| Patents Act 1977 | | Opinion Number | 06/22 |

OPINION UNDER SECTION 74A

Patent	GB2593987B
Proprietor(s)	S A EXEL INDUSTRIES
Exclusive Licensee	
Requester	MEISSNER BOLTE
Observer(s)	
Date Opinion issued	28 April 2022

The request

1.   The comptroller has been requested by Meissner Bolte (UK) Limited to issue an opinion as to whether GB2593987 (the patent) is invalid on the grounds of lack of novelty and inventive step. The request was filed on 11th February 2022 and was accompanied by a statement making the request. The statement refers to a number of non-patent literature documents NPL1-NPL5, and patent documents US20080058995A (PL4), WO2005002321 (PL5), WO2004080161A (D1), US6337635 B1 (D7), WO2016162085 (D9), US5921280A (D10) and US20130035774A (D11). Documents NPL1-NPL5 all relate to a sprinkler system called "OpenSprinkler".

2.   More specifically, the requester asserts that the OpenSprinkler system as described by NPL1-NPL5 shows that claims 1, 5 and 9 are not new. They also assert that claims 2, 3, 4, 5, 6, 7 and 8 are not inventive in light of various combinations of common general knowledge or the disclosure in PL4, PL5, D1, D7or D11 with the OpenSprinkler system.

3.   They further assert that claims 1, 3 and 4 lack novelty in light of PL4 as a stand-alone document.

4.   They also assert that claims 1 and 2 lack novelty in light of D9 as a stand-alone document.

Observations and observations received in reply

5.   No observations were received.

Relevant documents

6.   The requestor has asked me to consider patent document WO2016/162085

(D9) which was listed in the search report for the application for the patent as category A - technological background and/or state of the art. I have considered section 73A(3)(b), in particular whether it is appropriate to use prior art which may have been considered pre-grant. However, since D9 was only cited as an A document and not raised as part of a substantive objection I am inclined to allow it. Opinion 21/07 considered 4 documents cited as category A documents in the search report when assessing validity. As such, I will consider D9 in this opinion.

The evidence

7.   A digital archive of the World Wide Web, "Wayback machine" has been used to demonstrate that the documents NPL1-NPL5 predate the application. The Manual of Patent Practice used by the UKIPO sets out, in section 18.09.3, that evidence from Wayback Machine may provide justification that there is little doubt about the publication date of the disclosure. I am happy to accept the evidence submitted in the form of NPL1-NPL5 and the disclosure dates accorded to them by the requester.

8.   The requester argues that NPL1-NPL5 do not represent different prior art but are merely different online sources pointing to the same prior art. I agree that they all refer to the same OpenSprinkler system and are intended to be read together to establish all the necessary information about the device. Thus, when I refer to NPL1-NPL5 I intend them to be read as a single disclosure.

The Patent

9.   The patent is entitled "Garden Watering Controllers". It relates to a control system for controlling the supply of water into a garden watering arrangement, such as a garden sprinkler. Referring to figure 1 of the patent below, a controller 1 receives wireless data signals and operates a valve in dependence on the received data signals. The unit can store programming data and operate the valve in dependence on a stored watering schedule.
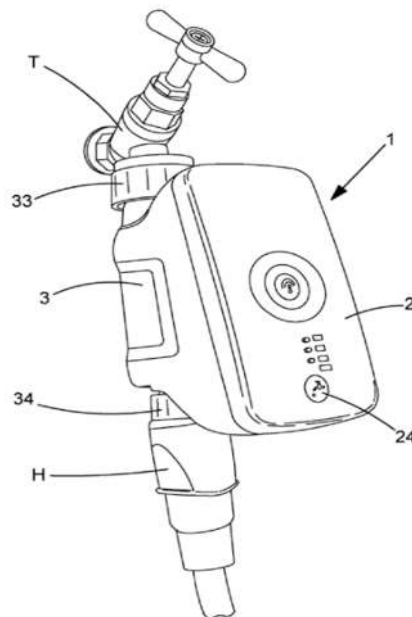

