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Datasheet for the decision of 11 June 2024

Case Number: T 1960/20 - 3.5.01

Application Number: 16748041.7

Publication Number: 3326124

IPC: G06Q10/08, G06Q50/28, G06Q10/06

Language of the proceedings: EN

Title of invention:
OPERATOR IDENTIFICATION AND PERFORMANCE TRACKING

Applicant:
Locus Robotics Corp.

Headword:
Robot tracking human efficiency/LOCUS ROBOTICS

Relevant legal provisions:
EPC Art. 56, 84
EPC R. 137(3)
RPBA 2020 Art. 12(6), 13(2)

Keyword:
Inventive step - tracking how quickly a warehouse employee enters and exits the proximity of a warehouse robot waiting for them (no - not technical) - detecting the employee's presence in the proximity using RFID technology (no - obvious)

Decisions cited:
T 0641/00, T 1670/07

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Case Number: T 1960/20 - 3.5.01

D E C I S I O N
of Technical Board of Appeal 3.5.01
of 11 June 2024

Appellant: (Applicant)	Locus Robotics Corp. 301 Ballardvale Street Wilmington, MA 01887 (US)
Representative:	Isarpatent Patent- und Rechtsanwälte Barth Charles Hassa Peckmann & Partner mbB Friedrichstrasse 31 80801 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 14 July 2020 refusing European patent application No. 16748041.7 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	W. Chandler
Members:	W. Zubrzycki
	E. Mille

Summary of Facts and Submissions

I. This is an appeal against the decision of the examining division to refuse European patent application No. 16748041.7 for lack of inventive step (Article 56 EPC).

II. The examining division held that the main request and auxiliary request 1 did not involve an inventive step over D1 (WO2008/074008 A2), especially considering the disclosures of one of D2 (US2014/277691 A1), D3 (US2013/0317642 A1), D4 (WO2008/013846 A2), D5 (WO2006/076283 A1) and D6 (US2014/254896 A1). They did not admit the auxiliary requests 2, 3 and 4 into the proceedings under rule 137(3) EPC.

III. In the Notice of Appeal, the appellant requested that the examining division's decision be set aside and either the case be remitted to the examining division, or a patent be granted on the basis of the "Main Request and/or Auxiliary Request(s) if any", namely the above-mentioned refused requests. Furthermore, the appellant requested refund of the appeal fee.

IV. With the statement setting out the grounds of appeal, the appellant filed new auxiliary requests 1a and 2a, and provided arguments in favour of inventive step.

V. In the communication accompanying the summons to oral proceedings, the Board set out its preliminary opinion that the main request and auxiliary requests 1, 1a, and 2a lacked inventive step over D3 in combination with D1. Additionally, the auxiliary request 2a lacked clarity (Article 84 EPC). Furthermore, the Board informed the appellant that it was inclined not to admit the auxiliary requests 2, 3 and 4 into the

proceedings and to refuse the request for refund of the appeal fee.

VI. With a reply, the appellant filed a new auxiliary request 1b and provided arguments in favour of inventive step.

VII. The oral proceedings per videoconference took place on 11 June 2024. The appellant's final requests were that the decision under appeal be set aside and a patent be granted on the basis of the main request or alternatively of any of the auxiliary requests 1, 1a, 1b, 2, 2a, 3 or 4 and that the appeal fee be refunded.

VIII. Claim 1 of the main request reads:

"*A system for identifying and tracking performance of operators in a warehouse, the system comprising:*
At least one robot configured to interact with the operators in the warehouse, the at least one robot including:
a first transceiver,
a proximity detector, and
a memory,
a tablet,
wherein said first transceiver defines a zone surrounding said robot,
wherein said proximity detector is coupled to said first transceiver,
wherein said proximity detector is configured to detect entry, into said zone, of an operator and to detect exit of said operator from said zone, and
wherein said memory contains information identifying said operators who have entered and exited said zone,
wherein said tablet provides operator identification information to a management server,

wherein said operator identification information is used by said management server to set operator preferences for interaction with said tablet; wherein said operator preferences include language."

