A) CONSTRUCTION

Claim 1

1.1 *A system for providing electrical power to a road vehicle*

A system Claim 1 is an independent apparatus claim to a system, i.e. a group of components that together perform a function.

for = suitable for and not limited to

providing electrical power to = supplying electricity to because this is the normal meaning

a road vehicle = a vehicle which travels along a roadway powered by an external source of electricity because this is the normal meaning of the words in the context of the patent. Examples include a trolley car which runs on wheels on a road or a tram which runs on tracks on a road (page 5, line 9).

1.2 *the system comprising at least a pair of gantries and an overhead cable supported by a carrier cable extending from the gantries at an elevated position*

the system comprising = it has the features that follow, and may also have other features

at least a pair of = two (or more) similar or corresponding items which operate together because this is the normal meaning of "pair"

gantries = structures which support the weight of an overhead cable above a road vehicle while providing a through-path for it because this is their purpose (page 5, lines 15-16 and 10-11).

and an overhead cable = a cable for carrying electricity which is held above and supplies electricity to road vehicles because this is its purpose (page 3, lines 7-10).

supported by a carrier cable = the overhead cable is held in place by a separate cable (e.g. via dropper wires) (page 3, line 19; page 5, lines 15-16).

extending from the gantries at an elevated position = the carrier cable is located between and attached to the gantries so that it is held above the path of the vehicle because this is the configuration described on page 5, lines 15-19.

1.3 *the gantries each having a support leg for engaging the ground either side of a road and a beam spanning the road between support legs*

"Support leg" means a generally vertical pillar and "beam" means a rigid, generally horizontal element, because these are the normal meanings of these words, and are the only structures described in the

patent (page 5, lines 13-14 and Figure 2). The gantries have two support legs which are attached to the ground, one on either side of the road, and which support the beam above and across the road, so that traffic can pass between the legs and beneath the beam.

1.4 *the overhead cable being connected or connectable to a supply of electricity*

This covers two alternatives: a source of electrical power is electrically connected to the overhead cable, i.e. the power source is part of the claimed system; or the overhead cable is capable of being connected to the source of electrical power, but the power source is not part of the claimed system.

1.5 *a first end of the carrier cable being rigidly secured to a first of the gantries*

a first end of the carrier cable

"a first end" = the part of the carrier cable which is attached to the first gantry (not necessarily the terminal end) because this is shown in Fig 2 and described on p5, lines 15-21.

being rigidly secured = the carrier cable is attached to the gantry in such a way that the gantry provides a fixed anchor for it so that the resilient biaser at the other end can generate tension, because this is the purpose of the connections between the carrier cable and the pair of gantries. There does not need to be a direct connection, as long as the purpose is achieved.

to a first of the gantries = one of the pair of gantries in 1.2. The use of "first" and "second" is reversed in the description compared to 1.5 and 1.6. Which is "first" and which "second" does not matter as long as they operate together as a pair.

1.6 *a second end of the carrier cable being secured to the second gantry by a resilient biaser arranged to generate tension in the carrier cable*

a second end of the carrier cable = the part of the carrier cable which is adjacent and attached to the second gantry for the same reason as in 1.5.

being secured to the second gantry by a resilient biaser = attached to the second gantry (i.e. the other of the pair of gantries for same reason as in 1.5) so that the carrier cable is supported in its elevated position by the gantry because this is its purpose (page 5, lines 16-17). In Figure 2, the resilient biaser is directly attached to the cable and the gantry. However, indirect attachment (e.g. via another component between the resilient biaser and the gantry) would also achieve the purpose of supporting the cable, so direct attachment is not required.

resilient biaser = a device that generates an opposing force in response to a change in its length, e.g. a constant force coil spring or a helical spring, because this is its function (page 5, lines 24-30).

arranged to generate tension in the carrier cable = the combination of force on the carrier cable from the resilient biaser at one end and the rigid attachment to the gantry at the other end result in tension in the cable between them because this is the purpose (page 5, lines 20-21).

Claim 2

2.1 ***A system according to Claim 1***

The system has all of the features of claim 1, plus the following

2.2 ***wherein the cable has a core and a sheath***

Claim 1 has two cables: the OHE cable and the carrier cable. The cable in Claim 2 must be the OHE cable, since the patent describes an OHE cable having a core and a sheath (page 5, lines 41-46 and Figure 4), whereas there is no discussion of the structure of the carrier cable.

