



**FEDERAL REPUBLIC OF NIGERIA**  
*Certificate of Registration of Patent*

(Patents and Designs Act; CAP 344 Laws of the Federation of Nigeria 1990)

RP: F/PT/NC/2024/10607

Date of Patent: 12/01/2024

Date of Sealing: 26/02/2024

President of the Federal Republic of Nigeria and Commander-in-chief of the Armed Forces  
**BOLA AHMED TINUBU, GCFR.**

Whereas a request for the grant of a patent has been made by: **INSTITUTE OF APPLIED PHYSICS, JIANGXI ACADEMY OF SCIENCES** of NO. 7777 CHANGDONG AVENUE, NANCHANG CITY, JIANGXI PROVINCE, 330000, CHINA C/O CROWN AND SHIELDS LEGAL OF SUIT 14, FLOOR 1, OCEAN CENTER, PLOT 1018 CADASTRAL ZONE B18, OFF OLADIPO DIYA ROAD, APO GUDU, ABUJA..

For the sole use and advantage of an invention for: **INTERNET OF THINGS BASED SYSTEM AND METHOD FOR REGULATING PRODUCTION OF AGRICULTURAL PRODUCTS**

**AND WHEREAS** the Federal Government being willing to encourage all invention which may be for public good, is pleased to accede to the request:

**KNOW YE THEREFORE**, that I do by this Instrument give and grant unto the person(s) above named and any successor(s), executor(s), administrator(s) and assign(s) (each and any of whom are hereinafter referred to as the patentee) by special licence, full power, sole privilege and authority, that the patentee or any agent or licensee of the patentee may subject to the conditions and provisions prescribed by any statute or order for the time being in force at all times hereafter during the term of years herein mentioned, make, use, exercise and vend the said invention throughout the Federal Republic of Nigeria, and that the patentee shall have and enjoy the whole profit and advantage from time to time accruing by reason of the said invention during the term of twenty years from the date first above written on this Instrument: **AND** to the end that the patentee may have and enjoy the sole use and exercise of the full benefit of the said invention, I do by this Instrument strictly command all citizens of the Federal Republic of Nigeria that they do not at any time during the continuance of the said term either directly or indirectly make use of or put in practice the said invention, nor in anywise imitate the same, without the written consent, licence or agreement of the patentee, on pain of incurring such penalties as may be justly inflicted on such offenders, and of being answerable to the patentee according to law for damages thereby occasioned:

**PROVIDED ALWAYS** that this patent shall be revocable on any of the grounds from time to time by law prescribed as grounds for revoking patents granted by me, and the same may be revoked and made void accordingly:

**PROVIDED ALSO** that nothing herein contained shall prevent the granting of licenses in such manner and for such considerations as they may by law be granted

MADE this: 26th DAY OF FEBRUARY, 2024

**STELLA OZO EZENDUKA**  
Chief Registrar







FEDERAL REPUBLIC OF NIGERIA  
FEDERAL MINISTRY OF INDUSTRY, TRADE AND INVESTMENT  
COMMERCIAL LAW DEPARTMENT  
PATENTS AND DESIGNS ACT CAP 344, LFN 1990  
**PATENT ACKNOWLEDGMENT FORM**

RRR	340972220592	OAI	IPONMW638406481574023782
FILING DATE	Jan 12, 2024	FILE NO	F/PT/NC/2024/10607
TRANSACTION AMOUNT	27900.00	FILING TIME	
PATENT INFORMATION			
APPLICATION TYPE	Patent	PATENT TYPE	NON-CONVENTIONAL
TITLE OF PATENT			
INTERNET OF THINGS BASED SYSTEM AND METHOD FOR REGULATING PRODUCTION OF AGRICULTURAL PRODUCTS			
APPLICANT INFORMATION			
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ASSIGNEE NATIONALITY	China		
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ASSIGNOR NATIONALITY	China		
PRIORITY INFORMATION			
S/N	COUNTRY	APPLICATION NO	DATE
ADDRESS FOR SERVICE			
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STATE	FCT-ABUJA	EMAIL	info@crownandshieldslegal.com
--- DOCUMENTS ATTACHED DURING APPLICATION FILING---			
Claims			ATTACHED
Deed Of Assignment			ATTACHED
Letter Of Authorization			ATTACHED
Complete Specification Form			ATTACHED
<p align="center"><b>YOUR APPLICATION HAS BEEN RECEIVED AND IS RECEIVING DUE ATTENTION</b>  <b>TRADEMARKS, PATENTS AND DESIGNS REGISTRY</b>  <b>COMMERCIAL LAW DEPARTMENT</b>  <b>FEDERAL MINISTRY OF INDUSTRY, TRADE AND INVESTMENT</b></p>			