IX. Claim 1 of auxiliary request 1 reads:

"A system for identifying and tracking performance of operators in a warehouse, the system comprising:
at least one robot configured to interact with the operators in the warehouse, the at least one robot including
a first transceiver,
a proximity detector,
a memory, and
a tablet which comprises a tablet processor and a network interface; and
a second transceiver associated with each of said operators, wherein the second transceiver carries information identifying said operator, and wherein said second transceivers are with the operators;
wherein said first transceiver defines a zone surrounding said robot,
wherein said proximity detector is coupled to said first transceiver,
wherein said proximity detector is configured to read the second transceiver for detecting entry, into said zone, of an operator and to detect exit of said operator from said zone, and
wherein said memory contains information identifying said operators who have entered and exited said zone,
wherein said tablet is configured to provide operator identification information and information indicative of local operator activity to a management server using the network interface,
wherein said information indicative of local operator

activity includes information regarding one or more of the amount of time for an operator to enter the zone after the robot arrives at a destination proximate the user, the amount of time the operator takes to exit the zone after the operator enters the zone, the amount of time the operator takes to perform a defined function, wherein said management server is configured to track local-operator efficiency based at least in part on said information indicative of local operator activity, and to set operator preferences for interaction with said tablet using said operator identification information, wherein said operator preferences include language."

X. Claim 1 of auxiliary request 1a differs from claim 1 of auxiliary request 1 by the deletion of "*the amount of time the operator takes to perform a defined function*" in the penultimate feature.

XI. Claim 1 of auxiliary request 1b reads:

"*A system for identifying and tracking performance of a plurality of operators in a warehouse, the system comprising:*
a plurality of robots configured to interact with the plurality of operators in the warehouse, each of the plurality of robots including a first transceiver, a proximity detector, a memory, and a tablet which comprises a tablet processor and a network interface; and
a plurality of second transceivers one associated with each of said plurality of operators, wherein each of the second transceivers carries information identifying an applicable operator of the plurality of operators, and wherein each of said second transceivers is with the applicable operator; and

a management server configured to interact with each of the plurality of robots via the network interface of each of the plurality of robots;
wherein for each of said plurality of robots:
said first transceiver defines a zone surrounding said robot,
said proximity detector is coupled to said first transceiver,
said proximity detector is configured to read the second transceiver associated with each of the plurality of operators for detecting entry, into said zone, and to detect exit from said zone of each of the plurality of operators,
said memory contains information identifying each of the plurality of operators who have entered and exited said zone and information indicative of operator activity,
said tablet is configured to provide operator identification information and the information indicative of operator activity to the management server using the network interface for each of the plurality of operators who have entered and exited said zone,
wherein said information indicative of operator activity includes information regarding one or more of the amount of time for an operator to enter the zone after the robot arrives at a destination proximate the operator, the amount of time the operator takes to exit the zone after the operator enters the zone,
wherein said management server is configured to track operator efficiency for each of the plurality of operators based at least in part on said information indicative of operator activity received from one or more of the plurality of robots, and to provide operator preferences to each of the plurality of robots for interaction via said tablet with each of the

plurality of operators using said operator identification information, wherein said operator preferences include language."

XII. Claim 1 of auxiliary request 2 differs from claim 1 of auxiliary request 1a by:

- the addition of "*and to proceed to a fiducial marker placed on a shelf in the warehouse*" after *"warehouse"* in the first feature
- the addition of the feature "*a tote for receiving items from the operator,*" after "*at least one robot including*"
- the deletion of "*a proximity detector,*" after "*a first transceiver*"
- the replacement of *"a tablet which comprises a tablet processor and a network interface"* with *"a tablet which comprises a proximity detector, a tablet processor, a tablet-memory, a tablet clock or a tablet timer, and a network interface"*
- the addition of "*wherein said tablet processor is configured to interrogate the tablet-clock to determine the time at which the robot parked proximate fiducial marker, and to create a record in the tablet-memory recording its arrival, or, instead of interrogating the tablet-clock, to cause the tablet-timer to start counting time, wherein said tablet processor is further configured to update the record to record the time at which the operator entered the zone and to updates the record to reflect the time of departure,*" before the feature defining the memory's content
- the addition of "*the amount of time the operator takes to pick an item from the shelf and place it on the robot or to pick an item from the robot and placing it on the shelf*" at the end of the penultimate feature.

