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Invention Title	SYSTEM FOR ADAPTIVE COMPRESSIVE SAMPLING AND METHOD THEREOF
Publication Number	32/2020
Publication Date	07/08/2020
Publication Type	INA
Application Number	201811030697
Application Filing Date	16/08/2018
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	H03M0007300000, H04L0027260000, G06T0009000000, H04L0029060000, G01N0001140000

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Abstract:

The present invention provides an adaptive compressive sampling system including a plurality of smart meters and a plurality of processing boards. The smart meters are configured to collect and transmit a plurality of data samples periodically. The plurality of processing boards correspond to the plurality of smart meters. The processing boards are configured to receive the data samples from the corresponding smart meters. The processing boards determine an optimum batch size (m) for compressing the plurality of data samples. The processing boards generate one or more compressed data samples of the optimum batch size (m) through adaptive compressive sampling. Thereafter, optimum channel overhead is added depending on the current state of communication channel and the compressed samples are transmitted.

Complete Specification

FIELD OF INVENTION

The present invention relates generally to bandwidth saving schemes in smart IoT communication, and specifically to system and method for adaptive data compression using adaptive compressive sampling in smart meters for reducing bandwidth requirement without compromising on reconstruction accuracy of the data.

BACKGROUND

Internet of Things (IoT) provides advanced way of managing and monitoring physical systems. The physical systems are closely coupled with electronic devices, such as sensors, that facilitate intelligent monitoring and management by use of internet and other communication technologies. Examples of such infrastructures include smart grids, smart homes, smart industries, smart water networks, and intelligent transportation systems. Each of these networks performs dynamic and real-time collection and transmission of data, storage, monitoring, and analysis of the data.

Typically, these networks comprise many sensors, transmitters, data collectors/aggregators, communication networks, and data management/analytical systems. The sensors are deployed over large scales, such as metropolitan or industrial scales, to receive, collect, monitor, and transmit various types of data. The data is collected at the data collectors which compress the data before transmitting over the communication network. The compressed data is received at the data management systems



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सं. \ No. 201811030697

दिनांक \ Dated the 25/04/2024

सेवा में, \ To :

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विषय :- पेटेंट आवेदन संख्या 201811030697 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. 201811030697

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 08/03/2024 को हुई सुनवाई] के उपरांत एतद्वारा पेटेंट अनुदान किया जाता है। तथा पेटेंट अनुदान की प्रविष्टि 25/04/2024 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 08/03/2024] a patent is hereby granted and recorded in the Register of Patents on the 25/04/2024. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No	: 535012
आवेदक का नाम \ Name Of Applicant	: Indian Institute of Technology Delhi
पेटेंट दिनांक \ Date of Patent	: 16/08/2018
पूर्विका तिथि \ Priority Date	: 16/08/2018
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filing date of Request for examination	: 07/08/2019
शीर्षक \ Title	: SYSTEM FOR ADAPTIVE COMPRESSIVE SAMPLING AND METHOD THEREOF
दावों की संख्या \ Number of claims	: 1-20
Controller' Name	: Mandeep goyal
Controller' Email	: mandeep.ipo@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.

Mandeep goyal

(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 :011208914



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. 535012

आवेदन सं. / Application No. 201811030697

फाइल करने की तारीख / Date of Filing 16/08/2018

पेटेंटी / Patentee Indian Institute of Technology Delhi

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित SYSTEM FOR ADAPTIVE COMPRESSIVE SAMPLING AND METHOD THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2018 के सोलहवें 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 FOR ADAPTIVE COMPRESSIVE SAMPLING AND METHOD THEREOF as disclosed in the above mentioned application for the term of 20 years from the 16th day of August 2018 in accordance with the provisions of the Patents Act, 1970.



Handwritten signature and Controller of Patents stamp

अनुदान की तारीख : 25/04/2024
Date of Grant :

Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अगस्त 2020 के सोलहवें 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 16th day of August 2020 and on the same day in every year thereafter.