

¹ K.Saranya,
² R.Ramya,
³ M. Jamuna Rani
⁴ A.Yogeshwaran
⁵ S.S.Rajasekar
⁶ S.N.Sangeethaa

IOT Based Health Preventive Management System for Patient information discovery Using Ontology



Abstract: - Over the years, advancements in the work have been incorporated towards the patient's relationship and data collection techniques to model a wide variety of human activities and behaviors. Sensor data comes from smart devices that provide the ability to manipulate data from monitoring data for patient healthcare. Due to the high popularity and use of smart devices as respondents, performance recognition systems are more accurate and easier to use. The knowledge model is based on two new approaches: to consider a functional degree scheme between measuring sensor energy and functional consciousness to mode controversial sensor data and establish the relationship between them. In this article, we make a case why ontology can contribute to blockchain design. To support this issue, this research proposes an ontology middleware that analysis and exploits ontology and some of its representations into the smart contracts that enable it to implement patient traceability restrictions on the original traceability feature platform.

Keywords: Ontology, IoT, patient healthcare information, semantic integration, UTM, Information retrieval

I. INTRODUCTION

An interesting practical and theoretical problem in our big data era is a problem of commitment Resources [1]. There is a research team that is interested in solving this problem the ontology engineering community, which is actively investigating the development of ontology to prove knowledge. Ontological Regular representation of the engineering community and due diligence Information about the Internet can be considered stable because it requires data to build evidence. In addition, semantic networks technology facilitates synchronization and modeling of the workflows [2] and results required for the web the origin of knowledge. Perhaps a measure of consistency of artifacts that lacked it easily expandable and readily available digital footprints or convenience technologies are not sustainable. Tracks or authenticates pharmaceutical ingredients here are some examples of luxury bags. Given this, it is true that UPS can track it with accuracy judging such packages, granular championships, is often impossible with today's article [3]. They are developed and transferred to complex, inter-organizational, and often international network supply chains.

¹ *Corresponding author: Associate professor, Department of Computer Science and Engineering, Bannari Amman institute of technology, Sathyamangalam, Tamilnadu, India. Email Id: ksaranyacse@gmail.com

² Assistant Professor, Department of Information Technology , Dr.N.G.P Institute of Technology, Coimbatore, Tamilnadu, India. Email: ramyakrishnan15.r@gmail.com

³Associate Professor, Department of Electronics and Communication Engineering , Sona College of Technology, Salem. Email: jamuin2003@gmail.com

⁴ Assistant Professor, Department of Electronics and Communication Engineering ,Dhanalakshmi Srinivasan Engineering College (Autonomous), Perambalur, Tamilnadu, India- 621212. Email: er.yogesh85@gmail.com

⁵Associate Professor, Department of Computer Science and Engineering ,Bannari Amman Institute of technology, Sathyamangalam,Tamilnadu,India. Email: ssrajasekar80@gmail.com

⁶Associate Professor, Department of Computer Science and Engineering ,Bannari Amman Institute of Technology, Sathyamangalam, Tamilnadu,India- 638 401. Email: dr.snsangeethaa@gmail.com

Correspondence Mail: ksaranyacse@gmail.com

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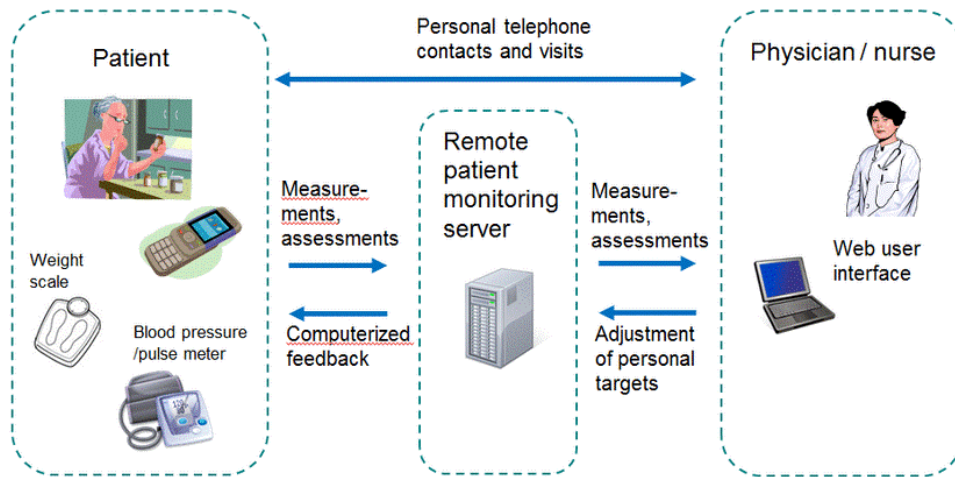