The core is the central part of the cable and the sheath is the outer part of the cable (apart from the side where it makes contact with the road vehicle) because this is the normal meaning of the words, and because the outer layer is described as a cover (page 4, line 27) or a coating (page 5, line 43).

2.3 ***the core being formed of a first material and the sheath being formed of a second material***

The core is made from an electrically conductive material because its purpose is to conduct electricity (page 5, line 42). The sheath is made from a different, protective material, because its purpose is to protect the core (page 5, line 43).

Claim 3

3.1 ***A system according to Claim 1***

The system has all of the features of claim 1, plus the following

3.2 ***wherein the resilient biaser is a spring***

The resilient biaser is any type of spring which applies a tensioning force to the cable as the cable expands and contracts, and thereby compensates for the change in the length of the cable because

this is its purpose (page 4, lines 8-10), e.g. a constant force spring, a helical tension spring or a helical compression spring (page 4, lines 11-12).

Claim 4

4.1 ***A system according to Claim 3***

The system has all of the features of claim 3 and claim 1, plus the following

4.2 ***wherein the resilient biaser is secured to the gantries via a flexible connector***

The use of "gantries" is an error, since claim 1 on which claim 4 depends requires that the resilient biaser is secured to the (singular) second gantry. Thus "gantries" should be read as "second gantry".

The resilient biaser (the spring) is in a housing that is connected to the gantry via a ball and socket joint (page 5, lines 31-40). Thus "secured to" does not require direct connection between the resilient biaser and the gantry.

The purpose of the flexible connector is to allow pivoting motion between the biaser and the gantry (page 4, lines 17-19). There is an error on line 19: clearly "relative motion between the biaser and the cable" should be "relative motion between the biaser and the gantry" in view of the earlier part of this sentence. "Relative motion" must refer to pivoting motion because the flexible connector may be a ball and socket joint (and not translational motion along the direction of the cable which would counteract the effect of the spring in tensioning the cable). So flexible connector = an element which connects the biaser to the gantry while allowing pivoting motion.

4.3 ***and is rigidly secured to a first end of the carrier cable***

Claim 1 on which claim 4 depends requires that the resilient biaser is secured to the second end of the carrier cable. Thus "first end" in 4.3 should be "second end".

Rigidly secured = the resilient biaser is connected to the second end of the carrier cable so that no relative movement is possible between them, because this is the normal meaning and is described on page 4, line 17 and Figure 3C.

Claim 5

5.1 ***A cable for carrying electricity particularly in an overhead power system***

A cable = a thick wire because this is the normal meaning in this context

for carrying electricity = suitable for conducting electricity

*particularly in an overhead power system: '*particularly" is not limiting, so the cable is not necessarily suitable for an overhead power system.

5.2 ***the cable comprising a core and a sheath*****,**

The core is the central part of the cable and the sheath is the outer part of the cable (apart from the side where it makes contact with the road vehicle) because this is the normal meaning of the words, and because the outer layer is described as a cover (page 4, line 27) or a coating (page 5, line 43).

5.3 ***the core being formed of a relatively conductive material and the sheath being formed from an elastic material***

The purpose of the core is to conduct electricity, so the core is made from a material which is a good electrical conductor. The claim does not say what the conductivity is relative to; however, the context (specifying the type of materials in the core and sheath) implies that it is relative to the sheath material. The sheath is made from an elastic, i.e. resilient, material, e.g. rubber, because its purpose is to withstand clamping forces when in use (page 5, lines 44-46).

5.4 ***the core having a cross section which is not circular*****.**

The conventional cable O (Figure 1C) is said to have a substantially circular cross-section, but is shown as having two recesses in the upper half (rebates A1, A2). Since this is acknowledged prior art, it cannot be intended to fall within the term not "not circular". The purpose of the non-circular cross-section is to provide a flat surface which contacts the electrical contact on the road vehicle (page 5, line 46-47). Examples of possible non-circular cross-sections are square, pentagonal and hexagonal (Figure 4). A cross-section which is not circular means a cross-section which is generally flat in the region where it which contacts the electrical contact on the road vehicle (i.e. the lower side), because this is in accordance with the purpose and it excludes the conventional cable with recesses.

B) INFRINGEMENT

Claims are infringed if all features are present using the normal interpretation set out in the construction section or, where a feature is not present, if the variation is immaterial. Whether a variant is immaterial is determined by the Actavis questions.

