present invention that warrants further discussion. In the invention of the subject Patent Application, one of the sources of time-stamped location data is a network of groups of traffic monitoring cameras that, among other things, image vehicle license plates at various camera location points. Unlike current traffic monitoring camera systems that transmit video image data to a central facility directly through a high-bandwidth “feed” and store that high-bandwidth image data, the invention of the subject Patent Application converts the image of the license plate into an ASCII representation of the license plate number (alphanumeric), as defined in Claim 3, thereby significantly reducing storage requirements for data from that data source and providing a more convenient data format for translating that data to identification information (*i.e.*, obtaining vehicle owner identification from license plate numbers). More in particular, an embodiment of the instant invention connects the cameras in each group of cameras (*i.e.*, the cameras monitoring a single intersection) to a processor that converts the image data of license plates to ASCII data. The conversion to ASCII data, in addition to providing a more convenient data format for translating that data to identification information and reducing storage requirements, effectively provides data compression on the order of $10^6:1$, as ASCII is a substantially more compact data structure than the image data. The ASCII data, including time and location data is coupled to a network communication device for transmission to the central relational database, a transmission that is of a substantially reduced bandwidth, as defined in Claims 17 and 19. In fact, the bandwidth is sufficiently narrow for the network communication device to transmit the data wirelessly to the central relational database, thereby reducing the infrastructure requirements for the system. Additionally, the conversion to ASCII data, locally to the traffic cameras, makes

encryption of the data being transmitted much more practical than image data being transmitted to the database. That combination of elements/method steps is neither disclosed nor suggested by any of the cited prior art. The Final Rejection speaks about how it would have been obvious to have used compression, but the fact that Kumhyr did not need to use it speaks to its true narrowness of scope and inapplicability to Taylor's claims. The Final Rejection's construction of Taylor's claims specifically designed to encompass Kumhyr's invention, which would have been inoperable if actually scaled up to meet Taylor's claims, not only fails the BRI test but is blatant and impermissible hindsight.

In light of the fundamental difference between requiring data from the event under investigation verses not from the crime scene or event, and the repeated teachings away from the claimed "general population of unknown association with the events under investigation," in various parts of the cited prior art (which is generally directed to getting as much data from things directly associated with the crime as is possible), it is clear that Kumhyr, Rossmo, Miles, Boyd, Layson *et al.*, Hind *et al.*, Peters, Mohri, Granneman, Peterson, Myr, and Peek do not obviate Taylor's invention.

Furthermore, because the Final Rejection appears to rely upon the Examiner's personal opinion that it would have been obvious to have arrived at Taylor's claims from the prior art, and it is in flagrant disagreement with the Shellow I & II declarations by someone who is not merely skilled in the art but who also has achieved numerous accolades within the art that the Examiner has not, Applicant requested that the Examiner provide an affidavit in accordance with MPEP § 2144.03 and 37 C.F.R. § 1.104(d)(2) revealing at least her basis or reference supporting her personal opinion of nonobviousness. Unfortunately, no such declaration was entered into the record. As such, if as it would seem to be the case

that the Final Rejection is indeed based on this personal opinion, yet lacks any Official Notice corroborating it, pursuant to 37 C.F.R. § 1.104(d)(2) this conclusion in the Final Rejection would also seem to be defective for this reason.

Therefore, the Examiner's rejections of the pending claims could be reversed on this basis, even if the allegedly deemed missing elements were all actually within the cited prior art as it is assembled by the Final Rejection.

IV.A.8. The Office's review of this application may be capricious.

The MPEP advertises that examiners will assess the patentability of an invention and work with an applicant to determine the question of patentability. While the MPEP is merely a procedural guide, and the applicant does not wish to discuss issues outside the jurisdiction of the Board, the Office must nevertheless comply with the Administrative Procedures Act (APA), 5 U.S.C. § 701 *et seq.*, which states that arbitrary or capricious examinations will, upon review, be set aside. The MPEP's advertised behavior can therefore help one ascertain if this is being done.

The MPEP states that examiners are to objectively look for allowable material in a patent application and,

Under the principles of compact prosecution, each claim should be reviewed for compliance with every statutory requirement for patentability in the initial review of the application, even if one or more claims are found to be deficient with respect to some statutory requirement. ... one must determine whether the invention would have been obvious at the time the invention was made. If not, the claimed invention satisfies 35 U.S.C. 103. ... The Office action should clearly communicate the findings, conclusions and reasons which support them.

The APA extrinsically requires this be done in a nonarbitrary, noncapricious

fashion. But, unlike the case with normal applications, which have only a few fixed references cited against them during prosecution, here the Office continually adjusted their bases for the rejection of this application, made promises to allow claims if specific limitations were added into the claim, and, even after they were added, failed to allow the claims as had been promised.

Despite *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991) (showing that the CAFC deems that there is no specific limit to the number of references that can be employed to deem something obvious to have combined), this behavior does not seem congruent with the APA. References like Layson were initially used to argue that the prior art already had the claim element, “high probability suspects.” Applicant then amended the claims to exclude technologies involving known suspects. It was concurrently argued that Layson does not deal with members of the general population, but instead only ex-cons. But then the Office replaced Layson with Gutta. The claims were again amended, this time to define over Gutta. But Gutta was then replaced, most recently with Kumhyr. When a rejection suggested that equations were really what was needed in the claims to define over the prior art, a speed parameter was introduced to even further narrow the claims. But then Aviv’s speed parameter was brought in. When that reference was traversed, it was replaced by Dahbur, then Rossmo, and so on, and so on.