Fig 1: Health IoT Ontology Building for patient information

The purpose of this paper is to elevate one person. Keeping people at home and developing online communication skills and always have some encouragement and help. More than they valued the outcome of our actions, especially the following:

1. We indicate the step with the representative Learn the basics and learn from one of the most common method modes. Someone who loves sports and the ability to use this information to improve encouragement of things to come the first way to gather an adult in a house of three.
2. We have increased the value of the data defined by the common information system It is an expert in the field and converts content into data Network support available with services and other services;
3. Think north infill using real data. Its operations have been proven and successful. The future of that person an action model is used to provide guidance and motivation the end of mankind, Figure 1 shows a high-resolution image all sections of the work are arranged as follows.

Group 2 Evaluate appropriate activity on safety standards and household chores in our approach. The third section describes our goals and discusses clarity and physician decisions.

Part 4 see our message on other types and functions are concluded with some interesting documentation for future research.

In Figure 2 the IoT Crawler framework provides crawlers and search engines that identify the sources of IoT data streams in multiple domains.

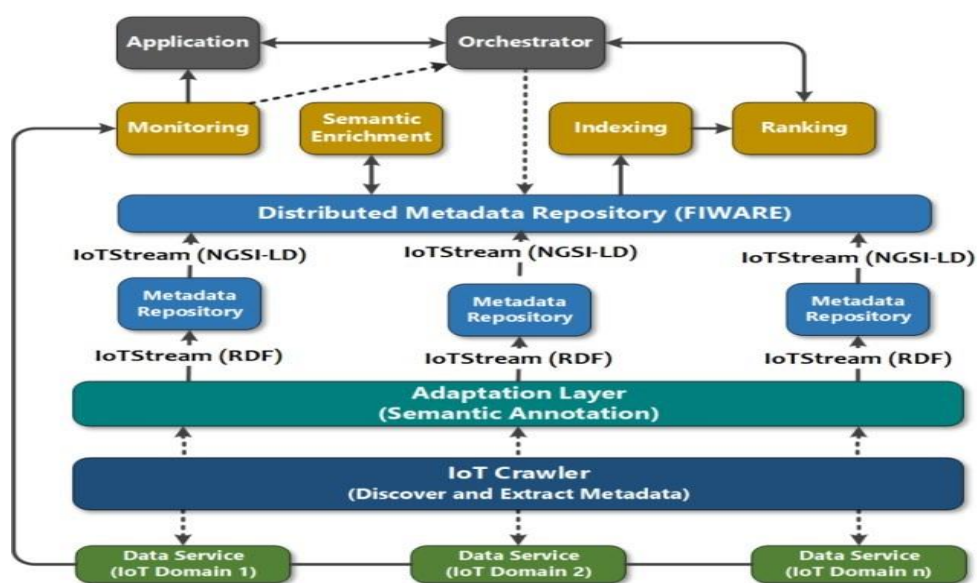


Fig 2: IoT Ontology High-Level Architecture

II. LITERATURE REVIEW

Several ways have been suggested to use mobility data to understand the wording of health care. Then we introduce food Literature with classification of methods of their application. Some papers offer scientific publications on the computer system. Explore different repositories for gynecological and semantic data, manage health care, view known mental health services applications, and analyze data mining and analysis. Synchronizing the effects of using Nintendo Wii Exercising [4] in the elderly, it is concluded that there are safer and more practical ways to engage in exercise than improving physical, intellectual and mental performance.

Other technologies include spatial data analysis, data collected from the beginning, images and other monitoring equipment. Temporal component-pattern of behavior - livestock etc., here you can get the functionality of the data from the various sensors in the apartment by learning the passive format. Common sense shapes are mundane but it is not considered [5].

