PROJECT REPORT

GAIL (India) Limited

Pata, Auraiya (U.P.)

VOCATIONAL TRAINING

ON

MOVABLE ASSET MANAGEMENT SYSTEM

IN

BUSINESS INFORMATION SYSTEM

UNDER GUIDANCE:

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PROJECT REPORT APPROVAL SHEET

It is certified that the Project entitled, “Movable Asset Management System” was completed by Ms. Riddhika Shringi under my guidance during the period w.e.f. 10th June 2021 to 10th August 2021. The same is hereby approved.

Mr. Rambharos Meena

Chief Manager (BIS)

GAIL, PATA

ACKNOWLEDGEMENT

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It gives me immense pleasure to express my deep gratitude to my project guide **Mr. Rambharos Meena** for his valuable guidance, encouragement and support during the course of this project.

I am highly thankful to **Mr. P.K. Jain** for giving me the opportunity to work as a vocational trainee at GAIL (PATA).

Riddhika Shringi

ABSTRACT

Moveable Asset Management System (MAMS) is a complete solution in material e-procurement process. It allows for completely tracking and management of materials, goods along with in stock and out of stock items.

E-procurement (electronic procurement, sometimes also known as supplier exchange) is the business-to-business or business-to-consumer or business-to-government purchase and sale of supplies, work, and services through the Internet as well as other information and networking systems, such as electronic data interchange and enterprise resource planning. E-procurement is done with a software application that includes features for supplier management and complex auctions. The new generation of e-Procurement is now on-demand or a software-as-a-service.

Public sector organizations use e-procurement for contracts to achieve benefits such as increased efficiency and cost savings (faster and cheaper) in government procurement and improved transparency (to reduce corruption) in procurement services. E-procurement in the public sector has seen rapid growth in recent years. An e-procurement system manages tenders through a web site. This can be accessed anywhere globally and has greatly improved the accessibility of tenders.

GAS AUTHORITY OF INDIA LIMITED(GAIL)

Company Profile

GAIL India Ltd. is a natural gas corporation, owned by the government, and is responsible for natural gas processing and distribution in India. GAIL was conferred with the Maharatna status on 1st February 2013, by the Government of India. Only eight other Public Sector Enterprises (PSEs) enjoy this coveted status amongst all central CPSEs. It is a group of the most profitable and efficient central public sector undertakings having more financial and administrative autonomy.

GAIL owns the country's largest pipeline network, the cross-country 2300 km Hazira-Vijaypur-Jagdishpur pipeline with a capacity to handle 33.4 million cubic metre per day at standard conditions gas. Today, the company owns and operates more than 11000km long cross country natural Gas Pipeline in India having presence in more than 20 states in the country. It also owns and operates more than 2000km long LPG pipelines in the country and has the pride to operate one of the world's longest exclusive LPG pipeline in the country from Jamnagar in Gujarat to Loni in Uttar Pradesh.

The company also owns and operates seven mega LPG recovery plants in the country today and has to it's credit around more than 20% of domestic LPG produced and supplied for the domestic usage through its sisters PSUs like IOCL, BPCL and HPCL. GAIL is one of the major petrochemical conglomerates in the country, with India's largest gas based petrochemicals in operation since 1999. The company also has it's own gas based integrated petrochemical plant and also the ownership of 70% in dual fuel petrochemicals in Assam, Brahmaputra Cracker and Polymer Limited and one of the major equity partners in OPal.

The company supplies gas to power plants for generation of over 4,000 MW of power to the fertilizer plants for production of 10 million tonnes of urea and to several other industries. The company has established six gas processing(LPG) plants, four along the HVJ pipeline, two at Vijaipur MP, one at Vaghodia, Gujarat and Auraiya, UP and one each in Lakwa Assam and Usar Maharashtra. GAIL has also set up several compressor stations for boosting the gas pressure to desired levels for its customers and internal users.

GAIL also possesses a vast telecommunication network, that contributes significantly to the high level of system reliability of operations, on-line real-time communication and monitoring higher productivity. GAIL became the first Infrastructure Provider Category || Licensee and signed the country's first Service Level Agreement for leasing bandwidth in the Delhi-Vijaipur sector in 2001, through its telecom business GAILTEL.

Company Growth and History

GAIL was formally known as Gas Authority of India Limited, and was incorporated in August 1984 as a Central Public Sector Undertaking(PSU) under the Ministry of Petroleum &Natural Gas. Initially, the company was given the responsibility of construction, operation and maintenance of the Hazira-Vijaipur-Jagdishpur (HVJ) pipeline project, which was one of the largest cross-country natural gas pipeline projects in the world. During this project, three Liquefied Petroleum Gas(LPG) plants were constructed and some regional pipelines acquired, enabling GAIL to began its gas transportation in various parts of India. In order to secure gas for its mainstream business, the Exploration and Production department was created. Gail today, has reached new milestones with its strategic diversification into petrochemicals, telecom and liquid hydrocarbons besides gas infrastructure. The company has also extended it's presence in power, liquefied natural gas re-gasification, city gas distribution and exploration & production through participation in equity joint ventures. It is also actively scouting for foreign blocks both exploratory or discovery. Incorporating the new-found energy into it's corporate identity, Gas Authority of India was renamed GAIL(India) Limited on 22 November 2002.

GAIL has shown organic growth in gas transmission through the years by building large network of trunk pipelines covering length of around 10,700 km. GAIL now transmits more than 160 million cubic meter per day at standard conditions of gas through its dedicated pipelines and have more than 70% market share in both gas transmission and marketing.

