Technological computing processes in system automation in the management of technological processes

Yo'ldoshova Hilola Baxtiyor qizi

Student of Nukus Mining Institute

ABSTRACT

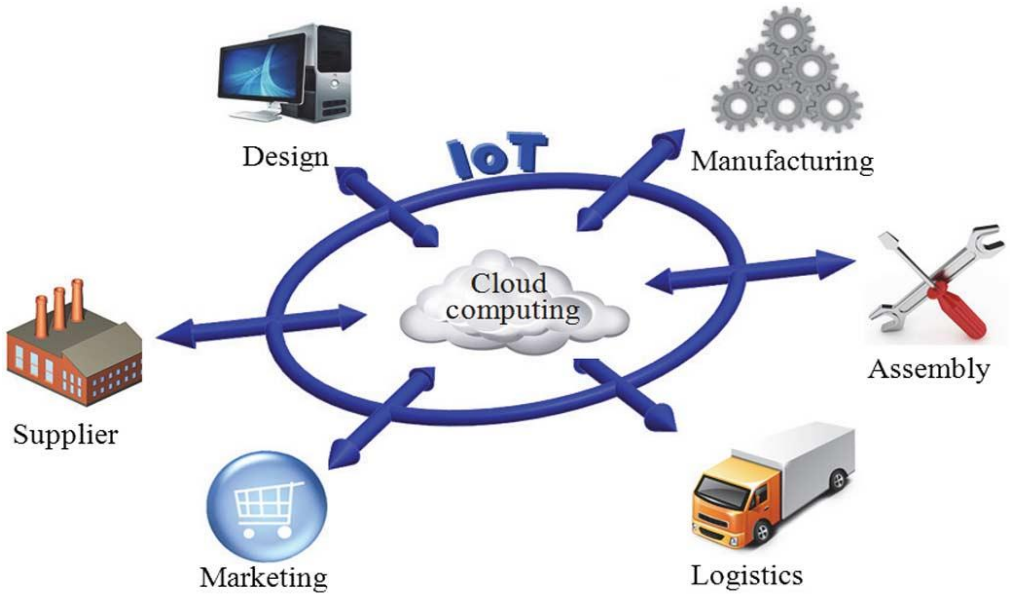
Personal after integrated circuit technologies computers and the Internet, the Internet of Things are the most advanced technological systems. in the Republic of Uzbekistan information technology (IT), which is fundamentally changing business, is used in most industries as an automated system of technological computing. However, the impact of IoT on the manufacturing sector not yet fully explored. On the other hand, there are difficulties in working with existing computerized software tools complexity, dynamics and uncertainties in their application causes errors in modern enterprises. IoT and cloud adoption are highlighted computing in enterprise systems overcomes the challenge. In this article, the difficulties in creating technological system assembly plans complex products are discussed. IoT and cloud computing proposed to aid in the development of a traditional assembly modeling system to an advanced system capable of dealing with complexity and changes automatically. Meeting to achieve this goal the modeling system is automated and the proposed system includes and the following innovations: 1) modeled architecture the system is robust, reliable, flexible and scalable. 2) unified object-oriented templates to facilitate interfaces and reuse system components. 3) Automated algorithms for calculating technological system schemes relational assembly matrices are shown for assembly planning.

Keywords: Technical system modeling, cloud computing system, computerized manufacturing system, computer-aided process planning and automation, Internet.

Introduction

Traditional enterprises with a technology system architecture, e.g as a computer integrated production, it is no longer capable dynamic handling of high levels of complexity and turbulence environment is entering the stage of rapid development. Many production paradigms, such as technologically automated systems of enterprises will have production and sustainable production results and in technological systems proposed a solution to these problems. However, the implementation of the new paradigm relies on infrastructure and recognized as information technology. IT technologies and innovations, including the newly developed Internet of Things (IoT). measures to stimulate production technologies are being implemented. According to the law of computer-aided control of technological systems, processing speed and computing memory doubles every 18 times. Integration after major breakthroughs circuits, personal computers and the Internet, many speculators we believe that the next IT revolution is IoT. An

interactive network becoming billions or even trillions of observed objects possible Direct interactions between objects are possible and people quickly and easily adapt to this development. Successful applications of IoT have been demonstrated in retail, logistics, military, environmental control and healthcare. Real time in these applications data can be collected by many sensors and data can be distributed by the network to support decision making. However, the potential of IoT in many areas, including design and operation production systems have not yet been systematically studied. Cloud computing is an important technology to support the decision-making system of IoT-based applications. Hybrid application integration issues cloud computing environment was discussed by O'telbayev Azizbek et al. Architecture to support distributed enterprise operations It was investigated by Azizbek et al. To whom Developed a simulation platform as a computational tool for designing, establishing a better relationship between the client and the server. He offered him a parallel method and dealing with scheduled services based on service selection and energy conservation in cloud manufacturing cloud production is launched. Despite the rapid development of IoT, there were many challenges and has risen to adopt IoT in various applications. Environmental intelligence, major technological innovation will be needed fulfillment. These include governance, standardization interoperability and efficient and an example is secure communication protocols. Today's business models mainly based on static information architectures; these are models face difficulties when the data collected is dynamic and difficult to predict. A successful IoT application must and it is necessary to develop a system capable of supporting decision making on complex objects.