It is the result of a strong foundation in a behavioral model. Analyze local behaviors to get local information about attractions and workplaces (walking and indoor places). Behavior develops over time, especially in each of them - Planck and others. Uses column mode or passive profiles and types of activities throughout the day. The authors of considered the document to be correct based on their interpretation of the words.

He says the system is based on the biology of magnifying similar documents. Download the application results using a graphing calculator to communicate with users. In the article, the authors introduced a method of oral questions in a database of broad relationships. Create a gynecological layer. The schedule is a modified packaging relative database oncology scheme with international grammar. Dissertation provides access to gynecology and the majority of views.

The main idea is to get the right information and create passports. There have been several attempts to use chemotherapy and medical chemotherapy; they both did a great job, achieving the best recovery results of all the instant messengers. Artificial data is called a traditional web. Sorry for the change, the current data is stored in an appropriate database in RDF format, which is typical All Wide Web (W3C) hardware monotonous and erroneous. [6]. Produced by a rapper who works as a translator of semantic questions about systems and pseudo- statistics. In these databases, replace existing genetic data in proportion to those available to immigrants. Database ontology is based on the RDF format. As a standard text file [7] RDF has some restrictions and other side take advantage of the powerful communication model and features of the RDF format[8].

III. BASIC TERMINOLOGIES ON ONTOLOGIES

Over the years, many different biomedical lexicographers have introduced it. Full description of proper treatment and reproductive organs. Among these are: Anatomy First Model (FM), SNOMED-CT, Integrated Medical System; (Cristian 2005), International Classification of Diseases (ICD) -11, and Open EHR (Compton 2012). FM stay oncology describes the study of human nature. FM It consists of more than seventy- five groups of artificial intelligence, from small to large cells [9]. It contains about two hundred thousand words and more than 2.1Millions of relationships occur in more than two hundred racial groups. Invalid connections. "FMA was developed by Structural Information Group (SIG)The University of Washington is currently 4.12, and its rating is OWL.SNOMED-CT (Women's Traditional Medicine System]" meets the requirements electronic Health Registration Terminal (EHR) The purpose of SNOMED-CT is to provide code first used in health information to improve clinical treatment records and using SNOMED-CT in a patient's health system results in consistent patient care information collaborate with a service contract without the use of electronic media, so it can increase stress there are different types of health information [10][21].

The United Nations Language System is a multidisciplinary field laws and guidelines reinforced by the American National Medical Library UMLS specializes in biomedical terms and connects more than two million names to 200,000 About ten million links between ideas and these ideas. Most are words included in UMLS are SNOMED-CT, ICD-10, Medical Professionals (MES), and others. IDR, It is a well-known tool for diagnosing all common diseases and contains many health care and medical use. IDN It was originally created to record the cause of death, but it is always the same. Added to coordinate the analysis of the general characteristics of many and other groups Health problems related to other symptoms such as weight loss, compensation, etc. Open EHR

provide an open environment for integrated health information Facilitates collaboration between health information systems and health organizations. Open EHR describes the storage, storage, retrieval, and exchange of EHR quality data. Open EHR is based on two types of data: architecture (AI) system from certificate type and a structured model (RMA) of the EIA. No, they clearly explain the types [11][23].

IV. MODELING FOR UTM CLINIC BASED ON ONTOLOGY

Ontology is a detailed description of theories and relationships. It plays a key role in the internet network It promotes applications by providing general knowledge of things in the real-world reuse between different copies. Therefore, the interpretation must be the first focus Interpretation of applications for this study; we designed the UTM Clinical Otology Training during the survey [12]. They are a unit of the UTM clinic and the individual, staff and patient's department Male; in addition, doctors and assistants are subdivisions. Exciting points the patient is shown in the picture. However, they can be human and patient Divided into different functions such as name, name, height, and weight.