Overall, the application received an abnormal review. The preconference appeal decision was only signed by two persons instead of the three that are required. Even the interview was strange; the SPE also apparently seems to have restricted communication between the Examiner and the Applicant, as the Examiner was oddly silent during the entire interview. As reflected in the uncontested Applicant interview summary dated February 14, 2011, when the

Examiner's references were shown to be defective, the SPE said he would attempt to find better prior art himself, and, failing to do so, would allow the pending claims. However, this is not what the interview summary form (PTOL-413) dated September 13, 2010 states. It says a new search will be conducted, and, regardless of the outcome of that search, a new rejection will be made! It seems somewhat confusing and unusual that a new search was going to be done if the claims were already doomed to be obviated by the prior art that would be uncovered in the future search. At any rate, the search initially seemed successful, with Dahbur being that new reference. When that reference was also shown to be inadequate, the SPE should have kept his promise and allowed the case.

The SPE's extreme desire to find art, even after the Examiner had given up, and the subsequent desire to break his promise was unique and unfair, and to have known in advance the search would result in a new rejection of the claims (without regard to the prior art that would be uncovered) arguably seems to single out Taylor as someone who must meet a higher standard than most other applicants. Exactly why was it so imperative that this application be refused an allowance is bit of a mystery. The SPE ignored all proposed claim amendments, and instead made suggestions to further narrow the claims not with respect to any prior art, but, instead, in such a fashion that claim breadth would have become infinitesimal.¹⁰ This was also done without any regard to any of the prior art references, even after 11 office actions had already been issued all allegedly based on it.

That this clearly was not in the applicant's interest is not the issue. Rather, the

¹⁰ Specifically, placing an equation into the claims which used an exact but highly arbitrary constant. An infringer would only need to use a different equation, or even the same equation with an altered constant, even if only by an infinitesimal amount.

indifference to the prior art further points to an abnormal examination. Arguably, it is in violation of the noncapricious requirement of the APA, not to mention against the advertized teachings of the MPEP. From this angle, as absurd as it would seem, it could be conceivable that the actual purpose of the reference shifts was to traverse the prior arguments and original declaration in an adversarial fashion unjustly stacked against the patent applicant.¹¹

The high number of references employed by the examiners in the Office Actions combined with the repeated morphing of the rejections following the addition of new limitations introduced to traverse specific prior art references through a multiplicity of actions could be considered nothing less than a “torturous” examination process. The Office must maintain compliance with § 706(2)(A) of the APA and not arbitrarily single out any application. All applications must get the benefit of compact prosecution. To single out the Taylor application in any way for a protracted and unusual examination would be in violation of the APA and should probably not be condoned by the Board and is yet another basis upon which reversible error can be found.

IV.B. Rejection under 35 U.S.C. § 103 of Claim 4-11, 20, & 22-28

If the independent claims are nonobvious, so too are its dependent claims. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, the analysis *supra* is applicable to the remaining pending claims and also dependent claims 4-11, 20, & 22-28.

However, even if this were not the case, the dependent claims are independently nonobvious. Some of the novel features of these claims were

¹¹ During the interview the SPE was told the Applicant would probably not be able to afford a new declaration to cover changes to the rejection.

discussed in, *e.g.*, § IV.A.8. Furthermore, Taylor's novel "action-at-a-distance-concept" is also alien to the prior art cited against the dependent claims. For instance, regarding claim 20, Hind *et al.* indeed discloses a method for associating purchase records with RF-ID tags of products a person carries to determine the identity of that person (Hind, Col. 3 Li. 41-49). But "[t]his information is used to monitor the movement of the person through the store or other areas." Does, "other areas" refer to, *e.g.*, an attached lumber yard? Perhaps. A crime scene ~50 miles away? It would seem not. After all, RF-ID has a maximum range of ~200 meters. How and why would it have been obvious to have combined Hind to Kumhyr, which is also focused on the store or area of interest? The purpose of Hind would be removed from its original purpose, which was to monitor activity *within* the store (or, arguably, the crime scene, event under investigation, etc.). None of the prior art references fill this void. Nor does the Final Rejection. Hind's focus on the store actually teaches away from Taylor, as do Layson *et al.*, Hind *et al.*, Peters, Mohri, Granneman, Peterson, Myr, and Peek allegedly obviating dependent claims 4-11, 20, & 22-28. Therefore, these references cannot obviate these dependent claims.

V. Conclusion

In this Appeal Brief, it was shown that there are at least five limitations that are not in the assemblage of prior art as described in the Final Rejection. Because there is at least one missing element in the Examiner's assembly of the prior art, a *prima facie* case of obviousness has not been made, and the rejections of claims 1, 3-11, 13-14, 17, and 19-28 should be reversed on at least this basis. However, it was also shown that even if the limitations are independently found in various

pieces the prior art, the combination as assembled would not have yielded an enabled and operational invention with the claimed functionality. It was further shown that Taylor's invention as a whole is not obviated by the combination of the 19 thus-far cited references because they all apparently fail to have the "action-at-a-distance" feature. Finally, it was argued that the examination of this application may not have been in full compliance with the APA. For these reasons, a full reversal of all rejected claims is respectfully requested.

Respectfully submitted,

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For: ROSENBERG, KLEIN & LEE

/David I. Klein/

08/29/2012

DAVID I. KLEIN

Date

VI. Claims Appendix

1. (Rejected) A forensic person tracking and identification system used for analyzing two or more connected events caused by people and under investigation, such system comprising:

at least one data source that provides time-stamped location data about members of a general population of individuals of unknown association with the events under investigation throughout a time domain;

a central relational database for storing said time-stamped location data; and

a processor having a computer program configured to calculate probabilities that said individuals are associated with one of the events under investigation using at least a portion of said time-stamped location data having a time and location association with at least one of the events under investigation, the calculation of probabilities includes at least one parameter accounting for speeds of movement of said individuals, said processor further including a computer program configured to calculate probabilities that said individuals are associated with all of the events under investigation and identifying a list of high-probability suspects.