FEDERAL REPUBLIC OF NIGERIA  
FEDERAL MINISTRY OF INDUSTRY, TRADE AND INVESTMENT  
COMMERCIAL LAW DEPARTMENT  
PATENTS AND DESIGNS ACT CAP 344, LFN 1990  
**PATENT ACCEPTANCE LETTER**

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NATIONALITY	China		
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NATIONALITY	China		
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PHONE NUMBER	+2348037620836	EMAIL	info@crownandshieldslegal.com
NATIONALITY	China		
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ASSIGNEE NATIONALITY	China		
ASSIGNOR NAME	(1) CHENG, Xiangping; (2) HU, Qiang; (3) QIU, Yijian	ASSIGNOR ADDRESS	(1) No. 7777 Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China; (2) No. 7777 Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China; (3) No. 7777 Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China
ASSIGNOR NATIONALITY	China		
PRIORITY INFORMATION			
S/N	COUNTRY	APPLICATION NO	DATE
ADDRESS FOR SERVICE			
ATTORNEY NAME	CROWN AND SHIELDS LEGAL	ATTORNEY ADDRESS	Suit 14, Floor 1, Ocean Center, Plot 1018 Cadastral Zone B18, Off Oladipo Diya Road, Apo Gudu, Abuja, Nigeria
COUNTRY	Suit 14, Floor 1, Ocean Center, Plot 1018 Cadastral Zone B18, Off Oladipo Diya Road, Apo Gudu, Abuja, Nigeria	PHONE NUMBER	+2348037620836
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YOUR APPLICATION HAS BEEN ACCEPTED TO VERIFY THIS DOCUMENT, SCAN THE BARCODE BELOW			



**Patents From No. 1(b)**

N4 for each application for  
protection in a convention country

**ALL ABOVE SPACE FOR OFFICIAL USE ONLY**

**PATENTS AND DESIGNS DECREE 1970  
(1970 No. 60)**

**APPLICANTS OR AGENTS REF:**

PT\_CP\_NG00001797  
HKJP20231209323

**CONVENTION APPLICATION FOR A PATENT  
(To be accompanied by two copies of Patents Form No. 3)**

1. We, (a) **Institute of Applied Physics, Jiangxi Academy of Sciences** of No. 7777 Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China hereby declare that applications for protection for an invention or for inventions have been made in the following country or countries and on the following official dates, namely -

in  
on  
by

and that each of the said applications was the first application in a Convention country in respect of the relevant invention by us or by any person from whom we derive title.

2. I am (e) the assignee Institute of Applied Physics, Jiangxi Academy of Sciences of the said patent entitled (d) INTERNET OF THINGS BASED SYSTEM AND METHOD FOR REGULATING PRODUCTION OF AGRICULTURAL PRODUCTS by virtue of (f) assignment.  
or (e) the personal representative of the said (d) .....
3. We declare that to the best of our knowledge and belief there is no lawful ground of objection to the grant of a patent to us on this application, and pursuant to subsection 2 of section 27 of the Act, we pray that a patent may be granted to us with priority founded on the above-mentioned application(s) in a Convention country or countries as provided by subsection (4) of section 3 for the invention described in the accompanying complete specification under the title INTERNET OF THINGS BASED SYSTEM AND METHOD FOR REGULATING PRODUCTION OF AGRICULTURAL PRODUCTS.
4. And I/we request that the patent may be granted as a patent of addition to (e). Patent No ..... the patent to be granted on application No .....
5. And we request that all notices, requisitions, and communications relating to this application may be sent to CROWN AND SHIELDS LEGAL at Suit 14, Floor 1, Ocean Center, Plot 1018 Cadastral Zone B18, Off Oladipo Diya Road, Apo Gudu, Abuja who are hereby appointed to act for us.