XIII. Claim 1 of auxiliary request 2a differs from claim 1 of auxiliary request 2 by the following amendments to the features stating robot components:

- the addition of "*an autonomous wheeled base*" after "including"
- the addition of the qualification "*being held by a tote holder interchangeably engaged with a coupling provided on an upper surface of the base*" at the end of the tote feature
- the addition of *"a laser-radar, a camera, a processor receiving data from the laser radar and the camera to capture information representative of the robot's environment*" after "*a first transceiver*"
- qualifying the memory feature with "*cooperating with the processor and storing navigation software, wherein the processor is configured to carry out the navigation software which relies on data concerning the environment, as collected by the laser-radar, an internal table in the memory that identifies a fiducial identification of the fiducial marker that corresponds to a location in the warehouse where a particular item can be found, and the camera to navigate*"
- replacement of "a *tablet which comprises*" with "*a tablet supported by a tablet holder interchangeably coupled to the coupling of the upper surface of the base, the tablet comprising*".

XIV. Claim 1 of auxiliary request 3 reads:

"*A system for identifying and tracking performance of operators (50) in a warehouse (10), the system comprising:*
at least one robot (18) configured to interact with the operators (50) in the warehouse (10), the at least one robot (18) including:

a first transceiver (24),
a proximity detector,
a memory (34), and
a processor (32),
wherein the processor (32) is configured to execute instructions stored in the memory (34) to:
cause the robot (18) to proceed to a location (12) to execute a function on an item proximate said location (12) with the assistance of a local operator (50);
at said location (12), define a zone around said robot (18) using the first transceiver (24);
using the proximity detector, detect entry of the local operator (50) into said zone and,
without physical contact with said local operator (50), obtaining local operator identification information,
wherein said local operator identification information is used to set operator (50) preferences for interaction by the robot (18) with said operator (50),
wherein said operator preferences include language;
determine when the function on the item has been executed with the assistance of the local operator (50);
detect, using the proximity detector, exit of the local operator (50) from said zone after assisting the robot (18) execute the function on the item; and
supply, by the first transceiver (24), the local operator identification information and information indicative of the local operator (50) activity to a management server,
said information indicative of the local operator activity including information regarding one or more of the amount of time for the local operator (50) to enter the zone after the robot (18) arrives at said location (12), the amount of time the local operator (50) takes to exit the zone after the operator (50) enters the zone, and the amount of time the local operator (50)

takes to assist in the performance the function."

XV. Claim 1 of auxiliary request 4 differs from claim 1 of auxiliary request 3 by the following amendments to the features defining the steps executed by the processor:

- the replacement of the term "a *location*" with "*a first warehouse location*" and the replacement of "*to execute a function on an item proximate said location (12) with the assistance of a local operator (50)"* with *"to park itself in front of a shelf (12) on which an item is stored and to wait for a local operator (50) to retrieve the item from the shelf and to place the item in a tote (44)*" in the first feature
- the replacement of "*obtaining local operator identification information"* with "*identifying the local operator (50)*" in the fourth feature
- the addition of "*to aid operator (50)*" after "*preferences*" in the fifth feature
- the replacement of "*execute the function on the item*" with "*to retrieve the item from the shelf (12)*" in the eighth feature

XVI. The appellant argued as follows:

Features concerning tracking the operator's performance were based on technical considerations. The business requirement ended with how to precisely determine a warehouse operator's actual working time and performance, in a large warehouse system where multiple robots and operators cooperated at different locations. An interaction time between a robot and each of the operators was one of this system's many parameters. The decision to measure this specific parameter was based on the technical consideration of improving the precision of the operator's working time measurements.

Detecting the operator proximity and measuring its duration only when the robot was stationary saved computer resources compared to doing this continuously. The decision to base the proximity detection on a zone relative to the robot, rather than an absolute location, was driven by the technical consideration of improving the precision of determining the operator's proximity.

The skilled person would not have extracted these aspects from D1, as they were disclosed in a different context. Specifically, the forklift truck in D1 detected the operator's proximity while it was driving, rather than when it was stationary.

Moreover, the features in question derived technical character from the technical steps of capturing data and transmitting it to the server.

As regards the admissibility of the late-filed auxiliary request 1b, the appellant argued that it was a fallback position filed in response to a new objection under Article 56 EPC concerning auxiliary request 2a.