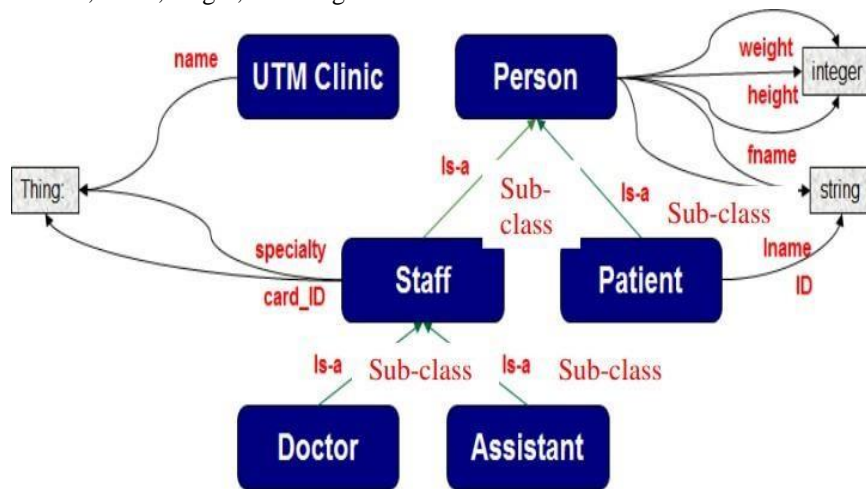


Fig 3: Case: our study shows a general idea

Figure 3: Case: our study shows a general idea. E Activity and dependence here lessons and things have been analyzed. Has UTM clinic staff. The doctor and his assistant are a mirror of the staff. Due to the extensive work of the physician, the cooperation of an assistant is required care for the patient There are four main tasks the doctor performs to see the patient medical examination, consultation, research, or ideas. It can also be human if the patient is human can get sick.

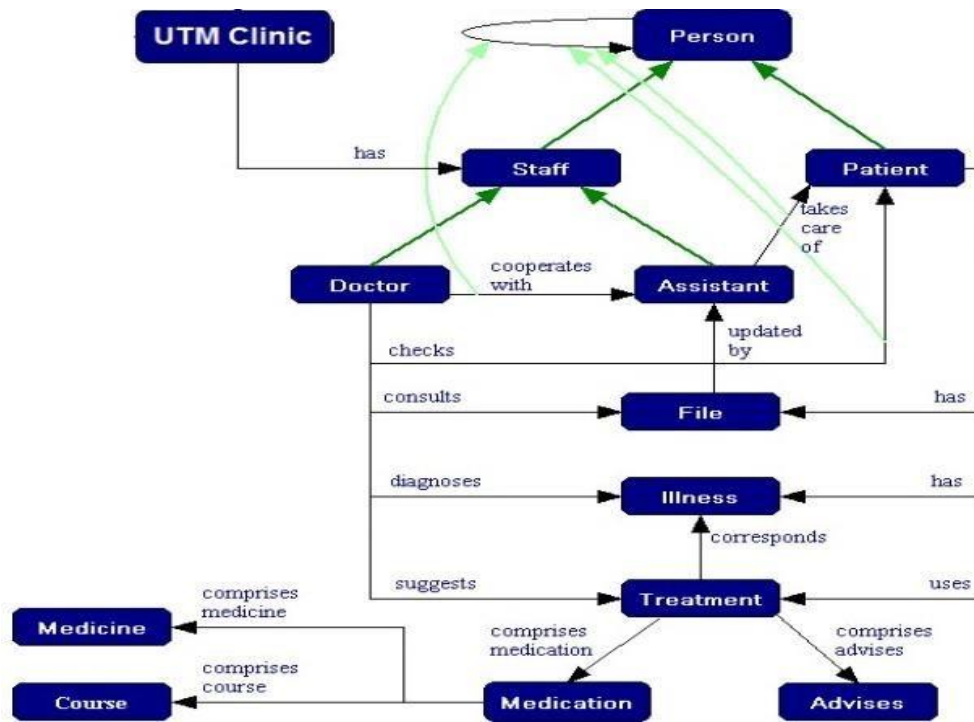


Fig 4: UTM Clinic Ontology Representation

4.1 CHANGE OF DETAILS

The main purpose of “Aligned Data” is to map movement control data it is given as an introduction to each class in Ontology and finally a JAVA object become a semantic project manager. The problem with JAVA is that there are related areas and how to help the cheating class with other helpers’ method. Everything can be serialized, so it can be converted quickly JSON and interact through UI prompts than from the creation of the Ontology class to JAVA it is the creation of JAVA Important database tables are also needed, to store everything that is important energy bank information. JAVA API works with that client build and archive data generated by the pilot details of processes and applications through the Interface feature. Mapping JAVA objects for database tables are executed using the JAVA Persistence API (JPA). JPA API authorizes mapping, storage, updating and data access on district center for JAVA objects and vice versa.