Vision & Mission

Since its inception, GAIL has played a pivotal role in development of Indian energy sector. Within a very short span of time, we have established ourselves as a Global Maharatna with significant presence in the entire gas value chain. Our fast progression has made us face resultant business complexities, associated confrontation of global scale competition in all major business verticals. Besides rising competition, we have also witnessed a pivotal transformation across energy sector in recent years, driven by various factors such as rising demand, technological innovation, geopolitical shifts and environmental concerns. Considering the imminent challenges and sectorial transformation, we have adopted our long-term strategic plan - "Strategy 2030" to overcome business challenges and new areas for growth and the way forward. Keeping in mind changing times of our industry and our new strategic objectives, we have revisited our Vision and Mission statements to accurately describe our purpose of existence, objectives and overarching aspirations. These new vision

and mission statements of GAIL reflect our core value system including why we exist, what we do and why we do it.

Vision

"Be the leader in natural gas value-chain and beyond, with global presence, creating value for stakeholders with environmental responsibility".

Mission

"Enhancing quality of life through clean energy and beyond".

Global Presence

Presently GAIL(India) Limited is a full-fledged global energy company listed in Fortune 2000 companies. As a strategy of going global and further expanding global footprint, GAIL has it's presence in five countries viz. China, Egypt, Myanmar, Oman and Singapore.

The company is also an equity partner in two retail gas companies in Egypt, namely Fayum Gas Company(FGC) and National Gas Company (Natgas). Besides, GAIL is an equity partner in a retail gas company involved in city gas and CNG business in China-China Gas Holdings Limited (China Gas).

GAIL is a part of the consortium in two offshore E&P blocks in Myanmar and also holds participating interest in the joint venture company - South East Asia Gas Pipeline Company Limited incorporated for the transportation of gas to be produced from two blocks in Burma to China.

Truly, GAIL (India) Limited has done India, a proud being such a large-scale energy company.

Subsidiaries

GAIL (India) Limited has diversified into different business segments of energy sector and has a number of subsidiaries. The following are the subsidiaries of GAIL(India) Limited with a brief information:

GAIL Gas Limited

Gail Gas is a wholly owned subsidiary of GAIL. It has been selected for implementation of City Gas Distribution (CGD) projects in four cities namely Kota, Dewas, Sonepat, and Meerut in first round of bidding by the Petroleum & Natural Gas Regulatory Board (PNGRB). GAIL Gas supplies CNG & PNG (industrial, commercial, and household customers) in the cities mentioned above including Varanasi. It provides natural gas to approximately 350 industrial consumers in TTZ (Taj Trapezium Zone) area (Agra & Firozabad) in Uttar Pradesh, India. GAIL Gas has also started the CGD work in Bengaluru Karnataka recently.

Brahmaputra Cracker and Polymer Limited (BCPL)

GAIL has 70% equity share in BPCL, a Joint Venture, with Oil India Limited(OIL), Numaligarh Refinery Limited (NRL), Govt. of Assam, each having 10% equity share. BPCL was dedicated to the nation by Honorable Prime Minister of India Shri Narendra Modi on 5 February 2016. BPCL is set up to produce 280, 000 TPA polymer plant at an investment of Rs 99.65 billion. The financial commitment to the extent of Rs54 billion has been made. The plant is presently in O&M phase with capacity utilization of more 100%. In the financial year 2019-20, the plant operated at 108% capacity utilization.

GAIL Global (Singapore) Pte Limited

GAIL has wholly owned subsidiary, namely, GAIL Global(Singapore) Pte Ltd., to manage investments abroad. GAIL is looking for further business opportunities through this subsidiary company.

GAIL Global (USA)Inc.

GAIL Global (USA) LNG LLC

Joint Ventures

GAIL(India) Limited has also gone into joint ventures with different energy companies. Today it can be named as GAIL group of companies in this regard. This growth oriented attitude of the company has made it the number one integrated energy company of India.

A number of joint ventures of company are explained in brief as under:

Avantika Gas Limited (AGL)

AGL is in operation in Indore and Ujjain and is supplying CNG to the transport sector in these cities. AGL is supplying CNG to almost 9,000 vehicles in both the cities. AGL has plans to set up five & two CNG stations in Gwalior and Ujjain respectively, and domestic supplies to households. Six daughter stations are mechanically ready for CNG dispensing, awaiting for CCOE final approval. GAIL has 22.5% stake in the Company along with HPCL as an equal partner.

Bhagyanagar Gas Limited (BGL)

BGL is opening 6 CNG stations in Vijayawada, 4 stations in Hyderabad and 1 CNG station in the Rajamahendravaram. BGL is supplying CNG in these three cities to almost 6,000 vehicles. BGL is also operating two Auto LPG stations in Hyderabad and one Auto LPG station in Tirupati. It has received authorization from MoPNG for City gas Distribution (CGD) in Hyderabad and Vijayawada. GAIL has a 22.5% stake in the company along with HPCL as an equal partner.

Central U.P. Gas Limited(CUGL)

CUGL is operating 15 CNG stations in Kanpur, Unnao and two CNG stations in the Barely. CUGL is supplying CNG to almost 45,000 vehicles in the two cities. It commenced its domestic supply of PNG with connexions to 15000 households in Kanpur and Bareily. CUGL has received authorization from MoPNG for CGD in some cities. GAIL has 25% stake in the company along with BPCL as an equal partner.

Green Gas Limited (GGL)

GGL is operating 6 CNG stations in Lucknow and three CNG stations in Agra. It also supplies CNG in the two cities. GGL has tied up for the commencement of domestic supply of PNG with connections to households, commercial and industrial establishments. Along with IOCL as an equal partner, GAIL has a 22.5% stake in the company.

Indraprastha Gas Limited (IGL)

IGL is the biggest CGD entity in terms of CNG sales and the number of vehicles supplied by CNG in India. IGL is supplying piped gas to around 900,000 domestic, 3500 Commercial, 1600 small industrial consumers and CNG to over 10,00,000 vehicles through around 425 CNG stations in NCR. GAIL has a 22.5% stake in the company along with BPCL as an equal partner.