Picture 1. An IoT application for assembly modeling and planning.

Tasks of the technological system for production enterprises achieving system capability in dealing with complexity and enable decentralization of decision-making activities Assembly modeling should be modular, in a decentralized system and will be related to the automated system. IoT provides a solution to these problems. On the one hand, a private cloud or a hybrid cloud can be installed thus, users can access any information regardless of how and where it is about the geographical distribution of suppliers data dynamics, IoT connects all objects together, they monitoring and real-time data collection is possible. Inaccuracies are possible should be identified to support optimized decision making. Above on the other hand, IoT uses a service-oriented architecture. The distributed

tools available in IoT are modular and interoperable. They can be combined to complete some making complex decisions when necessary. As shown in Picture 1, IoT provides access to distributed information from all data vendors associated with collection processes. Server for collection modeling and planning in a private or hybrid cloud are considered as an IoT entity; that is, assembly will be modeling and planning can be done through cloud computing. Cloud computing is a global infrastructure environment that provides complex infrastructure resources for tasks and IT services. Google Drive, Dropbox and Microsoft Azure Examples of cloud computing are provided. Demonstrates a comprehensive framework for cloud computing in terms of technology system models, structures, and methods. It is stated that 10 billion IoT devices will be connected to the Internet in the Republic of Uzbekistan in 2018 by 2020. According to their statement, and now that we are in 2021, we should have faced more than that. It envisages 10 billion IoT devices continuously generating data. This is due to high latency and Cloud computing cannot be used to process generated data. Therefore, Cloud Computing is not an efficient solution for deploying IoT applications and processing data. Technological system management defines automation and automatic processes in industry. By definition, automation is any task, method, technique, algorithm, process and control that makes it possible minimizing human intervention and assistance. An important advantage of automatic processes are to minimize delay at any point where a human decision is required and tasks are suspended when human action is still not performed. Detects and designs as more devices and IoT sensors are added to the ecosystem data processing and automatic components to manage such big IoT data tasks will be important and relevant. Cloud computing suffers from high latency and many IoT and rely on applications to process on-demand and make real-time decisions. A cloud-based system scheme is not a suitable solution. In addition, real-time and time-sensitive features of Industry 4.0 IoT applications are considered. Makes the cloud a poor option for hosting. Thus, processing data in a Cloud environment is the preferred solution.

Conclusions

The success of a technological system in production applications depends on it we can observe the development of Decentralization, modularization and automation of technological systems helps to master the emerging IoT. Could be IoT used to support decision-making in all sectors and levels. It should be designed to take into account the strengths of the technological system and IoT can be fully exploited. In this article, an automated system for assembly modeling of complex products is discussed. Object-oriented model templates are proposed to meet the new requirements of the technological system built on IoT infrastructure. A technological management system assembly planning program should be developed. It takes advantage of object orientation methods and binds to product template methods. It suits him very well, can be used in distributed and decentralized environments. Entities involved in the product template are encapsulated and that's it facilitates reuse and modularization of assembly components and provides an opportunity to manage information systems. In addition, assembly modeling for complex product is automated. The system can take Automatic assembly of relational matrices from CAD models of can be product, assembly sequences and exploded views is formed from the summation relation matrices with oz manual intervention. Algorithms for contact and noise relationship matrices were reviewed in detail. It also motivated the development of these algorithms lack of existing methodologies in structure representation and learning about collection relationship models. Combines the proposed matrix for assembly relations and contact relationships and connection relationships between functional parts and consists of additional parts. EHM solves the previous problem and the interference matrix

was not used to analyze the parts, voluntary directions are cited. The creation of assembly relationship matrices is based on the analysis and creation of static interactions based on dynamic noise analysis in the system. Developed the collection scheduling system can interact with the server the UG NX CAD/Cam system meets the requirements of direct and decentralization, modularization and automation. Customization of IoT infrastructure. The report is preliminary; our next effort will explore cloud computing to support automated assembly modeling of complex products. O'telbayev Azizbek, a student of the Nukus Mining Institute at the Navoi State University of Mining and Technologies, is studying the process of testing technological applications used in mining enterprises. These applications ensure process quality and process safety in mining enterprises. Many of Azizbek's scientific studies and articles about his activities in mining enterprises were published in magazines. Currently, Azizbek is engaged in web sites. Research has been exploring the use of automated web applications in mining operations.