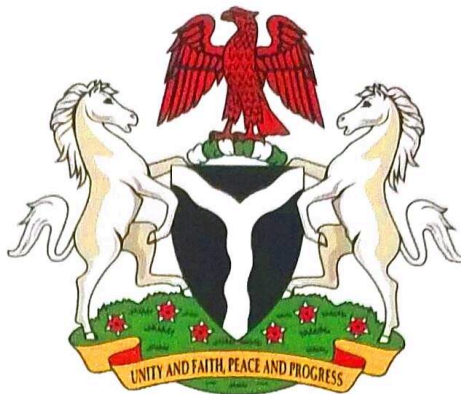




KIMI ISAAC ONANA  
FOR: CROWN & SHIELDS LEGAL

**To The Registrar of Patents and Designs,  
Patents Branch.  
Federal Ministry of Trade,  
Federal Capital Territory, Abuja, Nigeria.**





**FORM 2**

PATENT AND DESIGNS ACT  
LFN 2004 CAP 344  
AUTHORISATION OF AGENT

We, **Institute of Applied Physics, Jiangxi Academy of Sciences** of No. 7777 Changdong Avenue,  
Nanchang City, Jiangxi Province, 330000, China

have appointed

**Crown and Shields Legal of Suit 14, Floor 1, Ocean Center, Plot 1018 Cadastral Zone B18, Off  
Oladipo Diya Road, Apo Gudu, Abuja, Nigeria**

to act as our agent for the registration of patents and designs in our name.

And request that all notices, requisitions and communications relating thereto be sent to such agent at the  
above address.

We hereby revoke all previous authorizations, if any, in respect of the same matter.

Dated this 9th of January 2024

CHENG, Xiangping

For: Institute of Applied Physics, Jiangxi  
Academy of Sciences

Signatory: CHENG, Xiangping

Capacity: Director

To: Registrar of Patents Patents  
Office, Patents Branch Federal  
Ministry of Commerce Abuja,  
Nigeria

**NIGERIA**  
**DEED OF ASSIGNMENT**  
**Agent reference: PT\_CP\_NG00001797**  
**Client reference: HKJP20231209323**

BY AND BETWEEN:

(1) **CHENG, Xiangping** of No. 7777 Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China  
(2) **HU, Qiang** of No. 7777 Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China  
(3) **QIU, Yijian** of No. 7777 Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China  
(hereinafter referred to as the "Assignors")

AND

**Institute of Applied Physics, Jiangxi Academy of Sciences** of No. 7777 Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China  
(hereinafter referred to as the "Assignee")

WHEREAS the Assignors are the inventors of the invention disclosed in the patent application:

INTERNET OF THINGS BASED SYSTEM AND METHOD FOR REGULATING PRODUCTION OF AGRICULTURAL PRODUCTS

AND the Assignee has for good and sufficient consideration acquired the said invention from the Assignors.

**NOW THEREFORE** the Assignors hereby confirm having assigned the said invention to the Assignee as far as **NIGERIA** is concerned with the right to apply for a Nigerian patent in their name and the Assignee hereby accepts the Assignment.

Dated this 9th of January 2024

**Assignors**

CHENG, Xiangping  
CHENG, Xiangping

HU, Qiang  
HU, Qiang

QIU, Yijian  
QIU, Yijian

**Assignee**

CHENG, Xiangping  
Institute of Applied Physics, Jiangxi Academy of Sciences



### Patents From No. 3

Fee:

#### ALL ABOVE SPACE FOR OFFICIAL USE ONLY

#### APPLICANTS OR AGENTS REF:

PT\_CP\_NG00001797  
HKJP20231209323

#### PATENTS DECREE NO 60 OF 1970 COMPLETE SPECIFICATION (To be furnished in duplicate - one without fee)

Where Foreign Priority is  
desired in respect of one or  
more specification. Quote Nos  
and date or dates **PRIORITY  
DATA:**

(a) Insert titles of  
Invention.

(a) INTERNET OF THINGS BASED SYSTEM AND METHOD FOR REGULATING  
PRODUCTION OF AGRICULTURAL PRODUCTS

(b) State (in full) name,  
address and nationality  
of applicant or  
applicants as stated in  
the application form.

(b) We, **Institute of Applied Physics, Jiangxi Academy of Sciences** of No. 7777  
Changdong Avenue, Nanchang City, Jiangxi Province, 330000, China  
do hereby declare the invention, for which I pray that a patent may be granted to  
me, and the method by which it is to be performed, to be particularly described in  
and by the following statement:

(c) (a) Here begin full  
description of  
invention. The  
continuation of the  
specification should be  
upon paper of the same  
size as this form, on  
one side only with the  
lines well spaced and a  
margin of one inch and  
a half on the of the  
paper. The completion  
of the description  
should be followed by  
the words "what I (or  
we) claim is" After  
which should be written  
the claim/claims  
numbered  
consecutively (see note  
below). The  
specification and  
duplicate thereof must  
be signed at the end.