Reasons for the Decision

1. The invention

1.1 The invention in the most specific claim 1 of the auxiliary request 2a concerns an essentially conventional warehouse robot which collects information on the efficiency of a human operator interacting with it, see page 2, lines 21 to 24 of the published

application.

1.2 Looking at Figure 3, to pick up an item, the robot 18 drives to a fiducial reference marker 30 indicating the location where the item is stored (page 8, lines 16 to 18) and waits for a human operator 50 whose job is to pick the item from a shelf 12 and to place it in the container (tote) 44 on the robot, see page 8, last paragraph. Although not claimed, the item to be picked is displayed on a tablet computer 48 on the robot.

1.3 The tablet is configured to track the amount of time the operator interacts with the robot, see page 9, lines 27 to 28 and page 12, lines 1 to 2. The claim defines that this is done by a first transceiver which defines a zone surrounding the robot and reads a second transceiver for detecting that the operator enters and exits the zone. There has been some discussion on the meaning of these features, see decision, points 21 and 24; grounds of appeal page 2. Like the examining division, the Board reads them in the light of the disclosed embodiment (page 3, line 8; page 5, lines 1 to 3 and page 10, lines 6 to 16) as meaning that the zone is the reading range of the robot's RFID reader ("a first transceiver" in claim 1). Accordingly, detecting that the operator enters and exits the zone boils down to the RFID reader starting and stopping the sensing of an RFID tag carried by the operator ("second transceiver"). The Board understands that the start and stop of sensing are the points in time when the operator approaches the robot and moves away after putting the item in the tote.

1.4 The tablet measures the time between the robot arriving at the pick up point and the operator entering the zone, as well as the amount of time that the operator

interacts with the robot, see page 9, lines 20 to 28 and page 10, lines 27 to 29. The tablet provides these durations and the operator's identity, obtained from their tag, to a management server configured to track the operator's efficiency, see page 11, lines 3 to 5.

While not claimed, this information is used to incentivise the operator, positively one hopes, see page 12, lines 6 to 14.

1.5 In addition, the server sets the tablet to the operator's preferred language (second part of the last claim feature), see page 11, lines 20 to 23.

2. Admittance

2.1 The Board does not admit auxiliary requests 2, 3 and 4 into the proceedings under Article 12(6) RPBA. These requests were not admitted by the examining division under Rule 137(3) EPC and the Board finds no error in their use of discretion.

The examining division justified the decision not to admit those requests as follows:
- Auxiliary request 2: The amendments in this late-filed request generalised the original disclosure by omitting the use of a fiducial marker for navigation. Additionally, claim 1 did not overcome the inventive step objection raised against higher-ranking requests, see decision, point 31.
- Auxiliary requests 3 and 4: These requests were not convergent with the previous claims and introduced added subject-matter, specifically in amendments stating that the local operator assisted the robot, see decision, points 34 and 35.

The Board considers these reasons to be sound and judges that the overall use of discretion was correct.

2.2 The Board admits auxiliary requests 1a and 2a into the proceedings under Article 12(6) RPBA, as they represent a *bona fide* attempt to address secondary issues raised by the examining division.

Specifically, claim 1 of auxiliary request 1a deletes the alternative where the robot collects information on "*the amount of time the operator takes to perform a defined function*" whose implementation was not properly disclosed, see decision, points 24 and 31. Claim 1 of auxiliary request 2a includes amendments that overcome the objection of intermediate generalisation raised against auxiliary request 2. Resolving these issues allows the Board to focus on the inventive step of the claim based on the main disclosed embodiment, which contributes to procedural economy.

2.3 The appellant argued that auxiliary request 1b was a fall-back position addressing the objection of lack of inventive step, in particular to emphasise that the invention was applied in a complex system employing a plurality of robots (see section XVI above).

However, this request, while indeed limiting the claim to this scenario, removes a considerable number of features from claim 1 of auxiliary request 2a, thereby broadening that claim's scope in crucial aspects.

Common sense dictates that a fall-back position is a claim more limited than any previous claim, thereby having the potential to address the outstanding objections. In the present case, this is an objection under Article 56 EPC, which would generally require

only the addition of features. In contrast, removing features worsens the situation, as it potentially opens up new lines of attacks and necessitates further examination. This is rather a sideways shift than a fall-back position, which goes against the requirements of Article 13(2) RPBA, namely that at the late stage of the proceedings, amendments should only be considered when justified by compelling reasons of overcoming all outstanding objections without a possibility of raising new ones.