Claim 1

1.1 Present

The system shown on page 12 has an overhead electricity cable (OHE - see page 3, line 8) which provides electrical power to a tram, which is a type of road vehicle. See also page 11, lines 2 -5.

1.2 Present

There are two gantries, one at each end of the tramway (page 11, lines 30-31). These are a pair because they are similar items (both have the same structure – page 11, lines 31 – 35) and they operate together (to provide an electrical connection to each end of the OHE).

The gantries of Doc B support the weight of an overhead cable above a road vehicle while providing a through-path for it. Moreover, the same word (gantry) is used in both claim 1 and Doc B.

The OHE cable is held above a tram, supplies electricity to it and is supported by the separate carrier cable. This is shown on page 12 in the town part of the tramway, but must also be present at the termini, since the OHE cable extends from one gantry at one terminus of the tramway to the other gantry at the other end of the tramway (page 11, lines 30-31).

1.3 Present

The gantries each have two legs (implicitly ground-engaging on either side of the tramway) which are connected by a cross-beam (page 11, line 33). It is implicit that the gantries span the tramway to provide a through-path for vehicles (otherwise why would they have two legs?). However, it should be confirmed that there is a through-path at the termini.

1.4 Present

The overhead cable is connected at the gantries to a supply of electricity (page 11, line 30-31).

1.5 Present

Each end of the carrier cable is attached to a terminal gantry via a suspension cable slung between the legs of the gantry. The suspension cable can be considered to be part of the carrier cable because

it supports the carrier cable which supports the OHE cable. One end of the suspension cable is connected to the gantry by a spring, and the other by an anchor bolt static connection which provides an anchor for the carrier cable (page 11, lines 33-35).

1.6 Present

The second end of the carrier cable is connected to the second gantry in the same manner (page 11, lines 33-35). The spring is a resilient biaser (page 4, line 8).

The combination of the springs and anchor bolts together generate tension in the suspension cables, which in turn tensions the carrier cable (page 11, line 17).

Claim 1 is infringed because all of the features are present in the Me2 system.

Claim 2

2.1 Present as above for claim 1

2.2 Present: page 11, lines 36-37 describes a coated cable which is square and advantageous over conventional cables. It must be an OHE cable (not a carrier cable) because the Plan View on page 12 shows a square OHE cable and a circular carrier cable.

2.3 Present: it is implicit that the core and sheath are formed of different materials, since otherwise, there would be no point in having a coating.

The additional features are present, so claim 2 is infringed.

Claim 3

3.1 Present as above for claim 1

3.2 Present: the resilient biaser is a spring (page 11, line 33 and figure on page 13)

The additional features are present so claim 3 is infringed.

Claim 4

4.1 Present as above for claim 3

4.2 Present

It appears that the springs are connected to the terminal gantry in the same way as they are to the buildings (page 11, lines 33-34), i.e. the spring is connected to an anchor bolt by means of a universal coupling, which allows relative pivoting motion between the spring and the building (page 11, lines 22-24, and figure on page 13, which shows a hinge connector / 3D connection).

4.3 Likely Present

There is no information in Doc B about how the spring is connected to the suspension cable (the right hand connection of the spring is not shown in the figure on page 13). It seems likely that this would be a simple direct connection that does not allow relative motion between the spring and the suspension cable. This should be investigated.
The additional feature 4.2 is present and 4.3 is likely present, so claim 4 is tentatively infringed, subject to checking the connection between the spring and the suspension cable.

Claim 5

5.1 Present

Page 11, lines 36 describes a coated, square cable. It must be an OHE cable (not a carrier cable) because the Plan View on page 12 shows a square OHE cable and a circular carrier cable.

5.2 Present

It is implicit that a coated cable has a core (the part inside the coating) and a sheath (the coating).

5.3 Not known

The core of an OHE cable must be electrically conductive. There is no information on the nature of the coating, so it is not known whether or not it is elastic.

5.4 Present: the cable is square (page 11, line 36, Plan View on page 12).

Conclusion: claim 5 is infringed if the coating material is elastic. This should be investigated.

C) NOVELTY

There are three prior art documents:

- the acknowledged background to the patent on page 3, lines 4 – 32; page 4, line 35 to page 5, line 7; and Figures 1A – 1D of doc A.
- doc C - published in January 2010, before the priority date of the patent (14 July 2015)
- doc D - published in October 1980, also before the priority date of the patent.