Mahanagar Gas Limited (MGL)

MGL is a joint venture of GAIL and British Gas.GAIL has a 49.75% stake in the company along with British Gas as an equity partner. MGL has set up 140 CNG stations catering to over 200,000 vehicles spread over Mumbai, Thane, Mira-Bhayandar and Navi-Mumbai areas besides supplying PNG to over 450,000 domestic customers, more than 1,000 small industrial and commercial consumers.

Maharashtra Natural Gas Limited (MNGL)

MNGL is a joint venture of GAIL and Bharat Petroleum Corporation Limited (BPCL) for implementation of city gas projects in and around Pune city. MNGL has received authorization from MoPNG for CGD in Nashik, Pune including Pimpri, Chinchiwad, Talegaon, Hinjewadi and Chakan areas. It has started 10 stations supplying CNG to nearly 5,000 vehicles. GAIL has 22.5% stake in the company.

ONGC Petro-additions Limited(OPaL)

OPal is a joint venture of GAIL with Oil and Natural Gas Corporation Ltd. and Gujarat State Petroleum Corporation Ltd., for setting up Petrochemical Project at Dahej in Gujarat. OPaL is setting up a green field petrochemical complex of 1.1 million tonnes per year ethylene capacity in Gujarat.

Petronet LNG Limited (PLL)

PLL has been formed for setting up of LNG import and regasification facilities. PLL has a long term LNG supply contract with RasGas, Qatar, for import of 7.5 million tonnes per year of LNG. PLL Dahej terminal in Gujarat has been expanded to 10 million tonnes per year capacity. GAIL has a 12.5% equity stake in PLL, along with BPCL , ONGC, and IOCL as equity partners.

Some of the other joint ventures of GAIL include **Tripura Natural Gas Company Ltd.(TNGCL)** (29%stake), **GAIL China Gas Global Energy Holdings Limited** (50% equity interest) and **Andhra Pradesh Gas Distribution Corporation** (50% equity interest in the company).

Different locations of GAIL(India) Limited Plants

Following are the locations of seven major plants of the company in India:

1. 16 Bhikaji Cama Place, New Delhi.
2. LPG recovery plant, Raigarh district, Maharashtra.
3. LPG recovery plant, Guna district, Madhya Pradesh.
4. LPG recovery plant, Baroda district, Gujarat.
5. LPG recovery plant, Bharuch district, Gujarat.
6. Petrochemical Complex, Pata, district Auraiya, U.P.
7. LPG recovery plant, Sibsagar district, Assam.

There are different zonal offices and work centers situated in India. This thick network of different stations, zonal offices, terminal offices and plants make GAIL (India) Limited a very vast company having its presence in all parts of India. All these offices are connected to each other with company's own communication network through GAILTEL and centrally co-ordinated by its corporate office at New Delhi.

Awards won by the company

- **Fastest growing Maharatna PSU Award - April 12, 2017**

Shri B C Tripathi, CMD, GAIL received the fastest growing Maharatna PSU Award from Shri Nitin Gadkari, Hon. Minister of Road & Transport & Shipping in the presence of Shri Dharmendra Pradhan, Hon. Minister of State (I/C), P& NG & Shri Manoj Sinha, Honorable Minister of State (I/C) for Telecommunications and Minister of State for Railways during the Hindustan Ratna PSU Awards organised by HTMedia Ltd.

- **Prestigious CII-National Water Awards for Excellence in Water Management - September 27, 2016**

GAIL won the Prestigious CII-National Water Awards for Excellence in Water Management-2016 in “out of fence Category” for outstanding work in Watershed management & development under CSR project: Jaldhar in Jhabua District of Madhya Pradesh. Out of 21 companies shortlisted for the award, GAIL (India) Limited is the only

Public sector to receive the award for Excellence in Water management for path breaking contribution in Watershed management and development. The award was finalized through

rigorous three tier evaluation process of detailed questionnaire, authentication of water structures through digital GIS technology of water tool and WATSCAN and finally on field verification of involvement of communities and their feedback. The jury of the award consisted of eminent personalities from Government, industry and development sector headed by Sh. Anil Kakodkar, Chairman of Atomic Energy commission and Director of the Bhabha Atomic Research Centre, Mumbai.

- **GAIL declared the top Indian company in the 'Gas-Processing, Distribution and Marketing' Sector for the Dun & Bradstreet Corporate Awards 2014 - May29, 2014**

GAIL (India) Limited was awarded the top Indian company in the Gas-Processing, Distribution and Marketing Sector for the Dun & Bradstreet Corporate Awards 2014. Shri E S Ranganathan, Executive Director (O& M), GAIL received the award on behalf of GAIL from Mr. Arun Shourie, the Chief Guest of the event in Mumbai earlier this week. This is the fourth time that GAIL has received this award.

The 'Dun & Bradstreet Corporate Awards 2014' seeks to recognize and felicitate corporate India´s leading companies from various sectors. The Awards event is closely tied to the publication, India´s Top 500 Companies 2014. Therefore, the base universe of the companies considered for the Dun & Bradstreet Corporate Awards 2014 comprised of the Top 500 companies of India as covered under the publication.

- **GAIL adjudged 'Company of the Year' for Project Management for Dabhol - Bengaluru pipeline - September 8, 2014.**

GAIL (India) Limited was adjudged 'Company of the Year' in the Project Management category for its Dabhol – Bengaluru natural gas pipeline project at the Petroleum Federation of India (PetroFed) Oil & Gas Industry Awards 2013. The award was presented by Shri Saurabh Chandra, Secretary, Petroleum and Natural Gas, Government of India and accepted on behalf of GAIL by Shri Prabhat Singh, Director (Marketing), Dr. Ashutosh Karnatak, Director (Projects), Shri A K Singh, Executive Director (Projects), Shri E S Ranganathan, Executive Director (O&M) and Shri Prasoon Kumar, General Manager (Projects).