Therefore, the Board does not admit auxiliary request 1b.

3. Auxiliary request 2a, Article 56 EPC

3.1 The Board finds it convenient to analyse the most specific auxiliary request 2a first.

3.2 The examining division started from D1, which discloses a forklift truck, and considered the use of a robot to be an obvious alternative. However, given the shift in emphasis of the claims in auxiliary request 2a to features of the robot, the Board prefers to start from document D3, which, like the claimed invention, concerns a warehouse robot interacting with human operators.

3.3 Using the wording of claim 1, D3 discloses (references in brackets):

at least one robot (Figure 3) *configured to interact with the operators* ([116]: human pickers) *in the warehouse and to proceed to a fiducial marker placed on a shelf in the warehouse* ([14]: storage units and [107]: positional markers)*, the at least one robot*

including:

an autonomous wheeled base ([70] and Figure 3: a drive unit 34); *a tote for receiving items from the operator* ([71] and Figure 3: a container 36 anticipates the tote which according to page 8, line 1 of the application might be a container), *a first transceiver* ([90]: a location sensor detecting RFID tags), *a memory cooperating with the processor and storing navigation software, wherein the processor is configured to carry out the navigation software which relies on data concerning the environment* ([14] and [106]), *an internal table in the memory* (implicit in [106]) *that identifies a fiducial identification of the fiducial marker that corresponds to a location in the warehouse where a particular item can be found* ([14] and [107]), *and a tablet supported by a tablet holder interchangeably coupled to the coupling of the upper surface of the base* ([76], [77] and Figure 3: a tablet 38 and coupling device 40), *the tablet comprising, a tablet processor, a tablet-memory, a tablet clock or a tablet timer, and a network interface* (implicit in [76]), *and a second transceiver* ([90]: RFID tags);

wherein said first transceiver defines a zone surrounding said robot (implicit in [90]).

3.4 Furthermore, an order processing server, according to paragraphs [61] and [87] of D3, corresponds to the central management server in claim 1.

3.5 The robot of D3 operates in essentially the same way as the claimed one: after reaching the positional marker, it waits for the operator to place the product in its container ([135]). The major difference between claim 1 and D3 lies in features related to tracking the

operator, namely:

- In that the second transceiver carries information identifying said operator, and wherein said second transceivers are with the operators.
- In that the tablet comprises a proximity detector coupled to the first transceiver for detecting entry into said zone of an operator and to detect exit of said operator from said zone.
- The last five features excluding the final clause (recording robot and operator arrival time, identifying operators, providing information to server, definitions of the information provided, tracking operator efficiency at server).

3.6 In addition to this major difference, the robot of claim 1 differs from the one in D3:
- By a laser-radar and a camera from which the robot's processor receives data to capture information representative of the robot's environment.
- In that the tote is held by a tote holder interchangeably engaged with a coupling provided on an upper surface of the base.
- In that the tablet is set to the identified operator's preferred language by the management server (the final clause of the last feature).

3.7 Concerning the first group of features, the Board agrees with the examining division (decision, point 28.2) and judges that they implement a business requirement to get information about the operators' activities, namely determine and centrally register who placed the item on the robot, the time it took for the operator to get to the robot after it arrived at the shelf, and the time the operator spent near the robot.

3.8 The Board is not persuaded by the appellant's view that only the general task of determining a warehouse operator's performance and actual working times is non-technical, whereas the more specific sub-divisions of this requirement are based on technical considerations.

The non-technical aspects would include more than just the general requirement to "keep an eye" on the operators. They would also include the connections to any steps in a business workflow scheme that exists in the warehouse.

Such steps would include specifying that when a robot parks at a shelf, the operator should approach it, read the display, go to the shelf, pick the displayed item, place it in the robot's tote, and then move away. The operator's efficiency, called performance by the appellant, is measured by how quickly they complete these actions. In the Board's opinion, neither setting up this scheme nor measuring the time to complete any of the steps to track the operator's efficiency involves technical considerations.