The background of doc A discusses both power systems and cables so is relevant for all claims.
Doc C is only concerned with cables, so is only relevant for the novelty of claim 5.
Doc D is only concerned with power systems, so is only relevant for the novelty of claims 1 – 4.

Document A

Claim 1

1.1 Present

The system provides electrical power to a train. It has weights for tensioning the cable (page 3, line 26) which are potentially hazardous when installed on roadways (page 3, line 37); however, this hazard could in principle be overcome (e.g. by a failsafe mechanism of some type) so it does not make the system unsuitable for road vehicles.

1.2 Not present

The system (Figure 1A) has pylons (P), an overhead cable (O) supported by a carrier cable (C) which is located between the pylons. The pylons support the weight of the cables above the track. Adjacent pylons are a pair because they are similar items which operate together to support the cable between them.
However, the pylons are not gantries, because the vehicle does not travel through them, i.e. there is no through-path.

1.3 Not present

The pylons only have one leg and thus do not engage the ground on either side of the track.

1.4 Present

Cable O is connected to a supply of electricity (page 3, line 29-30; also transformer T in Figure 1D).

1.5 Present

The part of the carrier cable which is attached to the end of the beam (e.g. of the pylon with the transformer T in Figure 1D) is a first end as construed above. The carrier cable is shown as being attached to the arm of the pylon, but it is not stated whether this is rigid or not. Clearly tension could be maintained by having a weight on one pylon and either another weight or a fixed attachment at the next pylon. Page 5, lines 6-7 state that weights may be present at successive or periodic pylons, i.e. they do not have to be present at every pylon. Therefore it is implicit that at some pylons there is a fixed attachment i.e. an anchor point at some pylons.

1.6 Not present

The carrier cable has a second end (shown in Figure 1D), but there is no resilient biaser – instead the carrier cable is tensioned by the weights W (page 5, lines 6 – 7, Figure 1D).

Features 1.2, 1.3 and 1.6 are not present, so claim 1 is novel.

Claim 2

2.1 Not present as above for claim 1

2.2 Present: a traditional OHE cable has a copper core and may be coated, at least on the non-contact side (page 3, lines 30 – 31).

2.3 Present: the protective cover is implicitly a different material from the copper core.

The additional features are present; claim 2 is novel by its dependency on claim 1.

Claim 3

3.1 Not present as above for claim 1

3.2 Not present: there is no resilient biaser (see 1.6), in particular no spring.

Claim 3 is novel both by dependency on claim 1 and because the additional feature is not present.

Claim 4

4.1 Not present as above for claim 3

4.2 Not present

There is no resilient biaser or gantry (see 1.6). The weights & pulley (which perform the same function) appear to be rigidly connected to the pylons. There is no disclosure of a connection that would allow pivoting motion between the biaser and gantry.

4.3 Not present

The weights appear to be rigidly secured to the carrier cable, but there is no resilient biaser (see 1.6).

Claim 4 is novel both by dependency on claim 3 and because the additional features are not present.

Claim 5

5.1 Present: page 3, lines 30-31 describe a traditional OHE cable for use in overhead power systems.

5.2 Present: the cable has a copper core and may be coated (at least on the non-contact side) by a protective cover, i.e. a sheath.

5.3 Not present

Copper is a good electrical conductor (page 3, line 16). However, there is no information on the nature of the protective coating material, so it is not known whether or not it is elastic. The nature of the coating material in traditional OHE cable should be checked with the client.

5.4 Not present

The cable cross-section is shown in Figure 1C. It is circular, apart from two recesses (rebates A1, A2) on the upper side. It has a circular shape on the lower side where the cable makes contact with the vehicle, i.e. it is not generally flat in the contact region. Therefore the core has a cross section which is circular, according to the above construction.

Feature 5.4 is not present and 5.3 may also not be present, so claim 5 is novel.

Document C

Claim 5

5.1 Present

The figures on page 14 show a thin thread which conducts electricity. Lines 26-27 state that this approach could also be used for thicker gauge materials for heavier duty work. Therefore Doc C discloses a cable for carrying electricity. There is no mention of an overhead power system; however, this is an optional, non-limiting feature.

5.2 Present

The cable has a core and a sheath (the coating) – Figures on page 14.

5.3 Not present

The core is an electrically conductive material (page 14, lines 10 – 12).

The coating is an insulating polymer (page 14, line 12 & figures). However, it is not stated whether or not this is elastic (not all polymers are elastic). Therefore this feature is not disclosed.