(c) SEE ATTACHED

NOTE.- The claims must relate to a single invention, must be clear and succinct and must be fairly based on the matter disclosed in the specification. They should define the scope of the invention claimed. Applicants should be careful that their claims include neither more nor less than they desire to protect by their patent. Any unnecessary multiplicity or claims or prolixity of language should be avoided. Claims should not be made for the efficiency or advantages of the invention.

# **INTERNET OF THINGS BASED SYSTEM AND METHOD FOR REGULATING PRODUCTION OF AGRICULTURAL PRODUCTS**

## **TECHNICAL FIELD**

[01] The present application belongs to the field of crop production automation, and particularly relates to an Internet of Things based system and method for regulating production of agricultural products.

## **BACKGROUND ART**

[02] In order to collect information of a crop growth environment, currently, agricultural meteorological stations are mainly established close to a crop growth environment that needs to be monitored, and manual regulation is carried out based on collected data. However, such production regulation is not only inefficient in data obtaining, time-consuming and labor-intensive, but also has a low regulation efficiency. Moreover, there is no complete big data on the quality of a production process of agricultural products, resulting in no data available for the product quality traceability of the agricultural products, and it is more difficult to make further improvements in production quality and production efficiency of crop production at all stages. How to increase the regulation efficiency of a crop production environment, and establish big data of production quality traceability to improve production efficiency and production quality of crops, need a complete system for regulating crop production.

## **SUMMARY**

[03] The present application provides an Internet of Things based system and method for regulating production of agricultural products. For an extensive production situation of crops in the past, the present application provides automatic regulation of crop growth environment according to crop production rules, so as to satisfy growth environment requirements of crops at various growth stages, and moreover, establishes big data of crop growth processes, so as to provide data support for crop production quality traceability and improving crop production efficiency and production quality.

[04] In order to achieve the above objective, the present application provides the following technical solutions.

[05] An Internet of Things based system for regulating production of agricultural products includes a cloud service platform, a comprehensive sensing terminal, a remote controlled terminal and a monitoring terminal, where

[06] the cloud service platform is connected to the comprehensive sensing terminal, the remote controlled terminal and the monitoring terminal by means of the Internet of Things separately;

[07] the comprehensive sensing terminal is located in an agricultural product production area, and is configured to collect growth environment data and spatial video data of the agricultural product production area, and send the growth environment data and the spatial video data to the cloud service platform;

[08] the cloud service platform is configured to process the growth environment data and the spatial video data, and send a cloud regulation instruction to the remote controlled terminal; the cloud service platform is further configured to provide production process data of the agricultural product production area for the monitoring terminal, and send cloud regulation data and cloud warning data to the monitoring terminal;

[09] the remote controlled terminal is located in the agricultural product production area, and is configured to adjust production factors according to the cloud regulation instruction; and

[10] the monitoring terminal is configured to receive the cloud regulation data and the cloud warning data, and is further configured to query production process data of the agricultural products by means of the cloud service platform.

[11] Further disclosed in the present application is an Internet of Things based method for regulating production of agricultural products, including:

[12] obtaining growth environment data and spatial video data of an agricultural product production area;

[13] processing and storing the growth environment data and the spatial video data;

[14] generating a cloud regulation instruction based on the growth environment



data, generating cloud regulation data based on the cloud regulation instruction, determining whether to generate warning data based on the cloud regulation data, generating production process data based on the growth environment data, the spatial video data and the cloud regulation data, where the production process data is configured to query production data of the agricultural products; and

[15] adjusting production factors according to the cloud regulation instruction, and completing regulation of production of the agricultural products.