Figure 1

10.   Figure 3 of the patent below shows that a stored schedule 301 can be held in the controller memory. A "water override" 302 may be triggered manually by pressing button 24 on the unit. Alternatively, a wireless water override signal 303 may be sent via the app. When the water override ends the controller reverts to the stored schedule.
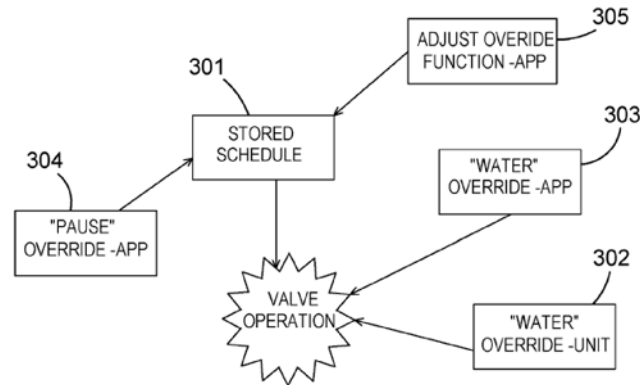

FIG.3

Opensprinkler

11.   Documents NPL1-NPL5 refer to a garden watering controller system known as "OpenSprinkler". This is an opensource, web-based sprinkler controller as shown below. It includes a controller that can replace a conventional sprinkler controller that does not have web connectivity. It has remote access and provides smart weather-based sprinkler control. It can be wirelessly connected to a router to receive control signals and watering programs. A client device such as a computer or mobile device is used to access a controller interface.

Hardware Interface

12.   Documents NPL1-NPL5 are detailed below:

NPL1 is a user manual for the web interface for OpenSprinkler archived 30/03/2014
NPL2 is a video showing someone using a mobile app to program and control the OpenSprinkler system archived 14/12/2013
NPL3 is a user manual for the controller firmware v. 2.1.0 archived 21/03/2015
NPL4 is a history of software updates for the mobile app used with OpenSprinkler archived 28/04/2015
NPL5 is a blog post on a website which posts informal updates about new features of OpenSprinkler archived 15/03/2015

13.   It is clear to me that these documents relate to a single system, and that the OpenSprinkler system itself is the prior art being relied upon. All of the documents pre-date the filing date of the application. I agree that the OpenSprinkler system was capable of being operated as described by the documents above prior to the filing of the patent application, provided it was running the latest firmware 2.1.0.

14.   In paragraph of 5.0 of the request, the requester makes further observations regarding the product "OpenSprinkler DIY Kit v2.1u". This kit comprises the garden watering controller which can be controlled via the OpenSprinkler mobile app (NPL5, page 13, bottom left picture). There is also evidence of the blogger himself holding the product inside a store (NPL5, page 13, bottom right picture). Page 10 of this blog states that this controller is eligible to upgrade to the firmware v2.1.0 which is detailed in NPL3. This satisfies me that the OpenSprinkler system with all of the features set out in the various documents provided was available to the public before the priority date.

US20080058995 (PL4)