2. (Canceled).

3. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes a system of traffic monitoring cameras and means to process image data from said traffic monitoring cameras to obtain ASCII license plate data of vehicles to provide to said central relational database.

4. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface with at least one system for translating keycard access transaction data into identification data associated with said keycard access transaction data for storage in said central relational database.

5. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface to at least one cellular telephone network for translating data from use of said network into identification data associated with said data from use of said network for storage in said central relational database.

6. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface to at least one financial data network for translating data from credit or debit financial transactions into identification data associated with said data from credit or debit financial transactions for storage in said central relational database.

7. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface for translating data from a location-disclosing computer into identification data associated with said data from a location-disclosing computer for storage in said central relational database.

8. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface for translating data from

electronic toll road financial transactions into identification data associated with said data from electronic toll road financial transactions for storage in said central relational database.

9. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface for translating data from cable or satellite television usage into identification data associated with said data from cable or satellite television usage for storage in said central relational database.

10. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface for translating data from use of customer-unique discount cards into identification data associated with said data from use of customer-unique discount cards for storage in said central relational database.

11. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface for translating the data from power, water, sewage or other residential utility usage into identification data associated with said data from power, water, sewage or other residential utility usage power for storage in said central relational database.

12. (Canceled).

13. (Rejected) The tracking system of claim 1, wherein said processor is networked to said at least one data source.

14. (Rejected) A method of tracking persons associated with two or more connected events caused by people and under investigation, such method comprising the steps of:

receiving data about a general population of individuals of unknown association with the events under investigation from a plurality of different data sources throughout a time domain;

translating in a processor the data from said data sources into identification information of said population of individuals for storage in a central relational database;

calculating in the processor a probability of each individual being associated with at least one of the events under investigation for each of said data sources from a portion of said identification information in the central relational database, said portion of said identification information being both temporally and spatially related to the connected events, said calculation including a parameter accounting for speeds of movement of said individuals;

calculating in the processor a probability of each individual being associated with all of the events under investigation from said probabilities of each individual being associated with at least one of the events, so as to obtain a short list of suspects associated with the connected events; and

calculating in the processor a probability of obtaining identification of individuals from said short list of suspects responsible for the connected events.

15-16. (Canceled).

17. (Rejected) The method of tracking persons as claimed in claim 14, wherein

the step of receiving data includes the steps of (a) providing a system of groups of traffic monitoring cameras, (b) converting image data of vehicle license plates from each group of traffic monitoring cameras to ASCII license plate data, and (c) transmitting said ASCII license plate data along with corresponding time and location data to said central relational database.

18. (Canceled).

19. (Rejected) The tracking system of claim 3, wherein said system of traffic monitoring cameras includes a plurality of groups of traffic monitoring cameras, each group of traffic monitoring cameras including image processing to obtain said ASCII license plate data of vehicles from image data supplied by said group of traffic monitoring cameras and a network communication device for transmission of said ASCII license plate data along with time and location data to said central relational database.

20. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface for translating data from RF-ID reading equipment into identification data associated with said data from said RF-ID reading equipment for storage in said central relational database.

21. (Rejected) A forensic person tracking and identification system used for analyzing an event caused by people and under investigation, such system comprising:

at least one data source that provides time-stamped location data about members of the general population of individuals of unknown association with the event under investigation throughout a time domain;

a central relational database storing said time-stamped location data and specific identifying information supplied from at least one other data source;

a computer having a computer program configured to calculate probabilities that at least one of said individuals is associated with the event under investigation using at least a portion of said time-stamped location data having a time and location association with the event under investigation, the calculation of probabilities includes at least one parameter accounting for speeds of movement of said individuals, said computer program further extracts from said relational database said specific identifying information corresponding to the individuals.

22. (Rejected) The tracking system of claim 21, wherein said data source providing time-stamped location data includes an interface for translating data received from a radio-frequency identification device into identification data associated with said data from said radio-frequency identification device for storage in said central relational database.

23. (Rejected) The tracking system of claim 22, wherein said data received from said radio-frequency identification device is emitted from vehicles and is vehicle specific.

24. (Rejected) The method of tracking persons as claimed in claim 14, wherein the step of translating the data comprises compressing and encrypting the data to be stored in the central relational database.

25. (Rejected) The tracking system of claim 4, wherein said access transaction data is from at least one public transportation system.

26. (Rejected) The tracking system of claim 21, wherein said data source providing time-stamped location data includes an interface to at least one cellular telephone network for translating data from use of said network into identification data associated with said data from use of said network for storage in said central relational database.

27. (Rejected) The tracking system of claim 1, wherein said data source providing time-stamped location data includes an interface for translating data from a voice-enhanced caller ID service into identification data associated with said data from a voice-enhanced caller ID service for storage in said central relational database.

28. (Rejected) The tracking system of claim 21, wherein said data source providing time-stamped location data includes an interface for translating data from a voice-enhanced caller ID service into identification data associated with said data from a voice-enhanced caller ID service for storage in said central relational database.

VII. Evidence Appendix

Exhibit 1 2009 Declaration under 37 C.F.R. § 1.132 of Robert Shellow, PhD

 This declaration was submitted and entered as part of the Appellant's
December 22, 2009 Arguments/Remarks Made in an Amendment response.