4.2 PERSONAL ADVICE

Give special advice, rather than time senior ontology movement, there are some rules laid down for each of them people. Length, distance, speed is included in these rules and older types are deleted in the save path (i.e. active hour, speed, journey or walk, these principles, everyone’s behavior is reflected in context and thus, can be used to express individual proposals according to their own the story is moving. Indeed, principle-based systems have been widely used in applications requiring special services. Even SPARQL search language, provides a lot of power to censor personal information character. The SPARQL standard is then used to define certain maintenance functions according to the circumstances of the parents. In particular, Semantics the Interoperability Agent takes the M Mobility Tracks introduction and delivers as a result line R.

Special Announcements for individual episodes, the algorithm detects the presence of people in a room and in a series of events use special rules. Then, an algorithm records a series of events, dates and types in Moving Sequence. If Moving Sequence is always set, the algorithm reverses the sequence Game-specific suggestions that provide practice encourage older people. On the contrary, as shown Moving Sequence is unused, the algorithm repeats the sequence itself mental game suggestions.

ALGORITHM 1: IOT ONTOLOGY SEMANTIC AGENT BASED ALGORITHM

```

INPUT: A SET OF MOBILITY TRACKS M
Output: A set of Personalized Recommendations R
1 Begin
2 /*The Semantic Interoperability Agents receives Mobility
Tracks as input*/
3 foreach (Mi ∈ M) do
4 P ← LookupPeoplePresence(Mi)
5 W ← LookupWalkingMovement(Mi)
6 foreach (Pi ∈ P) do
7 if OnAlone(Date (Pi)) ∈ Date(W) then
8 MovingSequence ← Concat(W, Date (Ri), type)
9 end
10 /*Personalized Recommendations are sent as output*/
11 if IsEmpty(Lookup(MovingSequence, P)) then
12 return(R ← Walking(Activity Type))
13 end
14 else
15 return(R ← Mind(Activity Type))
16 end
    
```

V. ARTISTIC SEMANTICS ONTOLOGY FOR MODERATE

While using IoT sensor technology, better health care is carried out with HER More progress has been made in the process of collecting, managing and sharing patient data, another appropriate example of the integration of flexible and other mechanical devices into the EHR Strengthen health [13][22]. The purpose of the image is to improve the maintenance of the IoT system EHR for active data can be used for treatment or other interventions. The image of the layout image is shown in Figure 5.

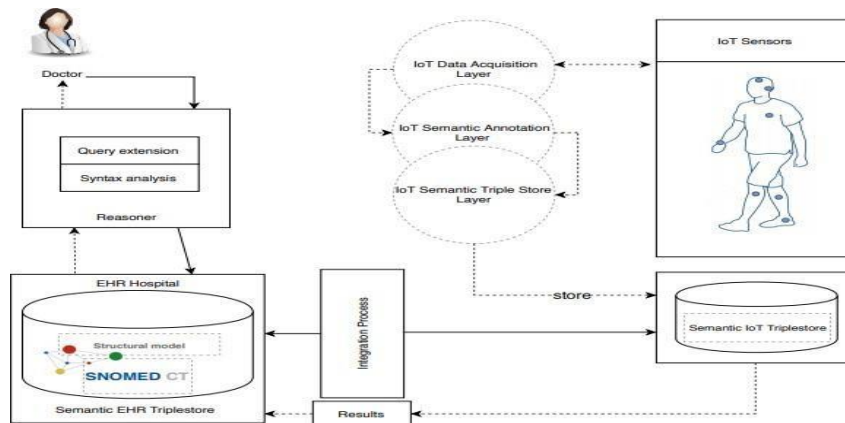


Fig5: Semantic Middleware Architecture.