5.4 Present

The cable cross-section is rectangular (figure on page 14).

Feature 5.3 is not present, so claim 5 is novel.

Document D

Claim 1

1.1 Present

The system provides electrical power to a train (page 15, lines 14 – 17). It has weights for tensioning the cable (Figure on page 16) which are potentially hazardous when installed on roadways (page 3, line 37); however, this hazard could be overcome (e.g. by a failsafe mechanism of some type) so it does not make the system unsuitable for road vehicles. Page 15, line 27 mentions urban rail

installations, which could include trams, and certainly suggests that the system is suitable for road vehicles.

1.2 Present

The system has gantries and overhead cables suspended from carrier cables (page 15, lines 16 – 17). Implicitly, the adjacent gantries operate together support the weight of the cables which extend between them above the track, and hence are a pair.

1.3 Present

The structure of the gantries is not discussed; however gantries implicitly have two legs which engage the ground and a beam, since line 16 distinguishes gantries and pylons.

1.4 Present

Trains receive electrical power from the overhead cable (page 15, lines 17-18), so it must be connected / connectable to a supply of electricity.

1.5 Not present

There is no information about this. Tension could be maintained by having a spring at one end of the carrier cable and either another spring or a fixed attachment at the next pylon. Therefore, this feature is not implicitly present.

1.6 Present

The second end of the carrier cable is attached to a spring located in a curved track and held in place by retaining tangs; the track is welded to the gantry (page 15, line 38; page 16 lines 1-3 and figure). The gantry thus supports the carrier cable by means of the spring which is held in the track.

A spring is a type of resilient biaser according to the patent (page 4, line 8). The spring is said to provide resilience to environmental changes, such as in hot climates (page 15, lines 40-42), i.e. changes in the length of the cable (page 15, lines 25 – 26), which appears mean that it (together with the weights) will generate tension in the carrier cable.

Feature 1.5 is not present, so claim 1 is novel.

<u>Claim 2</u>

2.1 Not present as above for claim 1

2.2 Not present: there is no information on the structure of the cable.

2.3 Not present: there is no information on the structure of the cable.

Claim 2 is novel both by dependency on claim 1 and because the additional features are not present.

Claim 3

3.1 Not present as above for claim 1

3.2 Present: the resilient biaser is a spring (page 15, line 38 and Figure 1.6).

The additional feature of claim 3 is disclosed; claim 3 is novel by dependency on claim 1.

Claim 4

4.1 Not present as above for claim 3.

4.2 Not present

The spring is located in a curved track and held there by retaining tangs; the track is welded to the gantry (page 15, line 38; page 16 lines 1-3 and figure). As construed above, “secured to … by” does not require the resilient biaser to be directly attached to the gantry, so the curved track does secure the spring to the gantry. However, the curved track does not allow the spring to pivot relative to the gantry, so it is not a flexible connector.

4.3 Not present

There is no information in Doc D about how the spring is secured to the carrier cable.

Claim 4 is novel both by dependency on claim 3 and because the additional features are not present.

D) INVENTIVE STEP

Apply the Pozzoli/Windsurfer approach:

The skilled person for claims 1-4 is a tram/trolley bus engineer interested in in-town electrification.

The common general knowledge is electrification systems for trams and railways, as set out in the background section of the patent (page 3, lines 4 – 32, Figure 1A – 1D). Doc D is an article in an old trade journal and therefore also forms part of the common general knowledge.

Claim 1

The inventive concept is tensioning the cables in a more effective (page 4, lines 8-10) and/or safe (page 5, lines 20-22) manner than by using weights.

Starting from doc A, the state of the art is the system shown in Figs 1A to 1D. The differences are:

- a gantry (instead of a pylon) to support the cables
- a resilient biaser (instead of a weight) to tension the cable, which is secured to the gantry.

The CGK suggests pylons and gantries are interchangeable (doc D page 15, line 16) so this difference would be obvious the skilled person.

Doc D suggests replacing pulleys with a spring that is bent around a curved track (page 15, lines 37 – 38) which attaches the carrier cable to the gantry (page 16, lines 1-3). Although the arrangement in Doc D still has weights (figure on page 16), page 15, lines 40-41 state that the spring itself provides resilience to environmental changes, i.e. it serves the same purpose as the weights in doc A of generating tension in the cable. Therefore this difference would also be obvious.