Exhibit 2 2011 Declaration under 37 C.F.R. § 1.132 of Robert Shellow, PhD

 This declaration was submitted and entered as part of the Appellant's
September 26, 2011 Arguments/Remarks Made in an Amendment response.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Confirmation No.: 1647
)	
Jason Arthur TAYLOR	)	Art Unit: 2169
)	
Application No.: 10/957,999	)	Examiner: McCue, B.N.
)	
Filed: 10/04/2004)	
)	
For: FORENSIC PERSON)	
)	
TRACKING METHOD AND)	
)	
APPARATUS)	

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

Sir:

I, Dr. Robert Shellow, hereby make the following declaration:

1. I presently serve as CEO of IMAR Services LLC, a security consulting and loss prevention company located in Bethesda, Maryland. I am a certified security consultant (CSC), and have been involved in the security industry for over 38 years. Previously, I served as president of IMAR Corp. of Washington, DC, a security consulting company founded in 1978. I have also served as president of the International Association of Professional Security Consultants (IAPSC), Inc., which is the most respected and widely

recognized consulting association in the security industry. I have also served as managing director of both Professional Security Consultants International and Cross-Continent Associated, Ltd., which also do work in the fields of security and investigation. I have been licensed as a private investigator. For my contributions to IAPSC and the security industry, I was elected to Meritorious Life Membership. I am listed in *Who's Who in America* and *Who's Who in Science and Industry*. I consider myself skilled in the art of security and am reasonably familiar with the field of criminology and surveillance technology. I am somewhat familiar with several serial crime cases, including the 2002 Beltway Sniper case. At the time of the sniper case, I was employed as Chairman of the Board of Professional Security Consultants-International as well as President of the IMAR Corporation, both of which are independent security consulting firms.

2. I have been asked to provide my candid professional opinions regarding certain “prior art” references. One of several questions I have been asked is whether or not certain combinations of these references, if given to a person skilled in the art back in 2003, would have rendered any of the claimed portions of Taylor as being obvious. I am being compensated for my time spent on this declaration. However, my level of compensation is not a function of what opinions I end up providing.
3. I have reviewed U.S. Pat. No. 6,975,346 (hereinafter, “Kumhyr”). I have paid special attention to the highlighted sections of this document, which were Col. 2, Li. 50-67; Col. 4, Li. 1-7; Col. 5, Li. 21; and Col. 6 Li. 12-17, 43-45, and 56-58. I have also reviewed Patent Application No. 10/957,999 (hereinafter, “Taylor”).
4. I would disagree with any assertion that Kumhyr’s system determines or attempts to determine any suspect guilt probabilities like those in claim 1 of

Taylor. In my opinion, Kumhyr fundamentally does not disclose a system that produces a probability that a suspect is actually guilty of a crime at all. Rather, Col. 6, Li. 12-17 and Li. 43-44 of Kumhyr basically equate to a filtering system. Kumhyr's system, if it worked, which I doubt, attempts to describe here how images from a week's worth or more of archived historical video might automatically be filtered out if it does not contain any objects that "match" those in the objects in the images taken from a crime scene. The remaining non-discarded images that satisfy a high enough "probability of a match" are appended to the existing images taken from a crime scene and subsequently dispersed to the relevant agents and authorities. Thus, Kumhyr's technology does not supply these agents any guilt probabilities, it just supplies additional potentially relevant images, videos, and extracted data that might not even be of use.

5. In my opinion, Kumhyr's system does not actually identify suspects.

Kumhyr fails to properly address the error and ambiguity "of measurement" in determining its templates of distinctive object features and, thus, whether a processed image of a person actually produces information that reliably and fully identifies a perpetrator. You might get a match to a person's height and a few other characteristics, but this is a far cry from actually identifying someone. For example, in my experience with the Washington, DC Metropolitan Police Department, we would have alerts like "there is a robbery suspect who was a black male of medium height between 18 and 30 years old wearing jeans, sneakers, and a raincoat or hoodie." That description would be so vague that nobody was stopped (even if someone was found who matched the physical description) because so many people fit it. Kumhyr's technology would probably produce the same result until the technology is modified to get to the point where it would uniquely

identify people. This is not the case even today. Taylor's system, by contrast, would, in my opinion, actually help identify people, since it is crisp and definite enough to much more uniquely and quantitatively distinguish who a suspect is.

6. I am familiar with several serial crimes including the 2002 Beltway Sniper case. At the time, I was concerned with safety, as were many other people I knew. As best I recall, a system similar to that of Taylor to address the problem of catching the Beltway Sniper did not occur to me or any of my colleagues in the security industry. In my opinion, had one given me the Kumhyr reference in 2003, it would probably not have led me to develop the system claimed by Taylor. I do not think that Kumhyr's disclosure makes Taylor's claimed scheme obvious, since their approaches are so fundamentally different.
7. One difference concerns the underlying data being used. Kumhyr is attempting the very difficult task of quantifying, for example, a person's appearance, posture, gait, and even the way they look. This is a highly qualitative and subjective task unless you force your observations into arbitrary discreet categories. Even if Kumhyr's system worked, and I doubt it would even today, a person's face changes with time and is different depending to what extent they are happy, sad, smiling, frowning, and so on. Kumhyr's data is therefore amorphous, continuous, and fundamentally qualitative. It is an order of magnitude more complex than Taylor's system, which by contrast is fundamentally more finite and doable. The data used in Taylor, such as a license plate, does not require much arbitrary or subjective selection criteria. A license plate, for example, is either MD-HR3212 or it is not. By contrast, there are probably millions of people of medium build between 5'10"-5'11" in height. So regarding this difference between the

qualitative Kumhyr and quantitative Taylor approaches, it seems to me that the system of Taylor is, on the face of it, more practical and having more immediate utility in the sense that I would consider only Taylor (not Kumhyr) capable of actually quantitatively *identifying* a list of high-probability suspects.