15.   The requester also refers to the disclosure in PL4 – which is published US patent application US20080058995 A1. This application is directed to a solar-powered irrigation control device. It can be connected to one or more irrigation devices in an irrigation system, and it can receive operational signals wirelessly from a handset. The invention is concerned with the efficient use of energy so that a small photovoltaic power module can be used as the only power source. One way that the power is conserved is by having inactive periods to reduce transceiver power requirements. Figure 1 of PL4 is reproduced below.
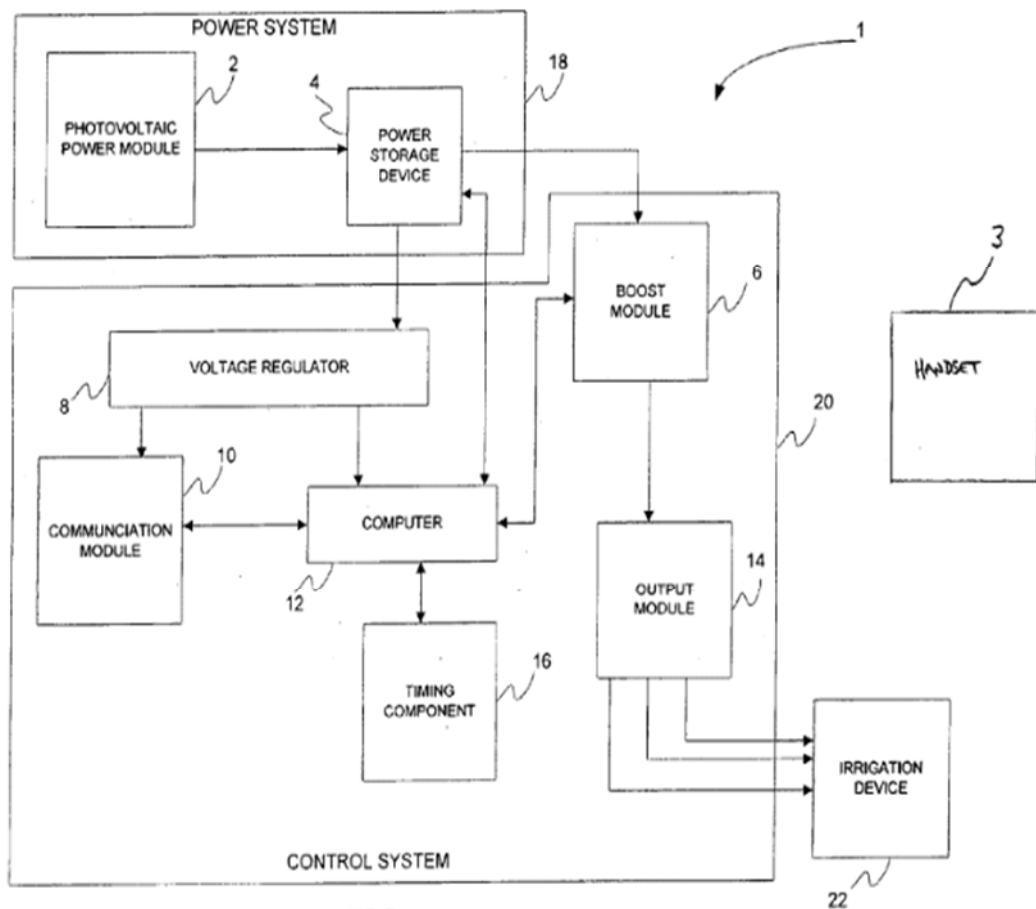
WO2016/162085 (D9)

16. D9 describes an intelligent watering system comprising a gateway interfacing between watering equipment and sensor equipment. An operator can wirelessly communicate with the gateway via an app on a user terminal such as a smartphone. Programming may be coordinated remotely and stored locally. Figure 5 of D9 is reproduced below. It shows housing body 200 for the watering computer in which the valve is also housed. A button 250 is located on the housing and may be manually pressed to shift the valve assembly from the open to the closed position, or vice versa.
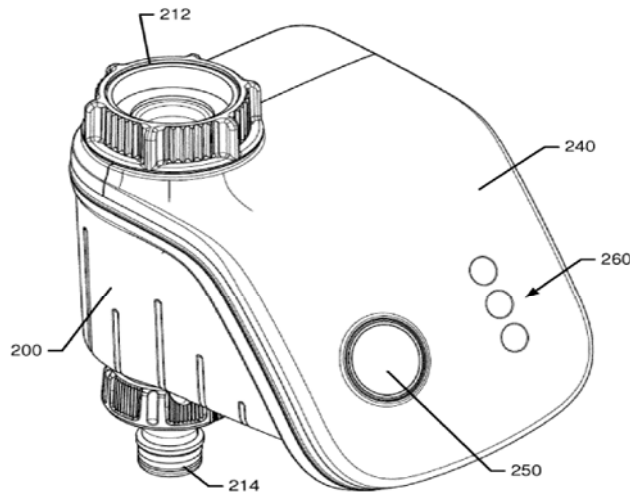
FIG. 5.