The 1,000 km-long Dabhol - Bengaluru pipeline, which connects south India to the national gas grid, was built at an investment of Rs 4,500 crore. Completed within cost, the pipeline construction was carried out in highly undulating Western Ghats and met all norms of health

and occupational safety. The project had earlier been conferred the coveted Platts Global Energy Awards in the 'Premier Project in Large Construction' category.

- **GAIL DBPL project receives Platts Premier Project Construction Award - December 20, 2013**

The Dabhol-Bengaluru pipeline was dedicated to the nation by the Hon´ble Prime Minister of India during the 8th Asia Gas Partnership Summit 2013. The Rs. 4508 crore, 1000 Km long High pressure Dabhol-Bengaluru Gas Pipeline Project of various diameters, designed to transport 16 MMSCMD of RLNG from Dabhol is a first-of-its-kind undertaken in the difficult terrain of Western Ghats. This ambitious project is an important limb of National Gas Grid and opens Southern India to various sources of natural gas. This project will enable the States of Goa and Karnataka to use the most environment friendly green fuel for the first time.

- **Best LNG Exicutive Global Award at CWC's 14th World LNG Summit being held at Paris - November 20, 2013.**

GAIL (India) Limited Chairman and Managing Director, Shri B C Tripathi, was conferred the prestigious 'Best LNG Executive Global Award' for 2013 at CWC´s 14th World LNG Summit being held at Paris.

Shri Tripathi, who was presented the award at a glittering ceremony in the French capital last evening, was recognized for his outstanding contribution in the development of global LNG industry and in recognition of his dynamism and leadership skills to steer GAIL forward, which are reflected in the company´s landmark achievements in LNG sourcing in the recent past.

- **Oil & Gas Pipeline Transportation Company of the year - June 28, 2013.**

GAIL (India) Limited received Oil & Gas Pipeline Transportation Company of the year, besides Project Management (Rs 500 crore to Rs 2,000 crore category) of the year and the Environmental Sustainability of the year category. Mr. B C. Tripathi, CMD GAIL, along with Director (Projects), Director (Marketing), Director (Marketing), Executive Director (Projects), Executive Director (O&M), GM (CP) received these prestigious awards from Dr. M Veerappa Moily, the then Union Minister for Petroleum and Natural Gas during the Petroleum Federation of India (PetroFed) Oil & Gas Industry Awards 2012.

In addition, Ms. Sandepa Trakroo, Chief Manager (Corporate Planning), GAIL, won the 'Woman Executive of the Year in Oil & Gas Industry' during the ceremony.

GAIL won the 'Company of the Year' award in the Environmental Sustainability category in recognition of its key role in building sustainable energy future for the country. GAIL was adjudged the 'Company of the Year' in the Project Management (Rs 500 crore to Rs 2,000 crore) category for setting up commercial Wind Energy project of 100 megawatts.

- **Platts Global Energy Award, for 'World's No. 1 Company in Downstream Operations - December 2, 2011.**

GAIL (India) Limited, India´s leading natural gas company received top honors as the "World´s No. 1 company in Downstream Operation" for 2011 at the Platts Global Energy Awards held at New York on December 1, 2011.

GAIL has been recognized for achieving year-on-year growth, ensuring uninterrupted availability of gas to customers, expanding pipeline infrastructure and making overall contributions to the country´s growth. It is understood that Platts´ independent panel of judges commended GAIL´s imaginative plans to tap urban landfills as a new source of natural gas and to conduct a pilot program in partnership with the municipality of Delhi to extract landfill gas. They noted that this project, if successful, could be replicated across India.

GAIL was the only company from Asia to win Platts Global Energy Award that year. 21 companies and individuals from seven countries have been given Platts Global Energy Awards.

- **Prime Minister's 'MoU Excellence Award' for the year 2008-09 - December 15, 2010.**

GAIL has been recognized for achieving year-on-year growth, ensuring uninterrupted availability of gas to customers, expanding pipeline infrastructure and making overall contributions to the country´s growth. It is understood that Platts´ independent panel of judges commended GAIL´s imaginative plans to tap urban landfills as a new source of natural gas and to conduct a pilot program in partnership with the municipality of Delhi to extract landfill gas. They noted that this project, if successful, could be replicated across India.

- **Ranked as Asia's No.1 gas utilities company in the Platts Global Ranking of Energy Companies**

In the 2010 rankings, GAIL moved past heavyweights like Tokyo Gas, Osaka Gas Co., Hong Kong & China Gas, Korea Gas Corp to be ranked no.1 company among gas

utilities in Asia in the Platts Global Ranking of Energy Companies. The award was conferred upon GAIL on 2nd November 2010 at a glittering ceremony held in Singapore to celebrate Asian winners in the Top 250 list of Platts.

- **Scope Meritorious Award for Corporate Governance 2007-2008 - April 10, 2007**

ABOUT GAIL PATA

GAIL, Pata is a wholly owned unit of GAIL (India) Limited. It is geographically located in between Kanpur and Etawah at village Pata, District Auraiya in the state of Uttar Pradesh (India). The complex is spread in an area of over 585Ha. This complex is a grass-root, energy intensive, integrated gas based Petrochemical Plant having end product as Polymer (comprises of HDPE & LLDPE), Liquefied Petroleum gas and Propane etc. It is also the only gas based petrochemical complex in northern India. This complex has acquired both ISO 9000 and 14000 certificates. It has also acquired several prestigious awards like **British Safey Council's Sword of Honor**, **OISD safety award** etc. The complex , comprising of Gas Sweetening Unit (GSU), C2+ recovery unit, Gas Cracker Unit (GCU), downstream processing units (HDPE and LLDPE), utilities and offsite systems was commissioned in the year 1999.

