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INFRASTRUCTURE AND ECOSYSTEM OF THE CUSTOMS WORKSPACE

*Transformation of the infrastructure and
ecosystem of the customs workspace
into a smart integrative system*

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Infrastructure and Ecosystem of the Customs Workspace /
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This work presents an approach for transforming the components, subsystems, and overarching infrastructure of smart, flexible automated production facilities and smart mobile homes, including customs inspection workspaces, into fully integrated intelligent systems. The methodology combines hardware, software, and analytical tools, incorporating artificial intelligence (AI) and artificial neural networks to enable horizontal and vertical integration of infrastructure elements. Key innovations include real-time monitoring via electromagnetic resonance spectroscopy, advanced materials such as diamond-copper composites for thermal management, directed electrolytic metallization for printed circuit boards, and high-speed electronic processing technologies compatible with quantum computing.

The approach applies the Theory and Algorithm of Inventive Problem Solving (TRIZ) for systematic analysis, evaluation of originality, patentability, and global novelty of all infrastructure and inspection system elements. These methods guide the creation of provisional and utility patent applications in the United States, supporting robust intellectual property protection throughout the innovation lifecycle. The integration of mobile applications and software solutions into technical systems facilitates the evolution of classical technologies into smart technologies, producing high-demand innovative products. The strategy also emphasizes investor and strategic partner engagement, providing detailed disclosure of technological and innovative advantages while ensuring legal protection of the underlying technical solutions.

Overall, the methodology combines inventive problem-solving techniques, advanced materials, AI-enabled systems, and integrative patent strategies to develop, protect, and commercialize smart infrastructure and mobile home technologies.

Keywords: *Supersystem of the infrastructure and ecosystem of the customs workspace and its transition into an advanced smart integrative combined system; Subsystem of the infrastructure and ecosystem of the customs workspace and its transition into an advanced smart integrative combined system; Transformation of complex constituent parts, supersystems, and subsystems of infrastructure; Metallization in a directed electrolyte flow; Emergence of the edge effect; Production of electronic printed circuit boards for modules and control and monitoring units of a smart mobile home; Engineering, technology, and design in the formation of structural systems and infrastructure inherent in smart manufacturing and a smart mobile home and its equivalents*

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APPARATUS AND METHOD FOR...

The title of the proposed invention should include not only a concise definition of the technical solution but also a very brief commercial characterization of its impact on the market within the scope of the proposed technical solution. The title must not contain any promotional terms, such as “efficient,” “best,” etc.

It is very important for the title to reflect the market situation at the time of filing the application. If the authors, their companies, or financial partners intend to attract additional investment for the project, based on the claimed technical solution, it is advisable to take into account the known technological and commercial interests of potential partners in the title.

Since proof of non-obviousness is of critical importance for a U.S. patent examiner, it is essential that the criteria and nature of non-obviousness are considered in the invention’s title.

Technical systems related to so-called smart technologies and equipment typically include a software component, which by itself is not a technical solution and cannot be classified as a technical system.

However, since software solutions form the basis of control and management systems for any modern smart technology, this must be reflected in the title. Thus, the title should be presented in the form: “Device, Program, System, and Method” or “Apparatus, Program, System, and Method.”

Additionally, when classifying a technical system as a smart system with elements of artificial intelligence and artificial

neural networks, it is necessary to include information storage devices with sufficient capacity and performance.

This factor should also be reflected in the title, for example: “Apparatus, Program, System with Memory Storage, and Associative Method of Use.”

REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the priority benefit under 35 U.S.C. § 119(e) of U. S. Provisional Application Nos. 61/, filed; and 61/, filed. The entire disclosures of each of these applications are incorporated herein by reference.

This section provides information on all provisional patent applications that were filed by the inventors or the applicant prior to the preparation and filing of the present application.

If no U.S. provisional patent applications were filed, this section provides information on all previous applications related to this subject matter and technological field that were filed by the inventors or the applicant (either by the inventors of the present application or on behalf of other inventors) prior to the preparation and filing of the present application.

TECHNICAL FIELD

[0002] The invention relates to apparatus and methods for...

... this section provides a description of the technical field and technology to which the claimed technical solution pertains. The classification within a particular technological field must be clearly and thoroughly justified, linked to the distinguishing features of the claimed technical solution through

cause-and-effect relationships, and expressed in terms understandable to a practitioner of average skill in the field. If the distinguishing features of the claimed technical solution are obvious in one field but non-obvious in another, this should be explicitly addressed, providing an analytical explanation of the phenomenon.

It is especially important to describe problems and contradictions that are characteristic and apparent in the chosen technological field for the invention, and to extend this analysis to the broader technical field to which the claimed solution belongs.

Since, unlike the European Patent Office, the United States may grant a patent under certain conditions for a computer program, it is advisable, where applicable, to present the claimed technical solution as an integrated solution in the form of “Program, System, Method, and Apparatus” for its implementation.

DESCRIPTION OF THE RELATED TECHNOLOGY

[0003]

... this section consists of two parts. In the first part, a more specific, detailed, and localized analytical assessment is provided of the technical field and technology to which the claimed technical solution pertains. A description is given of the most characteristic features of the technology, including its known advantages and disadvantages ...

[0004]

... in the second part of this section, it is advisable to begin identifying and preliminarily analyzing general contradictions that are well-known and characteristic of the technology to which the inventors attribute the claimed solution ...