8. In a system dealing with serial crimes, I would probably interpret the phrase “connected events under investigation” as referring to the actual serial crimes that had occurred, not the planning of such crimes.
9. At the security conferences, expos, and meetings I attend in my line of work, I would see various vendors who would come in and demonstrate the new technologies and explain how they work, and during the period of 2003 it was clear to me that we were nowhere near the kind of human feature or human characteristic recognition that Kumhyr assumed to be operational. It is probably not even operable now, so it certainly was not operable then. We were having trouble with the big hot items at that time, which were palm recognition, and iris recognition, and fingerprint recognition. There were a lot of problems with those initially. The sort of body and face recognition required by Kumhyr was not there in 2003, especially if no reference template (previously posed pictures taken with ideal lighting), was available. Even using today’s relatively advanced technology, for face recognition to work, one still needs about half of the video image to be filled up by the face. Kumhyr’s cameras presumably used for face recognition are the same as those doing the object recognition (*e.g.*, body height), so the fraction of the screen covering the face would probably be too small. Also, the number of images, visual objects per frame, and video data in a whole month’s worth of video from even one camera is extremely high when compared to a 6-7 character license plate. If you had enough cameras to cover an entire city,

the idea of automatically scanning through a month's worth of non-targeted, non-posed, images well enough to actually "identify" suspects pulled from an entire city's population would probably be unrealistic, even today.

10. I have reviewed U.S. Pat. No. 5,666,157 ("Aviv"). I paid special attention to the highlighted sections of this document, which were Col. 2, Li. 32-36 and Col. 8, Li. 30-41.
11. Aviv's technology, as I understand it, is a crime detection system, not a system that determines suspect guilt probabilities. I see little similarity between that of Aviv and Taylor.
12. If, in 2003, one handed me not only the Kumhyr reference, but also the Aviv reference, the combination of the two still would not have led me to conceive of the Taylor system. If one told me that there was a system like Kumhyr's, that could accurately detect when a person had previously visited a given place, and that there was another system like Aviv's that could accurately distinguish when someone was behaving normally and when someone was behaving criminally, I would first of all be rather surprised. But if I were to set aside my disbelief, and, further, were asked to combine the highlighted sections of the two references, I would probably devise a partially automated system that would first use Aviv's technology to automatically trigger when a crime like an assault might be taking place, and if indeed there was determined to be a crime, which image objects might be of the perpetrators, and then use it to trigger Kumhyr's technology to automatically get potentially related images of the objects that Aviv had highlighted as being criminal in nature. Personally, I do not think it would work, since a bank robber might not be moving fast enough to trigger Aviv, or be jerky enough, or might not say loud and clearly enough without background noise into a near enough microphone, "This is a stickup," etc.

(and would instead think the standard alarm button system already in place to be superior), but that is the thing to do with the two references if you were told ahead of time they led to something. However, I do not see them leading anyone to the system described by Taylor. The Taylor system is just very different from them.

13. The reason I do not see Kumhyr and Aviv leading to Taylor is because Taylor is not concerned about the details of any crime. Taylor is not focused on a criminal's behavior, not focused on his appearance, not focused on him at all. Both Kumhyr and Aviv are focused on the crime scene. Combining them does not change this. Unlike Taylor, neither covers territory outside of the field of view of cameras. The highlighted sections of Aviv are not discussing accelerations or velocities between two different cameras, but instead are limited to the field of view of the cameras.
14. As I understand them, none of the Kumhyr, Aviv, and Miles references actually produce a probability that a single suspect is guilty of a crime (let alone a paired list of suspect identities and probabilities). So, no matter how they are combined, I do not see them producing this feature of claim 1 of the Taylor reference. For all I know, there might be some other references that could be combined together to produce this feature of Taylor, but I personally do not think any of these three references do it.
15. If someone forced me to try to use the Kumhyr and Aviv references to somehow tackle the same problem Taylor solves (such that an entire city is covered), I might come up with a system that would use cameras placed closer than every 10 feet or so apart, since the field of view of any one camera is limited, and these cameras would also be placed within 10 or so feet of desired faces (as in a surveillance camera in an automatic teller machine), since the effectiveness of facial recognition might suffer at larger

distances. But it would be a much different system with a lot more cameras, infrastructure, and personnel. Processing all that video data or somehow automating to actually get quantitative suspect identification information would be very difficult, since object recognition technology is not yet good enough, even today.

16. I have reviewed U.S. Pat. No. 6,125,340 (“Miles”). I have paid special attention to the highlighted sections of this document, which were Col. 7, Li. 50-54 & 65-67 – Col. 8, Li. 1.
17. I would disagree with any assertion that the probabilities discussed in Miles are the same or even similar to those of claim 1 of the Taylor reference. Miles’ system does not give anything about a suspect’s actual guilt probability, but instead is a system about how people will act. Miles not only uses mock jurors, but is even using them in an attempt to determine a sort of mock probability, since it is a system about how best to get people to react or even how to fool them. So the two probabilities are, therefore, much different. Miles’ probability (that a piece of evidence would favorably affect the outcome of a trial) is not the chance that a person is guilty, nor the chance that some evidence would produce a given result, but it is what a jury might decide if, all other things were equal, without any other factors, if that piece of evidence was taken only by itself without any other influences or challenges. So, it is only a “faux probability.”
18. I am not an expert on probability theory, but regarding the calculation of probabilities, the analyses and approaches to computing probabilities that Miles, Aviv, and Kumhyr take, at least in my imperfect understanding of them, are pretty much “run of the mill” and, by comparison to Taylor, not particularly unobvious, arcane, or special.
19. Because Miles deals with probabilities about human behavior instead of