There are various departments in Gail Pata for carrying different activities. These are listed as:

- Gas Processing Unit
- Gas Cracker Unit
- Integrated Off sites & Storage
- Power Plant
- HDPE Plant
- LLDPE Plant
- PTD and Bagging
- Fire & Safety
- Technical Services
- Quality Control (LAB)
- Human Resource Department
- Finance & Accounts
- BIS & Telecom

- Contract and Procurement
- Marketing
- Project Development
- Mechanical
- Instrumentation
- Electrical
- Vigilance
- Security

PROCESS DESCRIPTION OF OVERALL PLANT

GAIL Pata plant comprises of the following main units -

- ❖ Gas Processing Unit (GPU)
  - Gas Sweetening Unit (GSU)
  - C2 - C3 Recovery Unit
- ❖ Gas Cracking Unit (GCU)
- ❖ Liquefied Petroleum Gas (LPG)
- ❖ High Density Polyethylene Plant (HDPE)
- ❖ Linear Low-Density Polyethylene (LLDPE)
- ❖ IOP.
- ❖ Butene- 1 Unit.

This complex gets C2/C3 from NATURAL GAS coming from Vijaipur through HVJ pipeline for producing polymers. Separation of Ethane - prop anal (otherwise used as a fuel) from natural gas is done in the Gas Processing Unit (G.P.U.) and is cracked into (G.C.U.) to produce ethylene and polypropylene. Ethylene is converted into final products - HDPE (High Density Polyethylene) and LLDPE (Linear Low Density Polyethylene) in the two polymer units.

GAIL's product range comprises of a wide range of polyethylene products named as G-LEX and G-LENE (HDPE and LLDPE) comprises of various grades, which are used by plastic

processors to manufacture a large variety of products for industrial, agricultural and domestic uses.

Gail Pata has expanded the polymer capacity of existing petrochemical plant, from 4,10,000MTPA to the polymer capacity to 8,10,000MTPA. To enable feedstock availability, a Gas processing unit at Vijaipur has installed. C2+ liquid is injected to existing HVJ pipeline along with propane. The C2+ material is recovered as Cracker feed in Pata. Accordingly, existing Gas processing Unit and necessary revamping of existing GPU, including LPG cum C2/C3 unit at Pata has been carried out for revised geed gas composition. The facilities of new Gas Cracker Unit of 450,000MTPA ethylene capacity and a Polyethylene (LLDPE/HDPE swing) unit of 400,000MTPA capacity and Butene-1 unit of 20000MTPA capacity has installed at Pata. Apart from the process units, necessary utility generation and Offsite Storage facilities are envisaged at Vijaipur and Pata.

Business Information System

Information technology (IT) has become a vital and integral part of every business plan. From multi-national corporations who maintain mainframe systems and databases to small businesses that own a single computer, IT plays a role. The reasons for the omnipresent use of computer technology in business can best be determined by looking at how it is being used across the business world.

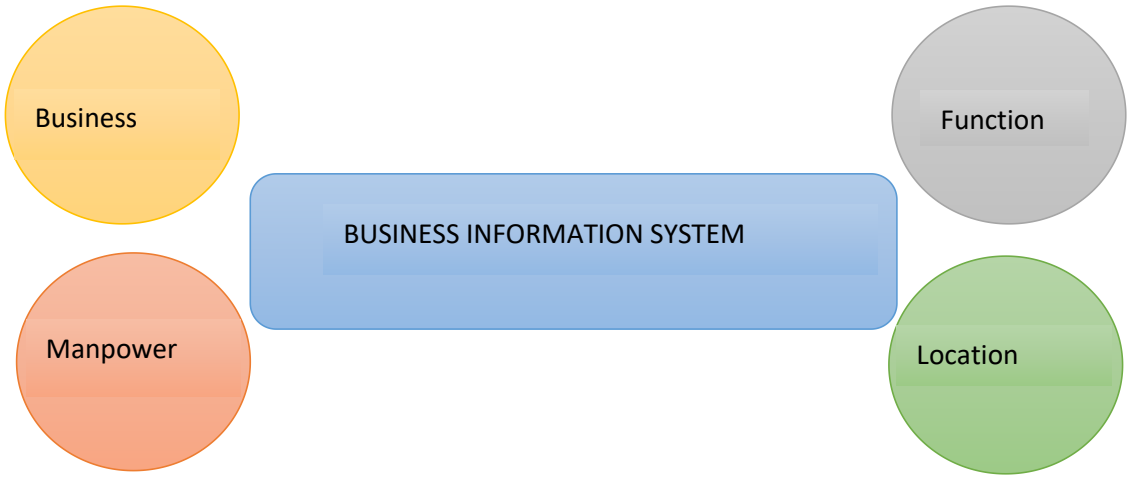
For any organization, Information Technology provides synergy, learning, increased productivity, competitive advantage, new opportunities, faster and correct decision-making and generally enables a better control for achieving

organization's objectives. IT leverages the availability of information and speeds up decision-making process of the organization.

Core activities of BIS at GAIL, Pata

- Development, Implementation and support of IT Applications.
- Administration of Network, Server Systems & Database
- Preventive and breakdown maintenance of all IT Systems
- IT support for plant applications
- Compliance of IT policy and IT Security policy of GAIL.

IT infrastructure like Servers, back up servers, Computers, printers, scanners, UPS, LAN network and Computer network are provided to support the plant applications.



PROJECT REPORT

Movable asset management system

What is asset management:

Asset management is the process of planning and controlling the acquisition, operation, maintenance, renewal, and disposal of organizational assets. This process improves the delivery potential of assets and minimizes the costs and risks involved. Adequate maintenance and proper deployment of systems, people, and processes ensure a positive enhancement of capital over the asset life cycle.

