

202111056238, Indian Patent no. 508883



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Invention Title	SYSTEM AND METHOD FOR PROVIDING ENERGY MANAGEMENT IN COMMUNICATION NETWORK
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Application Number	202111056238
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Field Of Invention	ELECTRICAL
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Abstract:

Disclosed is system (100) and method (200) for providing energy management in communication network (700). The system (100) comprises a plurality of the solar-enabled Base Stations (BSs) (300-n) connected to a power grid (600) and a core network (800) configured in the communication network (700). The core network (800) comprises a controller (102) configured for enabling energy exchange among the energy-deficient BS from the plurality of BSs (300-n) and energy-sufficient BS from the plurality of BSs (300) through the power grid (600), thus reducing the carbon footprint. The controller (102) is also configured for cooperatively adjusting network coverage area for each of the BS of the plurality of BSs (300-n). The power grid (600) operates in an energy prosumer mode, providing flexibility to the plurality of BSs (300-n) to procure energy from it to avoid energy outage or sell surplus energy back to the grid.

Complete Specification

] The present application does not claim priority from any patent application.

TECHNICAL FIELD

[002] Embodiments of the present invention relate to energy management, and more particularly to energy management in communication network.

BACKGROUND

[003] With an advent of Internet of Things (IoT) devices, there is a huge increment in data traffic and accordingly data requirements from user have increased drastically. The proliferation of the IoT devices alongside the rollout of 5G communications is expected to increase the number of Base Stations (BSs) in a network to cater to the user Quality of Service (QoS), thus increasing the network energy consumption. These BSs being energy intensive devices are estimated to generate a large amount of the carbon footprint in the Information and Communication Technology (ICT) sector.

[004] The existing solutions like purely renewable enabled BSs, optimal resource allocation and traffic management techniques (dynamic BS ON/OFF or cell zooming methods) are costlier, complex in nature, and are unable to utilize surplus energy generated by renewable sources. In practice, the BS loads are not always balanced. There might develop a scenario in the network such that some BSs experience a higher traffic and data requirements, thus requiring a higher energy to serve the user-



सं. \ No. 202111056238

दिनांक \ Dated the 09/02/2024

सेवा में, \ To :

Address of Service:- Legasis Partners, B-105, ICC Trade Tower, Senapati Bapat Road, Pune 411016, Maharashtra, India
Email Id:- ip@legasis.in

विषय :- पेटेंट आवेदन संख्या 202111056238 के संबंध में अधिनियम की धारा 43 के तहत पेटेंट अनुदान तथा पेटेंट रजिस्टर में प्रविष्टि की सूचना
Sub :- Intimation of the grant and recordal of patent under section 43 of the Act in respect of patent application no. 202111056238

महोदय/महोदया,
Sir/Madam,

आपको सूचित किया जाता है कि पेटेंट अधिनियम, 1970 की धारा 12 व 13 तथा उस आधार पर बने नियम के तहत उपर्युक्त पेटेंट आवेदन के परीक्षण [व ----- को हुई सुनवाई] के उपरांत एतद्वारा पेटेंट अनुदान किया जाता है। तथा पेटेंट अनुदान की प्रविष्टि 09/02/2024 को पेटेंट रजिस्टर में कर दी गयी है।

This is to Inform you that following the examination of above mentioned patent application under section 12 and 13 of The Patents Act, 1970 and Rules made thereunder [and hearing held on -----] a patent is hereby granted and recorded in the Register of Patents on the 09/02/2024. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No	: 508883
आवेदक का नाम \ Name Of Applicant	: INDIAN INSTITUTE OF TECHNOLOGY DELHI
पेटेंट दिनांक \ Date of Patent	: 03/12/2021
पूर्विका तिथि \ Priority Date	: 03/12/2021
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filing date of Request for examination	: 03/12/2021
शीर्षक \ Title	: SYSTEM AND METHOD FOR PROVIDING ENERGY MANAGEMENT IN COMMUNICATION NETWORK
दावों की संख्या \ Number of claims	: 17
Controller' Name	: Rahul Meena
Controller' Email	: rahulmeena.ip@gov.in
Controller' Location	: Delhi

उपर्युक्त पेटेंट के अनुदान का प्रकाशन अधिनियम की धारा 43 के तहत पेटेंट कार्यालय के आधिकारिक जर्नल में किया जाएगा।
The grant of above mentioned patent will be published in the Official Journal of the patent Office under section 43 of the Act.

पेटेंट अधिनियम 1970 यथा संशोधित पेटेंट (संशोधन) नियम, 2005/ पेटेंट नियम, 2003 यथा संशोधित पेटेंट (संशोधन) नियम, 2016 की धारा 142 की उप-धारा (4) के प्रावधानों के तहत उपरोक्त प्रविष्टि की तिथि से 3 माह के भीतर इस कार्यालय में नवीकरण शुल्क जमा किया जाना चाहिए।

The payment of renewal fee is required to be made at this office within three(3) months from the aforesaid date of recording according to the proviso in sub-section(4) of Section 142 of The Patents Act, 1970, as amended by The Patents (Amendment) Act, 2005 / The Patents Rules, 2003 as amended by The Patents (Amendment) Rules, 2016.

Rahul Meena

(नियंत्रक पेटेंट)
Controller of Patents

टिप्पणी / Note :

1. संशोधित नवीकरण शुल्क हेतु कृपया महानियंत्रक पेटेंट, अभिकल्प एवं व्यापार चिह्न की आधिकारिक वेबसाइट www.ipindia.gov.in पर उपलब्ध पेटेंट (संशोधन) नियम 2016 की प्रथम अनुसूची (शुल्क) देखें।

For revised renewal fees kindly refer to the First Schedule (fees) of The Patents (Amendment) Rules 2016 available on the official website of Controller General of Patents, Designs and Trade Marks www.ipindia.gov.in

2. कार्यालय द्वारा पेटेंट प्रमाणपत्र की कोई भी कागजी प्रति अलग से जारी नहीं की जाएगी।

No hard copy of Patent Certificate shall be issued separately by the office.



क्रम सं/SL No :011197107



पेटेंट कार्यालय, भारत सरकार | The Patent Office, Government Of India
पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. 508883

आवेदन सं. / Application No. 202111056238

फाइल करने की तारीख / Date of Filing 03/12/2021

पेटेंटी / Patentee INDIAN INSTITUTE OF TECHNOLOGY DELHI

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **SYSTEM AND METHOD FOR PROVIDING ENERGY MANAGEMENT IN COMMUNICATION NETWORK** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2021 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **SYSTEM AND METHOD FOR PROVIDING ENERGY MANAGEMENT IN COMMUNICATION NETWORK** as disclosed in the above mentioned application for the term of 20 years from the 3rd day of December 2021 in accordance with the provisions of the Patents Act,1970.



[Signature]

अनुदान की तारीख : 09/02/2024
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2023 के तीसरे दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।
Note - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 3rd day of December 2023 and on the same day in every year thereafter.