actual guilt probabilities, Miles is plagued with all of the issues well known in the art of survey research, such as biases based on time of day, the way questions are asked, the relationship the “user” has with the questioner, and other biases. Regardless of what evidence is presented to a jury, the utility of the Miles’ probabilities are largely a function of other factors, such as the skill of the defense or prosecuting attorney. Miles’ “faux probability” deals with game theory more than reality. Miles largely assumes that the mock jurors can accurately and faithfully produce a result that ultimately could be duplicated in a courtroom. Even if the probabilities were about the same things, which they are not, this is much different from the automatically computer-generated, objective guilt probabilities of Taylor. To do a better job predicting human behavior, I personally think Miles could have used a system like Triadic judgments, which was pioneered by Prof. Clyde H. Coombs in the ‘50s, where you, for instance, change the order in which things are asked to remove biases, and then can simultaneously solve for not only the best fitting unbiased probabilities, but also their associated ordering biases and errors.

20. If one attempted to somehow use Miles to help with a serial crime situation Taylor deals with, like for instance the 2002 Beltway Sniper incident, it would not work. It is a different kettle of fish, a different animal. Miles is dealing with opinion. There is kind of a gulf between those two. Miles relies entirely upon human opinions as its initial inputs. So, even if they were compatible, it would take too long to implement if the number of suspects is as large as a city’s population.

21. I do not think the Miles reference “helps” one come to the system described by Taylor at all. I do not think Miles would have brought me closer to or farther from Taylor; I think the Miles reference is tangential to Taylor. If, in

2003, someone said to me, here is what we want you to come up with and then described the problem that the Taylor scheme solves, but blacked out his solution and how it worked and then they said, “Now we are going to give you some stuff that will help you, you know, fill in the dots, and help flesh it out,” and they then handed me Kumhyr, and they then handed me Miles, and they then handed me Aviv, I would look at them, study them, pour over them, waste an *awful* lot of time, and when it was all over with I would say, “What the [expletive removed from transcript] am I supposed to do with this?” because it does not really help me design any part of the Taylor system, that *I* understand at least.

22. I also do not think Miles changes the problem that Kumhyr and Aviv have of only covering the crime scene. If there is no video tape, they cannot do anything and are dead in the water. They are totally dependent upon being at the crime scene.

23. In my opinion, it would not have been obvious to have combined Kumhyr, Aviv, and Miles to obtain Taylor, and exposure to Kumhyr, Aviv, and Miles would not have helped one skilled in my art to arrive at the Taylor concept on his or her own for use in criminal investigations.

24. The task of identifying entities is markedly different in Taylor as opposed to Kumhyr, Aviv and Miles. The physical characteristics upon which Kumhyr’s method of discrimination is based are complex and represent subtle, continuous dimensions. The phenomena measured vary in degree. Hair and eye color vary in shades as does the height, bulk, or prominence of cheek bones. Assumptions have to be employed regarding the stimulus pattern that represents a discernable characteristic of the target. In Kumhyr, arrival at the conclusion that two scanned images represent the same person require assumptions and standards regarding which scanned patterns to

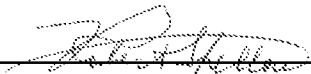
include and which to discard in the comparisons.

25. Aviv's methodology is also essentially interpretive. What discriminates movement that is "criminal" in nature from one that is not also requires assumed (that is assigned) standards for identifying and categorizing observed behavior. Separating criminal assaultive behavior from teen-age horseplay is likely to be a daunting task requiring many discriminating judgments.
26. Miles departs markedly from Kumhyr and Aviv as well as Taylor in that his empirical data consist of reported opinions. Respondents are forced into placing a single chosen element of evidence above all others as critical in a trial. Here, again, assumptions are necessary. A relatively powerful Ordinal Scale of measurement is assumed to apply and the choices are forced onto a single assumed dimension of effectiveness. Given the fast moving dynamics of real-world criminal prosecutions, it is highly unlikely that the result of the Miles exercise would have any relevance.
27. For Taylor, the task is greatly simplified since the reference database against which optical patterns are compared consists of, *e.g.*, 36 discrete patterns—ten integers and 26 letters of the alphabet. The lion's share of computing power and memory is devoted to discriminating between scanned patterns in Kumhyr and Aviv; while Taylor's methodology resolves that issue simply and quickly, focusing the bulk of computing power on the task of finding simultaneity between a critical event and geographic positioning of discrete entities, namely coded identities (license plate number, credit card, etc.).
28. More to the point, from the perspective of crime control and prevention, the Taylor method stands apart from the other three and in no way proceeds from them. The only underlying thing they really have in common is the

focus on criminal behavior. However, one element Kumhyr, Aviv and Taylor do have in common is the use of Closed Circuit Television technology as a tool to collect data and the employment of computational machines to analyze and give it meaning.

29. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, or any Patent issued thereon.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Robert Shellow", is written over a solid horizontal line.

Robert Shellow, PhD

Dated: December 21, 2009

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Confirmation No.: 1647
Jason Arthur TAYLOR	)	Art Unit: 2169
Application No.: 10/957,999	)	Examiner: McCue, B.N.
Filed: 10/04/2004)	
or: FORENSIC PERSON)	
TRACKING METHOD AND)	
APPARATUS)	

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

Sir:

I, Dr. Robert Shellow, hereby make the following declaration:

1. I presently serve as CEO of IMAR Services LLC, a security consulting and loss prevention company located in Bethesda, Maryland. My qualifications were given in a previous declaration dated December 21, 2009 so are not replicated here.
2. I have again been asked to provide my candid professional opinions regarding the possible obviousness of the Taylor invention to a person

skilled in the art in 2003 in light of certain prior art references. I am being compensated for my time spent on this declaration. However, my level of compensation is not a function of what opinions I end up providing.