[16] The present application has the following beneficial effects:

[17] Disclosed in the present application are an Internet of Things based system and method for regulating production of agricultural products. The crop growth environment data are obtained by means of the comprehensive sensing terminal, the cloud regulation instruction and the cloud regulation data are generated by the cloud service platform, the remote controlled terminal regulates generation elements according to the cloud regulation instruction, and the monitoring terminal can timely master the crop growth environment. Therefore, automatic regulation of crops in various growth stages is implemented, and the crop growth environment requirements are satisfied. Real-time query of the monitoring terminal can also be provided to understand crop production status at any time. Moreover, detailed production data are also accumulated during crop production, which not only establishes big data for quality traceability, but also provides data support for continuously improving crop production efficiency and production quality.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

[18] FIG. 1 is a schematic structural diagram of an Internet of Things based system for regulating production of agricultural products according to an example of the present application; and

[19] FIG. 2 is a schematic flowchart of an Internet of Things based method for regulating production of agricultural products according to an example of the present application.

## DETAILED DESCRIPTION OF THE EMBODIMENTS

[20] To make the above objectives, features, and advantages of the present application clearer and more comprehensible, the present application will be further described in detail below in conjunction with the accompanying drawings and the specific embodiments.

[21] As shown in FIG. 1, an Internet of Things based system for regulating production of agricultural products includes a cloud service platform, a comprehensive sensing terminal, a remote controlled terminal and a monitoring terminal.

[22] The cloud service platform is connected to the comprehensive sensing terminal, the remote controlled terminal and the monitoring terminal by means of the Internet of Things separately.

[23] The comprehensive sensing terminal is located in an agricultural product production area, is configured to collect growth environment data and spatial video data of the agricultural product production area, and includes a soil data sensing terminal and a video collection terminal, which respectively collect the growth environment data and the spatial video data of the agricultural product production area.

[24] The cloud service platform is configured to process the growth environment data and the spatial video data. In this example, the cloud service platform mainly includes a monitoring module, a quality module, a warning module, a cloud control module and a storage module. The monitoring module is configured to convert the received growth environment data and spatial video data into a data format storable by the cloud service platform and then store the data into the storage module. The cloud control module generates a cloud regulation instruction according to the growth environment data by means of comparison calculation with a preset regulation threshold, and sends the cloud regulation instruction to the remote controlled terminal.

[25] The monitoring terminal receives cloud regulation data and instantly understands a regulation condition of crop production. In case that cloud warning data is received, it indicates that there may be other problems in the crop production area, which need to be handled by relevant personnel on the spot. The monitoring terminal can also query production process data of the agricultural products by means of the

cloud service platform at any time.

[26] The remote controlled terminal is located in the agricultural product production area. In the example, the remote controlled terminal includes a water supply apparatus and a nutrient adding apparatus. The remote controlled terminal receives the cloud regulation instruction sent from the cloud service platform, and regulates production factors, mainly including regulating the water supply amount and the nutrient adding amount. Corresponding to an extended function of the monitoring terminal, the cloud control module on the cloud service platform may forward the regulation instruction sent from the monitoring terminal, and the remote controlled terminal may respond to remote control of the monitoring terminal.

[27] By means of the above regulation system, automatic regulation of crops in various growth stages is implemented, and the crop growth environment requirements are satisfied. Real-time query of the monitoring terminal can also be provided to understand crop production status at any time. Moreover, detailed production data are also accumulated during crop production, which not only establishes big data for quality traceability, but also provides data support for continuously improving crop production efficiency and production quality.

[28] The present application further provides an Internet of Things based method for regulating production of agricultural products. As shown in FIG. 2, the method includes:

[29] S102, obtain growth environment data and spatial video data of an agricultural product production area. In the example, the growth environment data and the spatial video data of the agricultural product production area are collected by using an comprehensive sensing terminal, and sent to the cloud service platform by means of the Internet of Things.

[30] S104, process and store the growth environment data and the spatial video data. In the example, the cloud service platform converts the growth environment data and the spatial video data into storable data for storage, so as to facilitate later data query.

[31] S106, generate a cloud regulation instruction, cloud regulation data, and



production process data, and determine whether to generate warning data. In the example, the cloud service platform obtains water amount regulation data and nutrient regulation data based on the growth environment data through comparison and calculation with a preset moisture threshold and a preset nutrition threshold respectively, integrates the water amount regulation data and the nutrient regulation data to generate the cloud regulation instruction, and further generates the cloud regulation data according to the cloud regulation instruction. The cloud regulation instruction including global position system (GPS) positioning information is sent to the remote controlled terminal for the remote controlled terminal to regulate production elements. The cloud regulation data are sent to the monitoring terminal for the monitoring terminal to understand a regulation condition of growth environment of the agricultural products in real time.