Claim construction

17.   Before I can determine an opinion as to the validity of the patent, I must first construe the claims. This means interpreting the claims in the light of the description and drawings as instructed by section 125(1) of the Patents Act. In doing so I must interpret the claims in context through the eyes of the person skilled in the art. Ultimately the question is what the person skilled in the art would have understood the patentee to be using the language of the claims to mean. This approach has been confirmed in the decisions of the High Court in *Mylan v Yeda*[1] and the Court of Appeal in *Actavis v ICOS*[2]:

125.-(1) For the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.

18.   The requester does not set out who they consider the person skilled in the art to be. In my opinion they will be a designer or user of remote-controlled irrigation systems

19.   Claim 1 of the patent reads:

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[1] *Generics UK Ltd (t/a Mylan) v Yeda Research and Dev. Co. Ltd & Anor* [2017] EWHC 2629 (Pat)

[2] *Actavis Group & Ors v ICOS Corp & Eli Lilly & Co.* [2017] EWCA Civ 1671

*A garden watering controller for operating a valve for controlling supply
of water into a garden watering arrangement, the controller comprising
wireless receiver means for wirelessly receiving programming data signals,
and a central unit for outputting control signals for operating the valve in
dependence on the received programming data signals,
wherein
the central unit is arranged to store a watering schedule received via
the programming data signals and arranged to operate the valve in
dependence on the stored watering schedule; and
the controller comprises a manual override control that is arranged to
operate the valve to allow immediate watering for a user selected period
before the controller reverts to a state for operating the valve in dependence
on the initially stored watering schedule.*

20.   The requester has not put forward any arguments regarding the construction
of the claims, and there have been no observations filed. The requester has helpfully
broken claim 1 down into its constituent features and labelled them as follows:

A garden watering controller (1) for operating a valve (31) for controlling
supply
of water into a garden watering arrangement (M0101),

the controller comprising wireless receiver means (22) for wirelessly receiving
programming data signals, and (M0102)

a central unit (21) for outputting control signals for operating the valve in
dependence on the received programming data signals, wherein (M0103)

the central unit (21) is arranged to store a watering schedule received via the
programming data signals and (M0104)

arranged to operate the valve (31) in dependence on the stored watering
schedule (M0105).

In addition to the above features of independent claim 1 the controller
comprises (M0106):

a manual override control that is arranged to operate the valve to allow
immediate watering for a user selected period before the controller reverts to
a state for operating the valve in dependence on the initially stored watering
schedule (M0107).

21.   Features M0101-M0106 are considered to be clear and I do not believe the
skilled person would have any trouble construing their scope.

22.   Feature M0107 relates to a "manual override control". The description of the
invention (page 11, paragraph 5) clearly describes how a user interacts directly with
the controller unit in order to operate the manual override control 24. It specifically
discloses a "user operable button" on the controller unit which may be manually
pressed to cause immediate watering. This is different from the water immediately

override *signal* which may be operated by sending a wireless signal to the controller unit via the app. Figure 3 of the patent represented above shows how each of these operations 302, 303 are considered to be separate. Page 6, paragraph 1 discusses an override signal received from the client device and page 12, paragraph 6 describes a *"water immediately override signal"* received from the client device. In my opinion the skilled person would understand there to be two options for operating the override to cause immediate watering; a manual override control which involves interacting directly with the controller unit, and a wireless override control which sends a water immediately override signal from a client device.

23.   Additionally, feature M0107 requires that the controller "reverts to a state for operating the valve in dependence on the initially stored watering schedule". There is little disclosure of how this happens in the description of the invention. It is clear that any manual or wirelessly operated override operates for a defined period (page 3, paragraph 8) until the override is cancelled or the override is over (page 14, paragraph 6). In the absence of any disclosure to the contrary, it is my opinion that a skilled person reading the description of the patent would understand that this reverting to the initial schedule takes place *automatically* at the end of the override period without any specific action being taken by the user.

Novelty

24.   Section 1(1) of the Act reads:

> *A patent may be granted only for an invention in respect of the following conditions are satisfied, that is to say –*
> *(a) the invention is new;*
> *(b) it involves an inventive step…*

Claim 1

25.   The requester argues that NPL1-NPL5 disclose a controller and at least one valve (sprinkler station) meeting M0101, and they describe how the controller can be connected wirelessly to a client device via a home router, thus disclosing M0102.