Introduction:

Asset management involves comprehensive and structured approach to the long-term management of assets as tools for the efficient and effective delivery of community benefit. For an organization to manage its assets efficiently all assets owned by the organization must be registered and recorded in the organization's assets inventory. The assets inventory contains not only the names and serial numbers of the assets but also the location of the asset in the organization, who is it assigned to, its working condition, depreciation value, maintenance status and inventory number amongst other information the organization wishes to capture. The system monitors and maintains things of value to an entity or group. It may apply to both tangible assets such as buildings and to intangible concepts such as intellectual property and goodwill. It is a systematic process of deploying, operating, maintaining, upgrading, and disposing of assets cost-effectively.

The basic financial purpose of an organization is to maximize its value. An inventory management system should also contribute to realization of this basic aim. Many current

asset management models currently found in financial management literature were constructed with the assumption of book profit maximization as basic aim. However, these models could lack what relates to another organization, i.e., maximization of enterprise value. Efficient management of the assets inventory of any organization maximizes the organization's value and makes assets easier to locate and manage.

The system employed in managing the assets inventory varies from organization to organization. Some organizations make use of the spreadsheet system to keep track of the assets they own. This method of assets management is time wasting and is prone to errors that the personnel may not even be aware he made. Other organizations make use of Assets Inventory Management software which automates the manual spreadsheet system. These software programs vary from organization to organization based upon the requirement of each individual organization.

The requirement includes the size of the organization and the volume of they own. The manual system employed by organizations involve the physical movement of their audit staff from office to office manually count the assets residing in each office before entering them into the spreadsheet. This method wastes time, is characterized by errors and it is difficult to keep inventory records updated if assets are transferred often. An outdated assets inventory register allows for the presence of ghost assets (this refers to assets that are still on record although they are no longer being used). Sometimes, ghost assets are sold off by employees in secret while in other cases are stashed away somewhere. Although these assets are no longer being used, the organization still pays for maintenance and insurance on some of them. Furthermore, as the number of asset acquisitions grows, it becomes increasingly impractical and more difficult to track the location, working status, transfers, disposals and adjustments to these assets. To ensure an accurate, well-detailed, up-to-date and secure database of assets present in an organization, an alternative is to use a web-based inventory management system where records can be digitally archived, thereby reducing filing activity at the end of each term's end.

Benefits of automating asset management:

Smart businesses don't waste time trying to complete basis and repetitive asset management tasks manually by using the same outdated process over and over again. Investing in asset management software allows businesses to automate tedious and time-consuming asset management activities offering administration team to focus more on value-added activities.

However, implementing an asset management system is a huge decision, so it is better to be sure of the tangible benefits before you take the leap. Ideally, asset management software:

- Prolongs the life of your assets
- Aids in rehabilitating, repairing, and replacing assets efficiently
- Meets consumer demands with a focus on system sustainability
- Helps focus on activities that are critical to sustained performance
- Enables businesses to meet service expectations and regulatory requirements
- Improves responses to emergencies or unexpected risks

Methodology:

Due to the complexity of this software project, the kind of design approach to use was carefully chosen in order to present modules simple enough for the user. Therefore, the top-down design method which is mostly used in software development because of its simplicity was adopted. An overview of the system was first formulated, specifying but not detailing any first-level subsystems. Each subsystem is then refined in yet greater detail, sometimes in many additional subsystem levels, until the entire specification is reduced to base elements.

Web Development Technologies to be adopted comprises of:

- HTML (Hypertext Mark-up Language)
- JavaScript
- ASP
- Oracle Database

Developmental Tools:

Front End Design

A suitable programming environment needs to be selected for system development. The chosen languages should be capable of developing a graphical user interface to display suitable output to the end users. The chosen language should include support for object-oriented implementations. Booch (1998) stated that 'Each object can be viewed as an independent little machine with a distinct role or responsibility'. As the system will comprise of several components implementing via an object-oriented language would allow for more efficient data parsing through each component.

Developing an application using a high-level object-oriented language enables more flexibility, making complex programming simpler than coding in low level languages. This would fulfil the extensibility requirement of the framework, making it easier to adapt and modify in the future. There are many programming and scripting languages available which meet these criteria. Some of these are analyzed below.

1. HTML (Hypertext Mark-up Language)

Hypertext Mark-up Language (HTML) is the standard mark-up language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML can embed programs written in a scripting language such as JavaScript, which affects the behaviour and content of web pages.

2. JavaScript

JavaScript is a scripting language used to enable programmatic access to computational objects within a host environment. It is a lightweight, interpreted, or just-in-time compiled programming language with first-class functions. It is generally used to implement dynamic web sites. It is a web scripting language that stays at the surface of an interface. While it is most well-known as the scripting language for Web pages, many non-browser environments also use it, such as Node.js, Apache Couch Db and Adobe Acrobat. JavaScript is a prototype-based, multi-paradigm, single-threaded, dynamic language, supporting object-oriented, imperative, and declarative (e.g. functional programming) styles. JavaScript unlike PHP only operate within web browser. JavaScript's are first executed whenever the system is run and hosts the application until all conditions are satisfied before PHP or any other server-side scripting language can begin execution.

3. ASP (Active Server Pages)

An Active Server Page, commonly called an "ASP page," is a web page that may contain scripts as well as standard HTML. The scripts are processed by an ASP interpreter on the web server each time the page is accessed by a visitor. Since the content of an ASP page can be generated on-the-fly, ASP pages are commonly used for creating dynamic websites. It is an old (but still powerful) tool for making dynamic Web pages. ASP is similar to other scripting platforms, like PHP and JSP, but supports multiple programming languages. While the default ASP language is VBScript, ASP pages can include other programming languages as well, such as C# and JavaScript. ASP pages are part of the ASP.NET web application framework developed by Microsoft. Therefore, ASP pages are most often found on Windows-based web servers that run Microsoft Internet Information Services, or IIS. You can tell if you are accessing an ASP page in your browser if the URL has an ".asp" or ".aspx" suffix. It was first released in December 1996, before being superseded in January 2002 by ASP.NET.