5.1 IOT SEMANTIC TRIPLESTORE

To deal with increased data storage with make sure to share information between them the IoT health care information system and EHR recommend the third IoT semantics identifies data collected by IoT health devices and sensors; It consists of three parts:

- IoT aggregation cluster

- IoT class advanced IoT
- IoT semantic storage section

This class has a number of devices for receiving information and sensors and record data. The information received will be changed according to important considerations the structure is described in the next section. This course maps the data record in OWL ontology form using SSN ontology because SSN technology enables data [14]. This class is responsible for storing weekly anonymous data to three. The semantic trimester should store aggregate data when used in the model IoT provides semantic classes for notation. With the sensor data as it is brought in, the algorithm is validated Steps to take in using IoT data in a semantic trilogy. Purchase process map numbers described in algorithm sequences Semantic software developer for relational ontology software As IoT sensor technology, better health care is taken with HER system for the collection, management and sharing of patients' health records has become more advanced. The next appropriate step to integrate is to integrate engines and other components into the HER promoting health. The purpose of the image is to improve the maintenance of the IoT system HER for active data can be used for treatment or other interventions. The concept program for Semantic intermediate has three components: semantic HER ,semantic store IoT and descriptive features.

5.2 SEMANTIC IOT TRIPLE STAR

The semantic trilogy for IoT data in healthcare includes the following:

1. Ability to share information about health information systems, such as the EHR system;
2. To deal with increased data storage. Make sure to share information between them The IoT Health care information system and the EHR system, the third semantic IoT, are recommended identifies data collected by IoT health devices and sensors.

IoT sensor data into triple semantic
Algorithm:

1. Input: data for sensor
2. Output: IoT triple semantic
3. SSN ONTOLOGY TO OWL DATA
4. SEMANTIC TRIPLE TO OWL DATA
4. 5. Stop

5.3 SYSTEM ARCHITECTURE

Each ingredient will now be described in more detail below

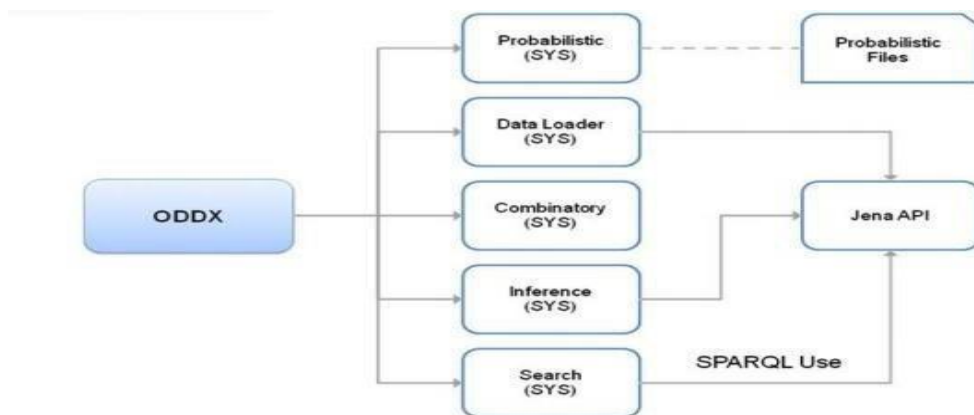


Fig. 6: ODDX system architecture

Identifying differences is a medical term related to cysts Methods for diagnosing patients on some basis signs and symptoms, monitor symptoms regularly removal of the test until a possible diagnosis is found matched to symptoms. Its main purpose research is about building a system with its power probabilistic techniques, ontology, and incompatibility, respectively the doctor assists in the above procedure.

Treated for thrombosis, and within hours after treatment, the presented symptoms are a burden on the blood vessels. What the most likely disease?

- Emergency idioventricular rhythm
- Decorative defects
- Fracture of papillary muscles
- Ventricular aneurysm
- Heart attack in right ventricle

If we consider the cases mentioned above, it can be formed question for question. Thus, the system acts as a tool to resolve the knowledge gaps that arise in the test created due to the idea of a subject doctor, the algorithm generates analysis in all groups. The method uses automated statistical probability techniques the irrational tendency to remove human reason diagnostic process. Allows the system to analyze each year an assignment of values is included for each paradise the probabilities of each test are considered as its function Details. So Creative Machine makes sense Conclusion, in the gynecology of the disease and its relationship Signs and Symptoms Festive process, with Causes a list of possible disease [15]. Although similar systems exist, the current system analyzes such cases It seems to be on top without any new to medical students or physicians.