Furthermore, the Board cannot see anything technical in the realisation that, in a warehouse where the robot's parking location and the shelf are close to one another while the operator's resting location is further away, the time during which the operator interacts with the robot is the duration between their entering and leaving the robot's proximity. The Board considers that understanding and analysing spatial and temporal conditions under which the steps of the established business workflows are carried out is *per se* a non-technical exercise.

It follows that the decision to measure the amount of

time the operator spends in the robot's proximity is based on non-technical considerations related to the above workflow scheme and the spatial conditions under which it is carried out. The argument that measuring this specific time improves measurement precision does not convince the Board, as it cannot see how choosing a particular time to be measured enhances the precision of the actual measurement technique itself.

3.9 The choice to measure the time the operator is proximate only when the robot is stationary also comes from the above workflow scheme, which precisely specifies that the operator interacts with stationary robots, making their whereabouts relevant only during this period. Thus, contrary to the appellant's argument, this decision does not require any considerations regarding the efficiency of the use of resources.

3.10 The Board is not persuaded by the argument that the above requirement specification derives technical character from the technical steps of collecting and transmitting data to the server. It is established case law that a computer implementation alone does not confer technical character to underlying non-technical matter, cf. T 1670/07 - *Shopping with mobile device/ NOKIA*, reasons, point 9.

3.11 Using the COMVIK approach (T 641/00 - *Two identities/ COMVIK*), the technical problem is to implement the above measurements and calculations of the steps in the workflow. Starting from D3 and facing this problem, the Board judges that it would have been obvious, in view of D1, to equip the operator with an RFID tag for identification and to read this tag using the robot's RFID reader. D1 discloses a forklift truck that

identifies proximate operators by detecting RFID tags integrated into their garments, see paragraphs [185] to [187]. Contrary to the appellant's view, the Board judges that the skilled person would have had no difficulty generalising the idea of detecting proximate individuals using RFID technology from D1's context, where detection occurs while the truck is driving, to determine the warehouse operator's proximity when the robot is stationary.

Contrary to the appellant's view, the Board considers that the use of a zone around the robot as the basis for this proximity determination is a direct consequence of the RFID technology employed rather than a separate design decision.

Furthermore, it would have been obvious to measure the durations between parking the robot and the RFID reader starting and stopping the sensing of the RFID tag (penultimate claim feature, two first alternatives), and to transmit the measured times to the central server. Implementing those functions on the tablet using its internal clocks would have been one of two obvious possibilities, with the other being their implementation on the robot's central processor.

3.12 Incidentally, claim 1 also encompasses the alternative where, instead of recording the operator's entry and exit from the robot's surrounding zone, the tablet collects information on "*the amount of time the operator takes to pick an item from the shelf and place it on the robot or to pick an item from the robot and placing it on the shelf*". While the claim is obvious for the above reasons and there is no need to analyse this alternative in detail, the Board nonetheless notes that this is defined merely as a result to be achieved

without technical implementation and, therefore, no technical contribution (Articles 84 and 56 EPC). Additionally, the Board agrees with the examining division (decision, points 24 and 31) that the robot in claim 1, and indeed in the application, lacks technical means to directly track the operator's actions at the shelf, which exacerbates these issues.

3.13 As regards the second group of distinguishing features, equipping the robot with a laser-radar and camera would have been obvious in view of paragraphs [108] to [110] of D6, especially considering that paragraph [89] of D3 already suggests navigation relying on optical sensors. The use of a tote holder interchangeably engaged with a coupling mounted on the wheeled base would have been an obvious design alternative.

Adapting the central server of D3 to remotely set the tablet's language based on the operator's identity is an obvious implementation of the non-technical requirement that any instructions or information should be displayed in the operator's predefined language. The use of RFID technology to identify the operator is obvious for the above reasons.

3.14 Hence, claim 1 lacks an inventive step (Article 56 EPC).

4. Main request and auxiliary requests 1 and 1a

Since claim 1 of these higher-ranking requests is broader than claim 1 of the auxiliary request 2a, they lack an inventive step for the above reasons.

5. Request for refund of appeal fee

The appellant did not provide any justification for this request, and the Board sees no basis for it. Hence, the request for refund of the appeal fee is dismissed.

6. Since none of the appellant's admitted requests are allowable, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

U. Bultmann W. Chandler

Decision electronically authenticated