[32] S108, adjust production factors, and complete regulation of production of the agricultural products. In the example, the remote controlled terminal includes a water supply apparatus and a nutrient adding apparatus. The remote controlled terminal corresponding to the GPS positioning information regulates the water supply amount of the water supply apparatus and the adding amount of the nutrient addition apparatus respectively according to the received cloud regulation instruction, so as to complete production regulation of the agricultural products. By means of the above method, automatic regulation of crops in various growth stages can be implemented, and the crop growth environment requirements are satisfied. Real-time query of the monitoring terminal can also be provided to understand production status of agricultural products at any time. Moreover, detailed production data are also accumulated during crop production, which not only establishes big data for quality traceability, but also provides data support for continuously improving crop production efficiency and production quality.

## **WHAT IS CLAIMED IS:**

1. An Internet of Things based system for regulating production of agricultural products, comprising a cloud service platform, a comprehensive sensing terminal, a remote controlled terminal and a monitoring terminal, wherein

the cloud service platform is connected to the comprehensive sensing terminal, the remote controlled terminal and the monitoring terminal by means of the Internet of Things separately;

the comprehensive sensing terminal is located in an agricultural product production area, and is configured to collect growth environment data and spatial video data of the agricultural product production area, and send the growth environment data and the spatial video data to the cloud service platform;

the cloud service platform is configured to process the growth environment data and the spatial video data, and send a cloud regulation instruction to the remote controlled terminal; the cloud service platform is further configured to provide production process data of the agricultural product production area for the monitoring terminal, and send cloud regulation data and cloud warning data to the monitoring terminal;

the remote controlled terminal is located in the agricultural product production area, and is configured to adjust production factors according to the cloud regulation instruction; and

the monitoring terminal is configured to receive the cloud regulation data and the cloud warning data, and is further configured to query production process data of the agricultural products by means of the cloud service platform.

2. The Internet of Things based system for regulating production of agricultural products according to claim 1, wherein the comprehensive sensing terminal comprises a soil data sensing terminal and a video collection terminal;

the soil data sensing terminal is configured to obtain the growth environment data of the agricultural product production area; and

the video collection terminal is configured to collect the spatial video data of the

agricultural product production area.

3. The Internet of Things based system for regulating production of agricultural products according to claim 2, wherein the growth environment data comprises soil moisture and nutrient content.

4. The Internet of Things based system for regulating production of agricultural products according to claim 1, wherein the cloud service platform comprises a monitoring module, a quality module, a warning module, a cloud control module and a storage module, wherein

the monitoring module is configured to process the growth environment data and the spatial video data, and store the growth environment data and the spatial video data into the storage module;

the cloud control module is configured to send the cloud regulation instruction to the remote controlled terminal according to the growth environment data, the cloud control module is further configured to convert the cloud regulation instruction to the cloud regulation data and send the cloud regulation data to the monitoring terminal, and the cloud control module stores the cloud regulation data into the storage module;

the warning module is configured to send the cloud warning data to the monitoring terminal according to the cloud regulation data and a preset regulation threshold; and

the quality module is configured to provide the production process data to the monitoring terminal according to a production quality query request sent from the monitoring terminal, and the production process data comprise the growth environment data, the spatial video data, and the cloud regulation data.

5. The Internet of Things based system for regulating production of agricultural products according to claim 1, wherein the remote controlled terminal comprises a water supply apparatus and a nutrient adding apparatus;

the water supply apparatus is configured to supply water to the agricultural product production area; and

the nutrient adding apparatus is configured to add nutrients to the water.

6. The Internet of Things based system for regulating production of agricultural products according to claim 5, wherein the cloud regulation instruction comprises water

amount regulation data and nutrient regulation data;

the water supply apparatus regulates the water supply amount according to the water amount regulation data; and

the nutrient adding apparatus regulates the nutrient supply amount according to the nutrient regulation data.

7. An Internet of Things based method for regulating production of agricultural products, comprising:

obtaining growth environment data and spatial video data of an agricultural product production area;

processing and storing the growth environment data and the spatial video data;

generating a cloud regulation instruction based on the growth environment data, generating cloud regulation data based on the cloud regulation instruction, determining whether to generate warning data based on the cloud regulation data, generating production process data based on the growth environment data, the spatial video data and the cloud regulation data, wherein the production process data is configured to query production data of the agricultural products; and

adjusting production factors according to the cloud regulation instruction, and completing regulation of production of the agricultural products.