Since the differences do not require any degree of invention and would have been obvious to the skilled person, claim 1 lacks inventive step over doc A in combination with the CGK from doc D.

Claim 2

The additional feature of claim 2 is disclosed in doc A – see novelty section. Therefore claim 2 lacks inventive step over doc A in view of the CGK for the same reasons as claim 1.

Claim 3

A spring is well-known type of resilient biaser, so the use of a spring is not inventive. Therefore claim 3 lacks inventive step over doc A in view of the CGK.

Claim 4

The inventive concept is to allow relative motion between the resilient biaser and the gantry to accommodate wind loads etc. on the cable.

The further difference in claim 4 is that the spring is secured to the gantries via a flexible connector, whereas in doc A the weights & pulley (which perform the same function) are not connected to the pylons by a flexible connector.

In doc D, the spring is secured to the gantry by the curved track and held there by retaining tangs; the track is welded to the gantry (page 15, line 38; page 16 lines 1-3 and figure). This connection does not allow the spring to pivot relative to the gantry, so it is not a flexible connector.

There is no suggestion in doc D to use a flexible connector, so this would not have been obvious to the skilled person. Therefore claim 4 is inventive.

Claim 5

The skilled person for claim 5 is an electrical engineer interested in in-town electrification.

The CGK is traditional OHE cables, described in the background of doc A (page 3, lines 30 – 32, fig 1C).

The priority document was drafted by the client (page 2, line 12). The priority claim should be checked: if it is valid then the relevant date for assessing the state of the art is the priority date (14/7/15); if not then it is filing date (14/7/16). The reference to doc C in Tram Electrification Monthly in January 2016 (page 2, lines 35 – 37) makes doc C part of the CGK if the priority claim is not valid.

The inventive concept is a cable that is better able to withstand clamping forces in use and which provides better engagement with the contact point on the road vehicle, and hence lower electrical losses and wear on the contact point (page 4, lines 21 – 27).

Starting from doc C (or from the article in Tram Electrification monthly if the priority claim is invalid), the state of the art is the coated thread in the right hand figure on page 14. The differences are:

- a cable rather than a thread;
- the coating is an elastic material.

Doc C mentions (page 14, lines 26-27) that the approach might be applied to thicker gauge materials for heavier duty work, there is no indication of what “thicker gauge” and “heavier duty” could be, in particular no suggestion that doc C could be relevant for cables such as OHE cables. Thus there is no incentive for the skilled person to apply the teaching of doc C to cables, such as OHE cables.

The only teaching about the nature of the coating material is that it should be electrically insulating and not be too resistant to bending (page 14, lines 12 -13). There is no suggestion of an elastic material.

Therefore the differences would not have been obvious to the skilled person, so claim 5 is inventive.

Doc C mentions (page 14, lines 26-27) that the approach might be applied to thicker gauge materials for heavier duty work. Claim 5 relates to any cable for carrying electricity and is not limited to OHE cables. Therefore applying the teaching of doc C to cables would be obvious for the skilled person.

Doc C teaches that the coating material should be electrically insulating and not be too resistant to bending (page 14, lines 12 -13). Elastic materials have these properties. Therefore it would be obvious for the skilled person to use an elastic material.

Consequently, the differences would have been obvious to the skilled person, so claim 5 is not inventive.

E) SUFFICIENCY

The client states it has only been possible to produce a constant force coil spring with the necessary strength for an electrification system in the past few months (page 2, lines 16 to 20). This raises the question of whether claim 1 was enabled across its entire scope at the filing date (two years previously). Need to discuss with client why suitable constant force coil springs have only recently become available, in particular whether it was a matter routine work.

The patent does not have to enable each and every embodiment of a claimed invention. There is no suggestion that there was any problem with other types of spring, such as helical springs, so the granted claims are sufficient. (However, if a claim directed to a constant force coil spring were introduced by amendment, this might be insufficient.)

F) AMENDMENT

The minor errors noted above in claim 4 and on page 4 should be corrected:

- 4.2: “secured to the gantries” should be “secured to the second gantry”
- 4.3: “secured to a first end of the carrier cable” should be “secured to the second end of the carrier cable”
- Page 4, line 19: “relative motion between the biaser and the cable” should be “relative motion between the biaser and the gantry”

Claim 1 lacks inventive step, and therefore should be amended to make it inventive, whilst still covering Me2’s system. A possible amendment is to introduce the features of claim 4, if it is confirmed that claim 4 is infringed.