26.   The interface described in NPL1 allows a user to set program schedules (NPL1, page 6) and the controller outputs signals to the sprinkler valves to operate them in dependence on the set schedule, thus disclosing M0103 and M0105. NPL1 page 5-page 6 explains how the programs are stored in the controller memory as required M0104. In addition, the controller is arranged to receive override control signals such as the "Run-Once" program described on page 8 of NPL1.I agree with the requester that M0101-M0106 are disclosed in NPL1-NPL5.

27.   The discussion of the "Run-Once" program on page 8 of NPL1 describes how *"the normal program schedules will be temporarily interrupted until the Run-Once program finishes, at which point the controller will return back to the normal program mode"*. That is, the sprinklers will be wirelessly instructed to override the programmed schedule and cause immediate watering of the garden for the specified duration of time. It is further clarified on page 9 of NPL1 that if you want to run an ad-hoc program and would like the controller to automatically return back to program

mode, the Run-Once feature should be used.

28.   The requester also points to the disclosure in NPL3. This shows that various sprinkler valves are wirelessly controlled from a client device such as a computer or mobile device. Each station can be programmed and edited using the client device (see page 9 – "Programs"). The controller then outputs signals at the appropriate time to open or close the chosen sprinkler valve(s) (NPL3, page 10). I agree that M0101-M0106 are disclosed in NPL3.

29.   The "Run-Once" program is outlined in part 6 of the user manual, on page 8 of NPL3. As outlined above when discussing NPL1, this override allows programmed schedules to be terminated while a one-off watering takes place. This function allows a user to manually edit the duration of the run-once watering for each station. NPL3 specifically says that any existing program already running will be "terminated immediately" while the Run-Once function is used (page 8, line 7). Claim 1 requires that the controller "reverts to a state for operating the valve in dependence on the initially stored watering schedule". Although NPL3 clearly sets out that any existing programs which are running will be terminated, it is not clear from this document that the original watering schedule will be reinstated when the Run-Once program is finished. However, this feature is clearly referenced in NPL1, page 8 so I am satisfied that it is a feature of the OpenSprinker system.

30.   The requester then goes on to argue that the wireless override feature present in OpenSprinkler is equivalent to the manual override control M0107 of claim 1. The Run-Once program is initiated by clicking on the appropriate part of a screen of the device being used to operate the controller via a web browser. As set out above where I construe the claims, it is my opinion that a skilled person would understand the "manual override control" to involve direct interaction with the controller unit by the user. This is distinct from the alternative wireless override control. In my opinion NPL1 and NPL3 show *wireless* override control as the instruction is issued via a web-browser and client device, but it does not show *manual* override control as required by feature M0107 of claim 1. As such I do not consider Opensprinkler to show a lack of novelty in claim 1.

31.   The requester also asserts that claim 1 lacks novelty with regards to the disclosure in PL4. PL4 relates to a solar power irrigation control system, which may comprise one or more solenoid-controlled irrigation valves (paragraph 0040). The irrigation controller is described in paragraph 0035 as including *"a microprocessor configured to control internal program operations, and a radio transceiver to receive programming instructions and provide data to a corresponding communication device (e.g. a wireless handset) operated by a user"*. Thus features M0101, M0102 are disclosed. Figure 15, step 310 sets out how the controller may open or close the irrigation valve in dependence on a received programming signal, so feature M0103 is also disclosed. Paragraph 0036 describes how the controller may operate the valves in accordance with a programmed irrigation schedule, so features M0104 and M0105 are disclosed.