3. I have re-reviewed U.S. Pat. No. 6,975,346 (hereinafter, “Kumhyr”) paying special attention to the highlighted sections of this document, which were the same as before: Col. 2, Li. 50-67; Col. 4, Li. 1-7; Col. 5, Li. 21; and Col. 6 Li. 12-17, 43-45, and 56-58. I have also reviewed for the first time U.S. Pat. No. 5,781,704 (hereinafter, “Rossmo”), paying special attention to the highlighted sections of this document, which were Col. 2, Li. 61-67; Col. 5, Li. 24-34 & 52-65; Col. 6, Li. 45 – Col. 7, Li. 8; and, due to a highlighting error, the entire Col. 14. (I now realize that only lines 36-39 were cited by the Examiner.) I have also re-reviewed Patent Application No. 10/957,999 (hereinafter, “Taylor”) and U.S. Pat. No. 6,125,340 (hereinafter, “Miles”). For the latter document I have paid special attention to the highlighted sections, which were, as before, Col. 7, Li. 50-54 & 65-67 – Col. 8, Li. 1. Since my prior declaration already addressed the Kumhyr and Miles references, most of my work in this review pertains to Rossmo in some way.

4. The references represent different methodological approaches. Kumhyr attempts to correlate the appearance of unique individuals at the time and place of a criminal event with it’s occurrence. Kumhyr doesn’t seem to mention speed or for that matter distance; only direction taken by possible suspects after the crime has been committed. Rossmo employs assumptions based on experience and possible past research that links the location of a suspect to the geography of a criminal event. Rossmo takes an entirely different tack from Taylor. Rossmo draws on the aforementioned

experience and research in an attempt to calculate the *probable* location of the residence of a predator based on mobility assumptions along with a convergence of data from a series of crime locations. Miles' system is different, it is all about how people (namely, mock jurors) will act given information known to be related to a crime. Taylor is the only one that fundamentally utilizes information away from the crime scene(s) about members of a general population not necessarily connected to the event.

5. Both Taylor and Kumhyr seek to capture the identity of who was present at or near the time and place of a crime. Nothing new here. This is a standard law enforcement goal of criminal investigation. The existence of a serial criminal improves the chances of detection, narrowing the focus of each system's attention. With each successive criminal occurrence, whether the act of a single criminal or criminal group, the entity or entities present in all occurrences improves the chances of identifying the culprit(s). Kumhyr attempts to arrive at the identity of a criminal through data collected at the crime scene. Though Taylor's approach also strives to find unique matches between non-contemporaneously collected data; it elects to use much harder data than Kumhyr, namely unique identifiers of persons or entities. That the two seek to identify who was at or near the scene when the crime was committed is by no means an inventive approach to criminal investigation. Each went about devising an approach in their own way neither precluding nor informing the other's method.

6. The input of Rossmo's technology is the locations of actual crime scenes. The input of Taylor is "time-stamped location data about members of a general population." Crime scenes are not the same as regular people.

It would not be obvious to me to substitute Rossmo crime scene locations, of which there are only a few, with the locations of Taylor's members of the general population, of which there are millions. Such a switch leads one further away from the crime and its perpetrator(s). I thought it was interesting, and even a little surprising, that Taylor's method can yield a list of high probability suspects employing observations of people who weren't even at the crime scene.

7. Speed, distance, and time, are different. Though one can in some cases be computed from the other two, they are not arbitrarily interchangeable. Rossmo's invention clearly uses distances, but it does not directly use velocity or speed, at least in my opinion. Claims 1, 14, and 21 of Taylor apparently require at least one "parameter accounting for speeds of movement of said individuals." The introduction of a measurement of velocity is a key element that sets Taylor aside from the other references. Rossmo mentions a speed of sorts in the background section of his or her patent, but the calculation of speed of any kind is not essential to his technology. Since speed is not essential to Rossmo's invention there is no clear relation to Taylor's specific use in claims 1, 14, and 21.

8. For example, consider the phrase "travel time" which Rossmo does use in column 14. This is, in my opinion, very open ended. It is not specific to any travel time from any specific point A to point B. If, for example, a rape occurred in Washington DC on 20th and P St. at 1:15 a.m., that's a specific event. No speed can be derived from that information. Even if Rossmo's historic data implicitly contains speed information, like, say, the average time it takes to walk from a rape site to a diner or to a home, it is not

clear to me how this information would be discreet or specific enough to be interpreted as Taylor's "one parameter accounting for speeds of movement of said individuals." In Taylor, the distances may be that between a camera location to a crime scene or from one camera location A to other locations B, C, D, etc. These are precisely fixed distances; capable of being measured to within several feet. So Taylor's claim 1 is specific. It is delineated by time-stamped location data of people. It is a far cry from the "any distance related measurement can be used... all work" of Rossmo. While the use of the word *speed* in Rossmo's background section, might also be indirectly implied in column 14's "travel time," it is not speed in the sense of a ratio of a fixed distance to a fixed time. Neither is fixed in Rossmo. The phrases "*any* distance related measurement can be used" and "would *all* work" implies that any velocity mentioned in Rossmo would be too vague to satisfy Taylor's claim 1, at least as I would interpret it.