An alternative amendment would be to specify that the resilient biaser is housed in a housing, based on page 4, line 15 and page 5, line 32. This would cover the Me2 system, since the spring is housed in a plastic housing (figure on page 13). It would likely be inventive because there is no suggestion in the CGK or doc D of the spring being inside the housing.

While I consider that the claims are sufficient, claim 1 could be amended to pre-empt a possible insufficiency objection by specifying that the resilient biaser is a helical spring, based on page 4, lines 11-12. This would still cover the Me2 system which has a helical spring (figure on page 13).

As noted above, claim 5 is likely novel over traditional OHE cables described in doc A, but this is subject to checking whether the coating for traditional OHE cables is an elastic material. If so, claim 5 could be amended to specify that the core is rectangular (based on page 6, line 9 and figure 4C) or that the contact point is a flat surface (based on page 5, line 47). These amendments provide novelty over traditional OHE cables, which are generally circular (Figure 1C). While these shapes are disclosed in doc C, the amended claim would be inventive because there is no suggestion in doc C of the benefits that they provide in OHE systems (page 6, lines 1 – 11). These amendments would still cover the Me2 system which has a square cable (page 11, line 36).

OR

As noted above, claim 5 is likely novel over traditional OHE cables described in doc A, but this is subject to checking whether the coating for traditional OHE cables is an elastic material. Claim 5 is likely to lack inventive step. Claim 5 could be amended to specify that the cable is an OHE cable (by deleting

"particularly") and that contact point is a flat surface (based on page 5, line 47). This amendment provides novelty over traditional OHE cables, which are generally circular (Figure 1C). While this shape is disclosed in doc C, the amended claim would be inventive because there is no suggestion in doc C of the benefits that they provide in OHE systems (page 6, lines 1 – 11). These amendments would still cover the Me2 system which has a square cable (page 11, line 36).

G) ADVICE

Claims 1 to 3 are infringed. Claims 4 and 5 may well be infringed; further information is required to confirm.

Claims 1 to 5 are novel. Claims 1 to 3 are invalid for lack of inventive step, but claims 4 and 5 are inventive. Claim 1 can be amended (see above) to restore validity whilst still being infringed.

OR

Claims 1 to 5 are novel. Claims 1 to 3 and 5 are invalid for lack of inventive step, but claim 4 is inventive. Claims 1 and 5 can be amended (see above) to restore validity whilst still being infringed.

It is important for the client to prevent Me2 from selling their system to Mains Town so immediate action is required. It is especially important to stop Me2 from offering their system for other upcoming contracts, many of which will be significantly larger (page 2, lines 38-40).

The patent is in force (renewal fees are not yet due since it was filed less than 4 years ago) so the client can enforce it against Me2. As noted above, the patent should be amended so that it is valid.

In view of the urgency, the client should sue Me2 seeking an interim injunction to prevent them from installing their system in Mains Town, with an application to amend the patent under s75. (Amendment under s27 is not appropriate since Me2 would be able to oppose the amendment and delay infringement proceedings).

Whether the court will grant an interim injunction depends on the balance of convenience, in particular whether damages would be an adequate remedy or not. A single installation of Me2's system in Mains Town would likely be adequately compensated by damages. However, the ability of Me2 to tender for upcoming contracts could result in substantial lost sales for the client, for which damages might not be an adequate remedy.

Following a successful infringement action, the client would be able to obtain a final injunction which would prevent Me2 from offering their system thereafter. The client would also be able to obtain damages or an account of profits for previous sales, including Me2's sale to Mains Town if this cannot be prevented by an interim injunction.

Whilst it would be possible to offer a license to Me2, this would not achieve the client's objectives of preventing Me2 from offering their system to Mains Town and in upcoming contracts.

Me2 intend to start a claim for threats (s70) resulting from the client's letters to Me2 and Mains Town (page 2, lines 30-34). The client's letter to Me2 is not actionable since they are manufacturers of the system, and likely also manufacturers or importers of the cable (this should be checked).

Mains Town is not a manufacturer or importer, so the client's letter to Mains Town could be an actionable threat. Me2 would be an aggrieved person if they suffer a loss as a result of the client's letter to Mains Town, in particular if Mains Town withdraw the award of the contract. Thus the threat is actionable by Me2. However, since claims 4 and 5 are valid and likely infringed, the threat is likely to be justified in which case the client would not be liable.

We should check whether Cables n Threads have any patents that could cover the cable of claim 5.