32.   Override control signals may be wirelessly received by the controller (paragraph 0036) to start immediate watering or to water at a time which was not previously scheduled. The requester points to paragraph 0079 where reference is

made to a "Manual Run counter (temporarily run for XX minutes)" to demonstrate that the override causes immediate watering for a user selected period which is monitored by the counter described in paragraph 0079. Figure 15 of PL4 below sets out the process that is run by the controller when checking the counters for actions that may need to be taken or stopped in accordance with the programmed schedule or override. Paragraph 0079 sets out that if there are no actions to be taken the controller returns to process A, set out in figure 12 of PL4 below.
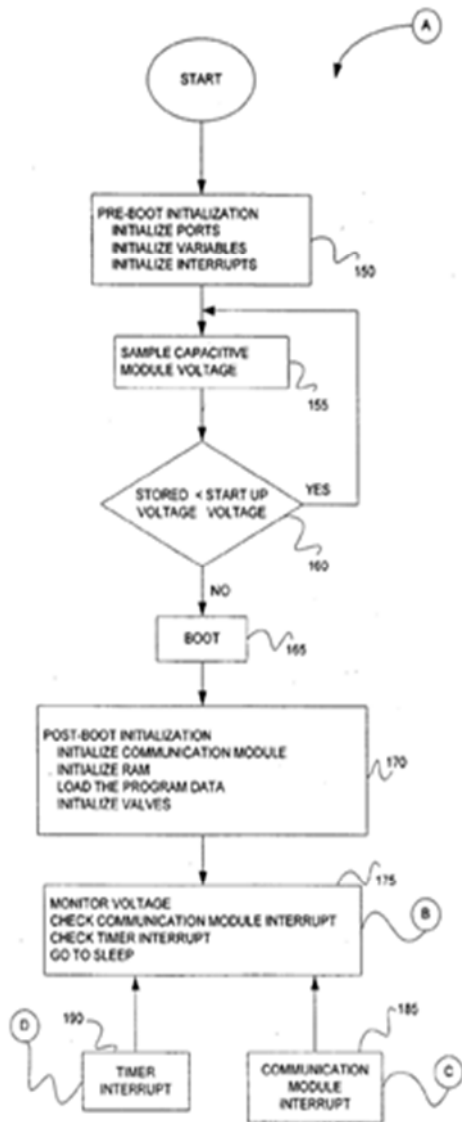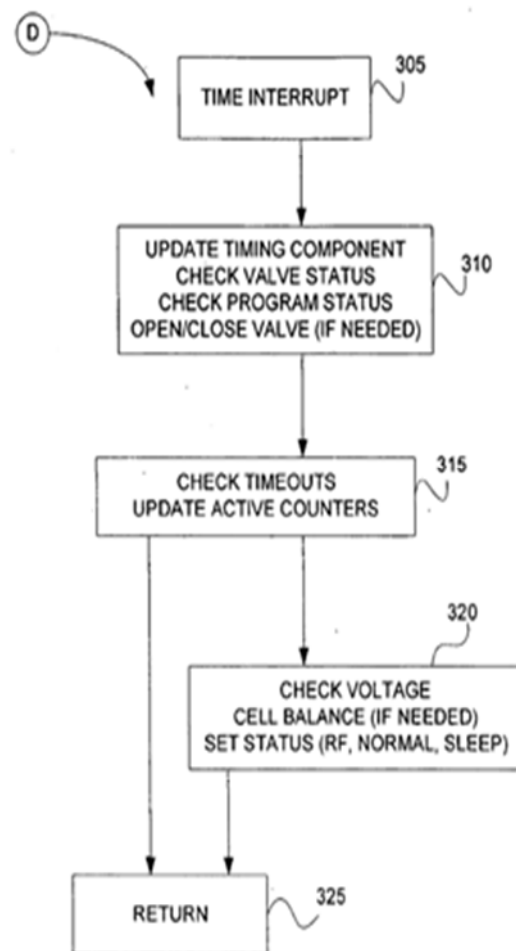

FIG. 12   FIG. 15

33.   The requester suggests that the step of returning to program A where the controller is checking for a timer interrupt signifies that the valve returns to the initially stored program schedule. In particular they point me to box 170, where the instruction is given to "load the program data". I agree that figure 12 shows that the program data has been loaded by the communication module and is stored in the controller. The timer interrupt process 190 of figure 15 will be intermittently carried out after the program data has been stored by the controller and will include

checking program status and carrying out actions (open/closing valves) as necessary (paragraph 0078). If one of those actions relates to the override manual run function then the counter will activate and the action will continue until it rides down to zero. This checking of the program for actions occurs every time a timer interrupt occurs and there is no indication that running the override stops that happening. As such I am of the opinion that PL4 does describe returning to the state for operating the valve in accordance with the initially stored watering program.