9. If I was an inventor and I was handed Rossmo and Kumhyr I cannot see how I would have combined them to make Taylor. If I was specifically told to use a speed from Rossmo, I would probably have to use as speed the time it takes to move from one crime site to the next assuming that the perpetrator would immediately make the journey without delay, without detours, without stopping to rest, or to purchase anything on the way, etc. In my experience this would be highly unusual.

10. As to whether or not the combination of these three references might be operational, it might be relevant to someone reading my declaration to note that Rossmo fails in many situations in which Taylor does not. I am somewhat skeptical of the 95% filtering figure cited in column 12 of

Rossmo for a “good result.” If one pre-screens their cases like that they can get misleading statistics. I think I touched on that a little in the previous declaration. Anyway, Taylor excludes suspects based on his mathematical algorithms. Rossmo assumes that the crimes are somewhat centered around the residences of the criminals and is easily defeated. Consider the 2002 Beltway sniper case, where the criminals’ residences weren’t, at least as I recall, near the geometric center of the crimes. I think Rossmo’s approach failed there. I personally don’t have a vested interest in what entities do with their various technologies, which is better, which is worse, etc., but Taylor’s approach would seem to handle such off-centered cases much better, and requires fewer assumptions, so his use of the phrase “members of a *general* population of individuals of unknown association with the events under investigation” as an input and “list of high-probability suspects” as an output seems to be applicable to Taylor but less so to Rossmo.

11. To expand on that I can try to compare the references to the more quantitative aspects of Taylor’s claims. A more subjective comparison of most of the references was already supplied. Taylor’s claim 1 has a phrase “data about members of a general population of individuals of unknown association with the events under investigation” to describe its input data. It also has a “list of high probability suspects” phrase describing its output data. I am not sure what exactly defines “general population,” or just how small or big such a population might be, but we get an idea from pages 12-14 of Taylor, which assumed a population of 5 million people and apparently outputs a list of as low as only 12 high-probability suspects. I am not going to attempt to verify that is correct. But it does seem to imply a system with a raw uncorrected “filtering capacity” of 0.4 million:1. I can

compare that to the three references, and see how near they are. I will compare Kumhyr first. He uses, among other things, facial recognition from perhaps 50 ft of images with multiple bodies from CCT monitors. I would guess that there are going to be very high “failure to enroll rates” with far less than required half of the image being a singular face, so if I had to guess you might get a 10% false acceptance rate. So if Kumhyr experiences a typical false acceptance rate his system has a filtering ratio that is too low by a very large factor.

12. Moving to Rossmo, he or she does not purport to provide any identifying information regarding a plausible suspect other than, perhaps, a likely neighborhood of residence. Successive crimes, assumed to be committed by a single person or group, provide more data points for calculating distances. A specific claim is a 5% crime area-reduction factor, which translates into a filtering capacity of 20:1. Again, this is going to be too low, in my opinion, to approach the ranges implied by Taylor’s claim 1. The two filtering technologies are strikingly different with Rossmo producing a 20:1 filtering capacity and Taylor 0.4 million:1.

13. Lastly, moving to Miles, his system only evaluates one person. That suspect was already heavily filtered out beforehand using methods extrinsic to Miles. So Miles has a filtering capacity of 1:1, which more clearly is outside what I would think is reasonably expected from Taylor’s claims. So individually none of the references lead to the Taylor claims. Now the word “high” and “short” are subjective of course, but claim 1 of Taylor seems to imply something different from what the examiner seems to have had in mind in suggesting that Kumhyr and Rossmo, and Miles could be combined

to arrive at Taylor. It wasn't even clear to me how combining the three references together results in something operational, let alone having drastic improvement in filtering ability that comes near what claim 1 seems to imply. Even if you ignore the input limitations of claim 1, and just focus on the output restrictions, you still run into problems. For instance, if I just look at Rossmo, which seems to have the best filtering of the prior art references, and produced a "short list" of its 5% "good result" of the DC population, and handed it over to the police, it would be perhaps $5\% \times 6$ million, or about 300,000 people. That list might be valuable, but I don't think it could be construed as being a "short list of high-probably suspects." Nor do I think a detective would take seriously the idea of interviewing that many suspects.

14. For similar reasons as before, it would not have been obvious to me to have modified Kumhyr in view of Rossmo to have included Miles' computer program configured to calculate the probabilities in Taylor. Miles can only compute probabilities of suspects that were previously screened using other methods allowing them to be brought to trial. If I were handed Miles to use with Kumhyr and Rossmo in some combination the last thing I would be concerned with is a general population, since Miles already drastically restricts who is being judged. Since Miles already has that filtering done beforehand using means extrinsic to Miles, his technology is markedly dissimilar from the Taylor filtering algorithm or technology.

15. Miles, Kumhyr, Rossmo and Taylor all employ probability and mathematics to construct their inventions. I am not an expert in those fields. It is my layman's impression that they have each done so in an imaginative

and creative way. Regarding the forensic aspect of these references, I cannot see how the work of Taylor is obviated by the other references. As I understand them, neither the Kumhyr, Rossmo, nor Miles reference actually produces a probability that individual(s) are associated with the event(s) under investigation while at the same time identifying a list of high-probability suspects, especially once you consider that the filtering capacities of these systems are far below what is implied and claimed in Taylor. So I do not see them producing these features of claims 1, 14, and 21 of the Taylor reference. In my opinion, it would not have been obvious to have combined Kumhyr, Rossmo, and Miles to obtain the invention of Taylor as delimited by these claims, and exposure to Kumhyr, Rossmo, and Miles would not have helped one skilled in my art to arrive at the Taylor concept for use in criminal investigations.

16. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, or any Patent issued thereon.

Respectfully submitted,



Robert Shellow, PhD

Dated: September 25, 2011