8. The Internet of Things based method for regulating production of agricultural products according to claim 7, wherein the growth environment data comprises soil moisture and soil nutrient content; and

a method for obtaining the growth environment data comprises:

obtaining the growth environment data by means of a soil quality sensing apparatus, wherein

the soil quality sensing apparatus comprises a soil moisture sensing apparatus and a soil nutrient sensing apparatus.

9. The Internet of Things based method for regulating production of agricultural products according to claim 8, wherein a method for generating the cloud regulation instruction comprises:

obtaining water amount regulation data based on the soil moisture and a preset



moisture threshold;

obtaining nutrient regulation data based on the nutrient content and a preset nutrient threshold; and

obtaining the cloud regulation instruction based on the water amount regulation data and the nutrient regulation data.

## ABSTRACT OF THE DISCLOSURE

Disclosed in the present application are an Internet of Things based system and method for regulating production of agricultural products.

## ABSTRACT DRAWING

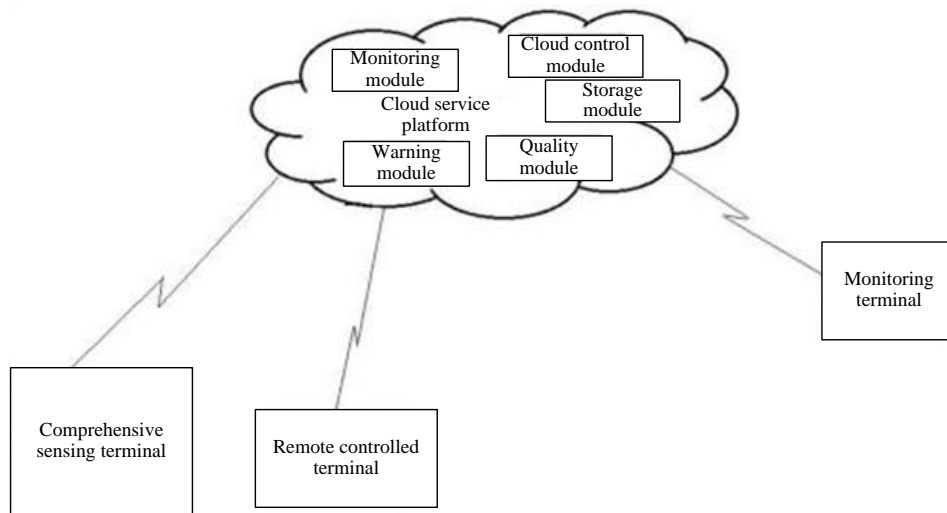


FIG. 1

## Drawings

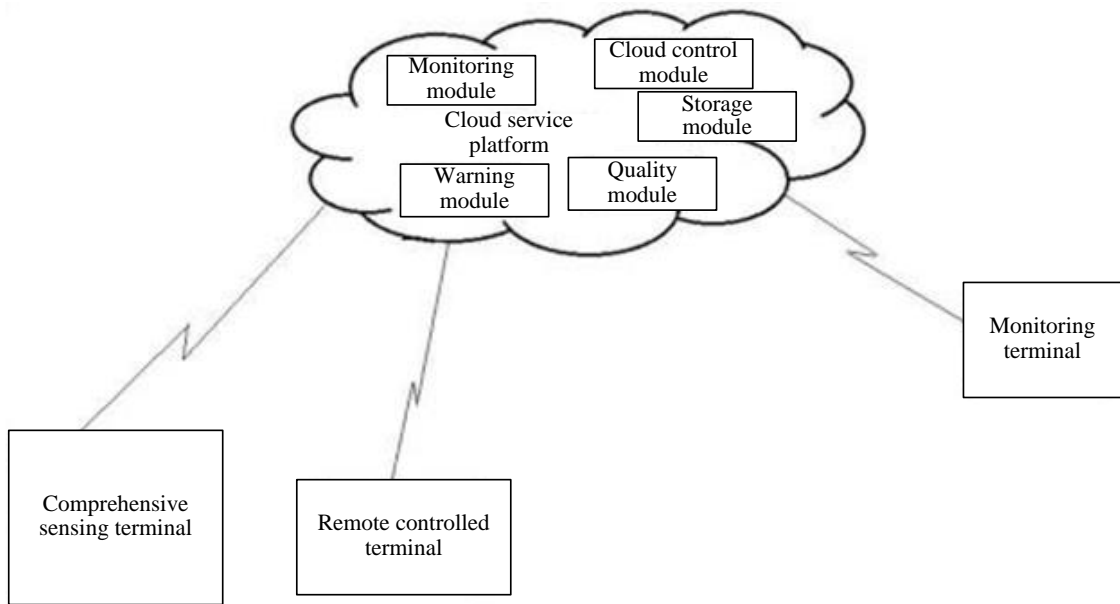


FIG. 1

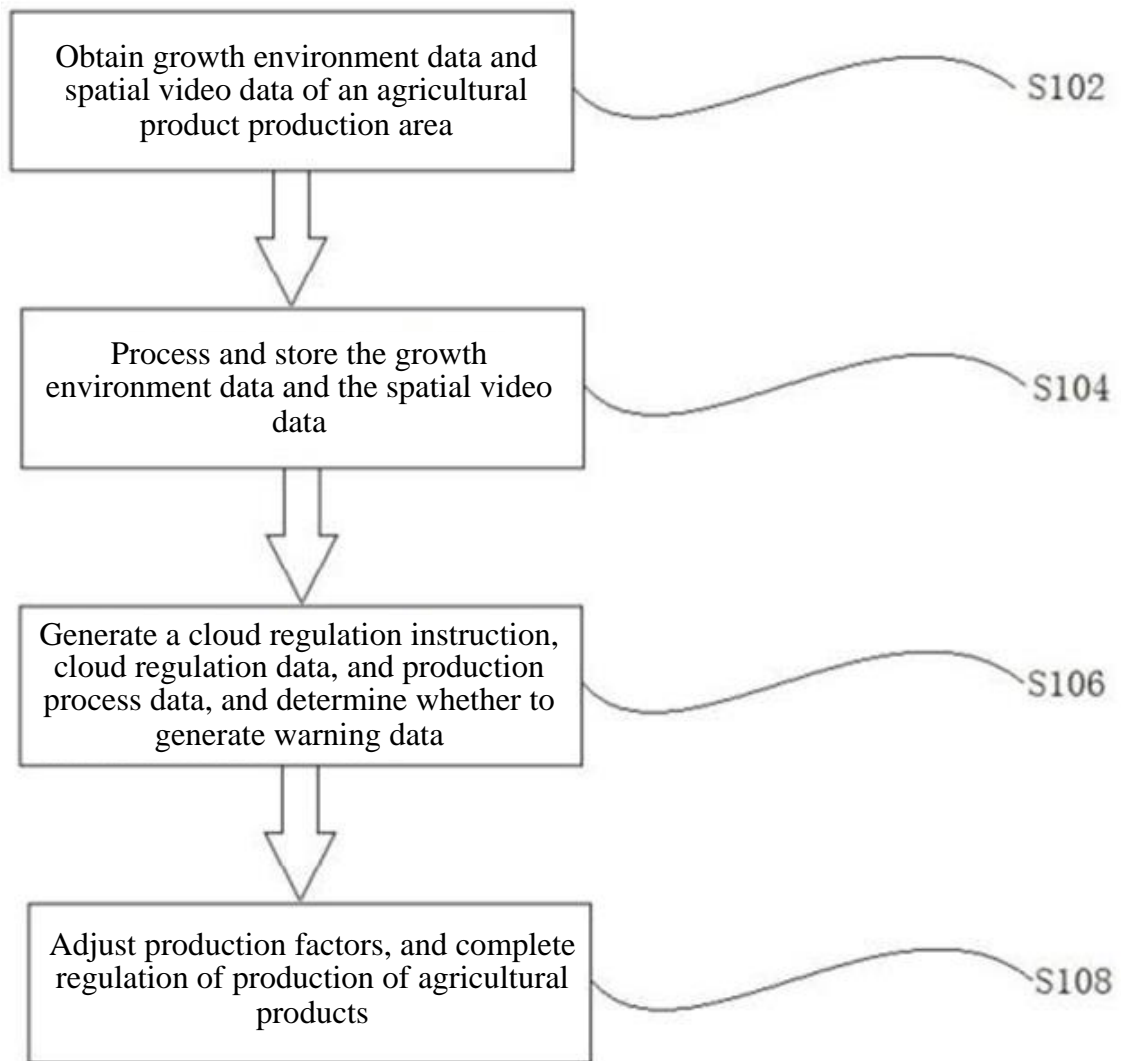


FIG. 2