Back End Design (Database)

A back-end database is a database that is accessed by users indirectly through an external application rather than by application programming stored within the database itself or by low level manipulation of the data (e.g. through SQL commands). A back-end database stores data but does not include end-user application elements such as stored queries, forms, macros or reports. The back-end database concept was invented by Microsoft in 1989.

This comprises of both Functional and Non-Functional requirements. The functional requirement for the proposed Movable Asset Management System is a web-based application, which means it has a web-based platform. The database query language used in this application is the Structured Query Language (SQL). The backend database used here is Oracle Database.

Oracle Database

Oracle makes software, called database management systems (DBMS), to create and manage databases. An RDBMS is a relational database management system. Oracle Database (commonly referred to as Oracle DBMS or simply as Oracle) is a multi-model database management system produced and marketed by Oracle Corporation. It is a database

commonly used for running online transaction processing (OLTP), data warehousing (DW) and mixed (OLTP & DW) database workloads. Oracle Database is available by several service providers on-prem, on-cloud, or as hybrid cloud installation. It may be run-on third-party servers as well as on Oracle hardware (Exadata on-prem, on Oracle Cloud or at Cloud at Customer). Exclusively for Cloud customers Oracle offers Oracle Autonomous Database providing fully automated operation procedures.

SQL

SQL (Structured Query Language) is a domain-specific language used in programming and designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS). It is particularly useful in handling structured data, i.e. data incorporating relations among entities and variables. SQL offers two main advantages over older read–write APIs such as ISAM or VSAM. Firstly, it introduced the concept of accessing many records with one single command. Secondly, it eliminates the need to specify how to reach a record, e.g. with or without an index.

Originally based upon relational algebra and tuple relational calculus, SQL consists of many types of statements, which may be informally classed as sublanguages, commonly: a data query language (DQL), a data definition language (DDL), a data control language (DCL), and a data manipulation language (DML). The scope of SQL includes data query, data manipulation (insert, update and delete), data definition (schema creation and modification), and data access control. SQL is a standard Database language which is used to create, maintain and retrieve the data from relational databases like MySQL, Oracle, SQL Server, etc.

DATABASE DESIGN

ASSET REQUESTION TABLE:

NAME	NULL?	TYPE
REQ_NO	NOT NULL	NUMBER (3)
ASSET_TYPE_CODE	NOT NULL	NUMBER (3)
UNIT_CODE	NOT NULL	NUMBER (3)
RAISED_ON	NOT NULL	DATE
STATUS	NOT NULL	CHAR (1)
REMARKS		VARCHAR2(8)
LOC_CODE		NUMBER (3)
REQUIRED_FOR		VARCHAR2(50)
RAISED_BY		VARCHAR2(25)
APPROVED_ON		DATE
REQUEST_TYPE		CHAR (1)
LOC_ROOM		VARCHAR2(50)
APPROVER		VARCHAR2(8)
ASST_APPROVER		VARCHAR2(8)
ASST_APPROVED_ON		DATE
ALLOTED_ON		DATE
ASSETID		NUMBER (10)

ASSET IDENTITY TABLE:

NAME	NULL?	TYPE
ASSET_ID	NOT NULL	NUMBER (10)
ASSET_TYPE_CODE		NUMBER (3)
ASSET_CODE		NUMBER (3)
ASSET_SAP		VARCHAR2(20)
ASSET_REMARK		VARCHAR2(50)
MAKE_SR_NO1		VARCHAR2(50)
MAKE_SR_NO2		VARCHAR2(50)
MAKE_SR_NO3		VARCHAR2(50)
MAKE_SR_NO4		VARCHAR2(50)
USER_CPF_NO		VARCHAR2(8)
COMMON_DEPT		VARCHAR2(50)
UNIT_CODE	NOT NULL	NUMBER (3)
LOC_DESC		VARCHAR2(50)
EXACT_LOC		VARCHAR2(50)
LOC_ROOM		VARCHAR2(50)
ISSUE_DOC_NO		NUMBER (5)
INSTL_DATE		DATE

RESULT AND DISCUSSION

Asset Requisition: It is a request form to send to the management informed about the requirement of goods and services. In how much quantity, vendor list, and associated expenses are also mentioned in this request.

ASSET REQUISITION

RAMBHAROS MEENA, CH MANAGER (BIS), BUSINESS INFORMATION SYSTEM				
Asset to be Installed at PATA-PLANT - -POLYMER BHAWAN" - 010 Last Updated on30/06/2020				
Sr No.	Asset Type	Make - Model	SAP Asset ID	Displayed ID
1	COMPUTER	HP - HP SFF 600 G4	650012872	50005010650012872
2	WEB CAMERA	Logitech - HD 720p		
3	HEAD PHONE	Microsoft - LifeChat LX-3000		
4	SPEAKERS	Logitech - z120/S-00109		
5	Adobe Acrobat Pro DC	Adobe - Acrobat Pro DC		

As per Corporate BIS Guideleines Following assets may be issued to Individual			
Sr No.	Asset	Guideline	Select
1	PRINTER	All GAIL Executive Above E5 Grade	NA
2	SCANNER	All GAIL Executive Above E5 Grade	NA
3	UPS	With BIS Assets, where centralised UPS Point is not provided	☑
1	COMPUTER	All GAIL Employees working in General Shift	Already Alloted.
Approver	--Select--		

Please select required BIS Asset

I confirm that I am working in General Shift and BIS assets are (shall be) installed in alloted office space as updated above.
The BIS shall be informed for relocation of BIS asset and shall update the office space in Patanet.
In case of job rotation as Shift duty, the BIS Assets shall be retunred back to BIS.

Forward

Asset Acceptance for Approval: It shows details about the assets required that are to be approved by the BIS department. Showing Approver details, Department, where it is installed etc.