34.   The controller of PL4 can be controlled wirelessly via a handset 3 which communicates with a communications module 10 (paragraph 0052). The communications module is part of the controller 1. The requester points out that paragraph 0053 describes embodiments where the communications module 10 may have "one or more controls configured to accept operational signals from an operator or user, for example, a mouse, buttons, keys", so some form of direct manual interaction with the controller is envisaged. However, it is not clearly disclosed what functions may be carried out directly at the controller unit by pressing these buttons or keys, so it is not clearly disclosed that a user may operate one of these buttons or keys directly at the controller to override the stored schedule and cause immediate watering as required by feature M0107 of claim 1. The requester refers to paragraph 0036, which clearly sets out that an override function is present in the invention. However, this paragraph states *"the irrigation controller is configured to receive a signal indicating to actuate irrigation device 22 immediately"* – the signal being a wireless signal from handset 3. The requester also refers to paragraph 0087 which describes a microcontroller 426 which can *"track time and date information and display screens for all features (programs, manual run, tests, status, etc.)"*. However, this microcontroller is a feature of the handset 3. A skilled person would interpret these paragraphs as evidence that the manual run override is controlled by wireless signals transmitted and received via the handset. Although the override operation in PL4 is referred to as a *manual* run, in my opinion the skilled person would understand this to mean a button on the handset 3 is manually pressed to start immediate watering. I have construed feature M0107 to mean that the user interacts directly with the controller to cause this specific operation, as opposed to interacting via a wireless signal, so I do not consider this document to clearly disclose feature M0107 of claim 1. Document PL4 does not show a lack of novelty in claim 1.

35.   The requester argues that claim 1 lacks novelty in light of the disclosure in D9. They assert that D9 shows a garden watering controller for controlling supply of water to a watering arrangement, as required by M101. The controller may receive wireless programming signals as required by M102 and may output control signals from the communication circuitry (C/C) 160, based on the received programming data signals, to operate the valve as required by M103. A watering schedule may be stored in the central unit as required by M104 and the device may operate the valves based on the stored schedule as required by M105 (see paragraph 0032 of D9). The requester goes on to point out the manual override arranged on valve unit and described in paragraph 0052 of D9. Pressing this causes a manual shift in the valve, i.e. from open to closed or from closed to open. They assert that this overrides the watering schedule for a predetermined amount of time, and once the predetermined amount of time has passed the controller reverts to operating the valve in dependence on the initially stored watering schedule, thus disclosing M106 and M107.

36.   I agree with the requester that features M101-M106 are present in D9. I also agree that a manual button is present on the valve unit (see button 250 in figure 5 of D9) and that paragraph 0052 clearly discloses pressing this button to open or close the valve assembly. Opening the valve assembly in this way would cause immediate watering. The valve is described as remaining open for the duration defined by the operator the last time they used the app, and I agree with the requester that this constitutes a "user selected period", even if it was selected at some previous point in time. However, there is no disclosure in D9 that once this period is over the controller automatically reverts back to a state for operating the valve in dependence on the initially stored watering schedule as required by claim 1. As such I do not consider claim 1 to lack novelty in light of D9.

37.   Since I consider claim 1 to be novel in light of NPL1-NPL5, PL4 and D9, I also consider the dependent claims to be novel.

Inventive step

38.   I have not been asked to consider whether the submitted documents show that claim 1 lacks an inventive step.

39.   Since I have not been asked to consider the inventive step of claim 1 I cannot give my opinion on this matter. Furthermore, as I consider claim 1 to be valid based on the argument put forward by the requester, the dependent claims must also be valid based on this argument and their dependence on claim 1. It is not necessary for me to consider whether the features of the dependent claims are obvious or not and I cannot go on to assess the inventiveness of the dependent claims as requested.

Opinion

40.   In my opinion, based on the arguments presented by the requester, claim 1 is novel in light of NPL1-5, PL4 and D9.

Emma Tonner
Examiner

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NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.