VI. RETRIEVAL MECHANISM

Data recovery is used to meet the needs of users. Achieving this goal Data recovery refers to replacement, storage, organization, and access Something to explain Therefore, data recovery can be changed by the user Variable machine information [16]. This question is often a sentence Describe the required information. They can be invisible with a slight misunderstanding of things that have been compromised Net standards. Users may want to get information on a topic. In the system we show as in fig. 3, the user wants access to the system through recovery Users can create queries for a specific topic Related information the user places a request in a beautiful user interface wrapper for access Stored files and data. Remove data related to wrapper ontology strategy Gynecology. The results of the study were translated using the ontology package User. This is why users ask questions in data semantics without any other use Linguistic gynecology.

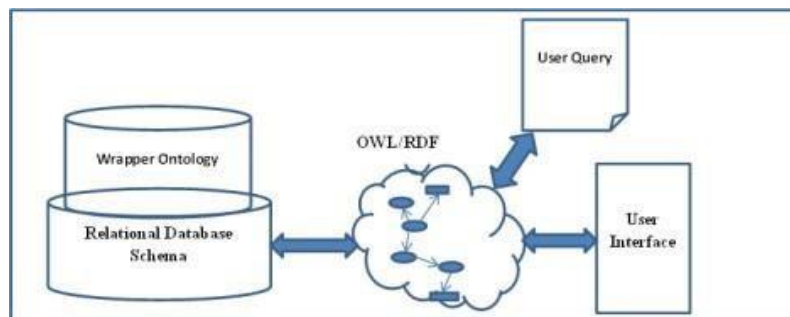


Figure 7: Retrieval Mechanism

Fig 7: Representative of UTM Clinical Oncology The method below shows that the semantic recovery algorithm

must be strict they are not enough because they are enough to address the lack of family planning and oncology. They offer edits based on a single word General system practice.

VII. RESULTS AND DISCUSSION

Interoperability and personalized services are one of the key designs in for evaluation purposes, we need to guarantee the Semantic Interoperability Agent Karageorge et al. achieve great communication and interface between sensors, software, and Tools. This includes all the details needed to support each decision Support system. Also, it tells the solution between operation and external Service because data is available in the standard format possible other systems they read and use. We do a surveys interview end user with quantitative and qualitative questions we also show Assessment criteria for mental, functional and general health of end users. Mental health refers to psychological conditions and social well-being functional health of end users refers to the

ability of end users to perform the activities they need and general health refers to end users in general healthy. We interviewed 201 end users from Austria (i.e. 100) in Holland (i.e. 101). Their average age I around 77 years the elderly, of whom 33% are men and 67% are women. Also, 55% of End users stay at home. All End User Agree Participation in the survey and no personal data collected. We use 5- point scale requests where we measure and evaluate users Graduation (from 1 to 5, e.g. strongly disagree strongly agree), or satisfaction (from 1 to 5, for example from very dissatisfied to very satisfied).