References

1. Qizi, Y. H. B. . (2023). Setting the Time Mode in the Process of Automating Robots. Pioneer : Journal of Advanced Research and Scientific Progress, 2(4), 37–46. Retrieved from https://innosci.org/jarsp/article/view/1133
2. Qizi, Y. H. B. (2023). Use of Wireless Technologies in the Automation of Technological Processes. International Journal on Orange Technologies, 5(4), 7-16. Retrieved from https://journals.researchparks.org/index.php/IJOT/article/view/4256
3. Qizi, Y. H. B. (2023). Use of Wireless Technologies in the Automation of Technological Processes. International Journal on Orange Technologies, 5(4), 7-16. Retrieved from https://journals.researchparks.org/index.php/IJOT/article/view/4256
4. Yo'ldoshova Hilola Baxtiyor qizi. (2023). AUTOMATION OF WORK WITH E-MAIL AND ROBOTICS SYSTEM CONTROL SYSTEM. INTERNATIONAL BULLETIN OF APPLIED SCIENCE AND TECHNOLOGY, 3(3), 394–404. https://doi.org/10.5281/zenodo.7776607
5. Yo'ldoshova Hilola Baxtiyor qizi. (2023). MANAGEMENT OF THE SYSTEM SCHEME OF AUTOMATION OF ROBOTIZATION PROCESSES. INTERNATIONAL BULLETIN OF ENGINEERING AND TECHNOLOGY, 3(3), 183–193. https://doi.org/10.5281/zenodo.7776593
6. qizi, Y. H. B. . (2023). Stages of Modern Technological Development of Automation of Robotization Processes. Miasto Przyszłości, 33, 284–293. Retrieved from https://miastoprzyszlosci.com.pl/index.php/mp/article/view/1233
7. Yeshmuratova A. MINE BLASTING PROCESSES OPTIMIZATION STAGES OF DIGITAL TECHNOLOGY OF DETONATORS //Scienceweb academic papers collection. – 2023.
8. Eshmuratova A. A. MATCAD DASTURIDAN FOYDALANIB IKKI VA UCH OLCHOVLI GRAFIKLARNI QURISH //Journal of Integrated Education and Research. – 2022. – Т. 1. – №. 5. – С. 534-539.
9. Yeshmuratova A. et al. ENSURING COMPUTER DATA AND MANAGEMENT SYSTEM SECURITY //International Bulletin of Applied Science and Technology. – 2023. – Т. 3. – №. 4. – С. 282-287.
10. Yeshmuratova A. TECHNOLOGICAL METHODS OF ENSURING INFORMATION SECURITY IN TECHNICAL SYSTEMS //Евразийский журнал академических