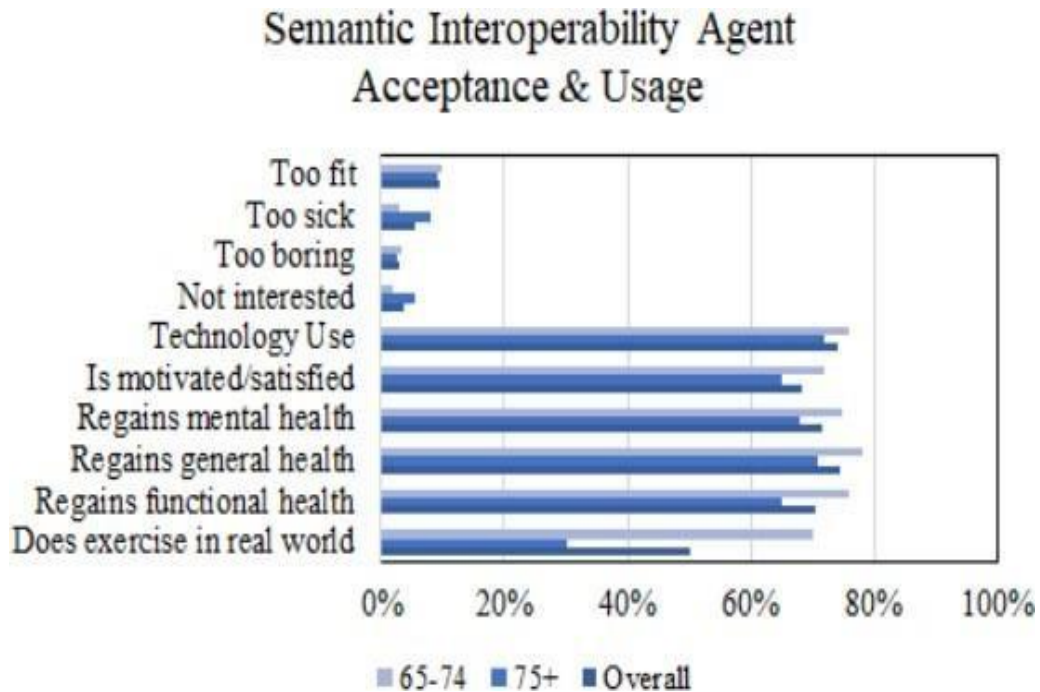


Fig 8: Quantitative and Qualitative Results.

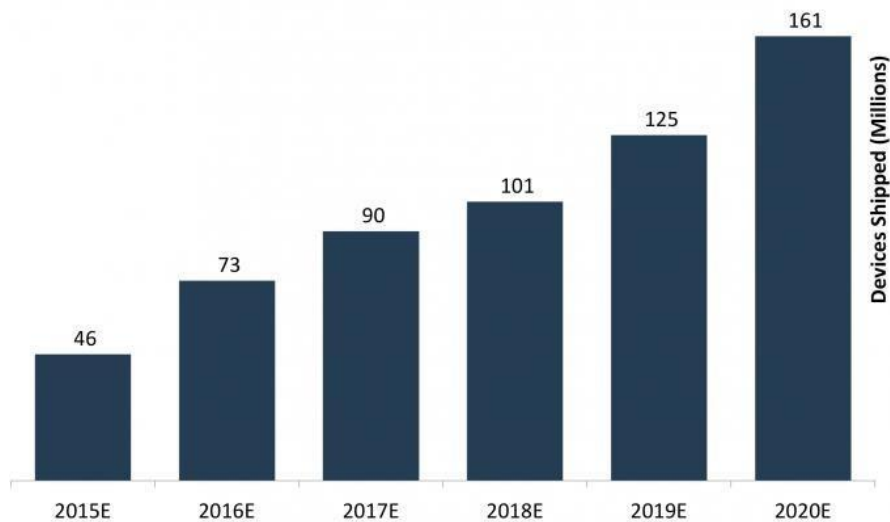


Fig9: Global Installation of estimated Healthcare IoT devices

Figure 9 shows that end users showed wide acceptance (more than 68.5%) System and I believe that its use has greatly contributed to mental, functional and general health (more than 72%). However, people who do not practice in real life have received more incentives the agent shows a power of 75 super strength or more (30%). At the same time, end users will not use the game to be fitter and prefer a more active or sick lifestyle etc.

Ontology Three Home Mobilization Approach 11 Alternatives need to be studied. Moreover, they are end users uninspired (i.e. not interested, too boring) was created using the game about 3% of respondents pay attention.

VIII. CONCLUSION

The purpose of this work is to provide a way to facilitate the storage and storage of important data guided by the ontology to give specific recommendations for adults to use. We have developed an experimental model described by an extensive ontology with which scientists are familiar. This article describes the pharmaceutical product difference system used by supporting physicians and pharmacology students. Upon investigation, commercial text negotiation, more cyclical conditions, and integration of ontology and probabilistic system, an article describes the pharmaceutical manufacturing difference system used by Otologists to support physicians and pharmacology students.

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