исследований. – 2023. – Т. 2. – №. 4. – С. 188-192.
11. Утемисов А. О., Юлдашова Х. Б. К. СИСТЕМЫ АВТОМАТИЧЕСКОГО УПРАВЛЕНИЯ //Universum: технические науки. – 2022. – №. 5-2 (98). – С. 45-47.
12. Kaipbergenov A. T., Utemisov A. O., Yuldashova H. B. K. STEADY OF AUTOMATIC CONTROL SISTEMS //Academic research in educational sciences. – 2022. – Т. 3. – №. 6. – С. 918-921.
13. Kaipbergenov, A., & Jumamuratov, R. (2019). The methodology of teaching chemistry based on the use of computer programs.
14. Bekturganova, Z., & Jumamuratov, R. (2017). МЕТОДЫ ОБУЧЕНИЯ САМОСТОЯТЕЛЬНОЙ РАБОТЕ УЧАЩИХСЯ НА УРОКЕ ХИМИИ.
15. Aynazarova S. KIMYONI O'QITISH VOSITALARI TIZIMI VA UNING DIDAKTIK IMKONIYATLARINI O'RGANISH //Scienceweb academic papers collection. – 2021.
16. Саидова Л. Ш. и др. АНАЛИЗ ИССЛЕДОВАНИЙ ПО ПОДЪЕМУ ГОРНОЙ МАССЫ ИЗ ГЛУБОКИХ КАРЬЕРОВ И ВЫБОР ГОРНОТРАНСПОРТНОГО ОБОРУДОВАНИЯ ДЛЯ ОТКРЫТЫХ ГОРНЫХ РАБОТ //Eurasian Journal of Academic Research. – 2022. – Т. 2. – №. 11. – С. 811-816.
17. Xolmatov O. M. et al. MURUNTAU KONI OLTINLI RUDALARINI UYUMDA TANLAB ERITISH USULIDA O'ZLASHTIRISHNING GEOTEXNOLOGIK SHAROITLARINI O'RGANISH //Eurasian Journal of Academic Research. – 2022. – Т. 2. – №. 11. – С. 790-797.
18. Saparov A. B. et al. Analysis Of the Effect of The Physical Properties of Liquids on External Forces (Factors) //Texas Journal of Multidisciplinary Studies. – 2022. – Т. 5. – С. 111-114.
19. Jumabayeva G., Allanazarov B., Joldasbayeva A. STAGES OF OPEN PIT MINING. MINING METHODS AND THEIR PROCESSES //Science and innovation. – 2023. – Т. 2. – №. A1. – С. 236-240.
20. Allanazarov B. GEODETIC DIMENSIONING STUDIES AND POINT-DIMENSION LOCATION COORDINATE SCHEME CREATION PROCESSES //Евразийский журнал академических исследований. – 2023. – Т. 2. – №. 4 Part 2. – С. 21-25.
21. Djaksimuratov K. et al. Comprehensive monitoring of surface deformation in underground mining, prevention of mining damage //Modern technologies and their role in mining. – 2021.
22. Djaksimuratov K. et al. FACTORS INFLUENCING THE CONDITIONS OF OPEN PIT MINING //ORE MASS AND DEFORMATION, PROCESSES THAT LEAD TO IMBALANCE DURING EXCAVATION. – 2021.
23. O'telbayev A. STRENGTH PROPERTIES OF ROCKS AND FACTORS INFLUENCING THEM AND THE PROCESS OF CHANGING THE PROPERTIES OF ROCKS.«BEST INNOVATOR IN SCIENCE-2022» Organized by Innovative Academy. – 2022.
24. Ravshanov Z. et al. EVALUATION OF THE STRENGTH OF ROCKS IN OPEN MINING PROCESSES IN MINING ENTERPRISES //Science and innovation. – 2023. – Т. 2. – №. A4. – С. 96-100.
25. Ravshanov Z. et al. METHODS OF DETERMINING THE SAFETY AND ENVIRONMENTAL IMPACT OF DUST AND EXPLOSION PROCESSES IN MINING ENTERPRISES //International Bulletin of Applied Science and Technology. – 2023. – Т. 3. – №. 4. – С. 415-423.
26. Mustapaevich D. K. Ravshanov Zavqiddin Yahyo o'g'li, Ergasheva Zulxumor Abdaaliyevna, O 'razmatov Jonibek Ikromboy o 'g 'li, & O 'telbayev Azizbek Alisher o 'g 'li.(2022). Underground mine mining systems and technological parameters of mine

development //INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & INTERDISCIPLINARY RESEARCH ISSN. – С. 2277-3630.
27. Arzuev, H., Najmova, N., Sharipova, A., Seytnazarova, O., & Abdikamalova, A. (2023). INVESTIGATION OF THE ADSORPTION ACTIVITY OF A MICROSPHERE - WASTE FROM A THERMAL POWER PLANT.
28. Najimova N., Utepbaeva G., Urazbayeva A. WATER ELECTROLYSIS STUDIES AND CHEMICAL TECHNOLOGICAL DESCRIPTION //International Bulletin of Applied Science and Technology. – 2023. – Т. 3. – №. 4. – С. 509-513.
29. Najimova N. GENERAL INFORMATION ABOUT CHEMICAL PROCESSES AND REACTORS //Евразийский журнал академических исследований. – 2023. – Т. 3. – №. 3 Part 3. – С. 28-37.
30. Bazarbaevna N. N. GENERAL INFORMATION ABOUT CHEMICAL PROCESSES AND REACTORS. EURASIAN JOURNAL OF ACADEMIC RESEARCH, 3 (3), 28–37. – 2023.
31. Paxratdinov , A. D., & Abdiramanova , Z. U. (2023). ELEKTR ENERGIYA SAPASIN ELEKTR ENERGIYA ISIRAPINA TÁSIRIN ÚYRENIW HÁM HARAKTERISTIKALAW. Educational Research in Universal Sciences, 2(1 SPECIAL), 233–236. Retrieved from http://erus.uz/index.php/er/article/view/1793
32. Ҳайитов О. Ғ. и др. ЧУҚУР КАРЬЕРЛАРДА КОН ЖИНСЛАРИНИ АВТОМОБИЛ ТРАНСПОРТИДА ТАШИШ ИШЛАРИНИ ҲИСОБЛАШ //Eurasian Journal of Academic Research. – 2022. – Т. 2. – №. 11. – С. 798-803.
33. Yo'ldoshova Hilola Baxtiyor qizi. (2023). Use of energy-saving operational technological systems in automation processes. The Peerian Journal, 16, 60–70. Retrieved from https://www.peerianjournal.com/index.php/tpj/article/view/515