Asset

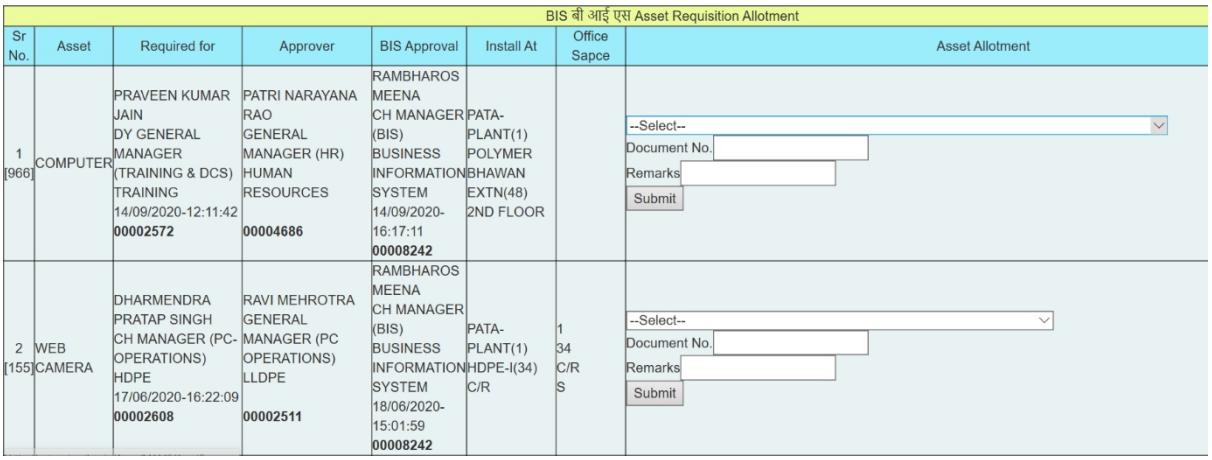
BIS Asset Acceptance for Approval								
Sr No.	Asset	Department	Required for	Requested On	Install At	Approver	Approved On	BIS Approval
1	COMPUTER	INSTRUMENTATION	ATUL KUMAR SINGH MANAGER (PC MAINTENANCE) INSTRUMENTATION 00015982	04/09/2020-16:29:49	PATA-PLANT(1) BOILER I(3) PP1 INST	RAVI PRAKASH SRIVASTAVA GENERAL MANAGER (PC-MAINTENANCE) INSTRUMENTATION **00001770**		◉No Action ○ Approve
2	COMPUTER	INSTRUMENTATION	RAJAN CHOUDHARY MANAGER (PC-MAINTENANCE) INSTRUMENTATION 00016869	08/09/2020-17:04:07	PATA-PLANT(1) HDPE-I CR(32) -	BIPUL TAID GENERAL MANAGER (PC-MAINTENANCE) INSTRUMENTATION **00004691**		◉No Action ○ Approve
3	COMPUTER	INSTRUMENTATION	RAJESH YADAV SR ENGINEER (PC-MAINTENANCE) INSTRUMENTATION 00017192	20/08/2020-11:36:27	PATA-PLANT(1) LLDPE-II CR(40) Instrument	BIPUL TAID GENERAL MANAGER (PC-MAINTENANCE) INSTRUMENTATION **00004691**		◉No Action ○ Approve

Installation: This form aims to take the installation details about the assets. Selecting the specific department and details about the installation along with some remarks.

BIS Asset Installation

Sr No.	Asset	User Details	Asset Details	Instalaltion Details
1	COMPUTER	LLDPE **NGE**	HP HP SFF 600 G4 650012799 **50005010650012799 INA947QL63 3CQ9271QXX BCYUB0DCPCL5NG FFHND0 AHDCRE9V**	☐PATA-PLANT ☐LLDPE-I CR ☐LLDPE-I CR PC Name (self / Connected) / IP Address (on LAN Printer, Scanner Etc.)/ Remarks --select-- (Done By) Installation Done
2	COMPUTER	SHASHANK SHARMA ELECTRICAL **00017186**	HP ELITE 8300 650008588 **650008588/2013**	☐PATA-PLANT ☐SS#12 ☐Room PC Name (self / Connected) / IP Address (on LAN Printer, Scanner Etc.)/ Remarks --select-- (Done By) Installation Done

Asset Requisition Allotment: This form allots the assets to specific departments, for the respective assets one selects a document number and can add remarks.



BIS बी आई एस Asset Requisition Allotment

Sr No.	Asset	Required for	Approver	BIS Approval	Install At	Office Sapce	Asset Allotment
1 [966]	COMPUTER	PRAVEEN KUMAR JAIN DY GENERAL MANAGER (TRAINING & DCS) TRAINING 14/09/2020-12:11:42 **00002572**	PATRI NARAYANA RAO GENERAL MANAGER (HR) HUMAN RESOURCES **00004686**	RAMBHAROS MEENA CH MANAGER (BIS) BUSINESS INFORMATION SYSTEM 14/09/2020-16:17:11 **00008242**	PATA-PLANT(1) POLYMER BHAWAN EXTN(48) 2ND FLOOR		--Select-- Document No. Remarks Submit
2 [155]	WEB CAMERA	DHARMENDRA PRATAP SINGH CH MANAGER (PC-OPERATIONS) HDPE 17/06/2020-16:22:09 **00002608**	RAVI MEHROTRA GENERAL MANAGER (PC OPERATIONS) LLDPE **00002511**	RAMBHAROS MEENA CH MANAGER (BIS) BUSINESS INFORMATION SYSTEM 18/06/2020-15:01:59 **00008242**	PATA-PLANT(1) HDPE-I(34) C/R	1 34 C/R S	--Select-- Document No. Remarks Submit

CONCLUSION AND SCOPE FOR FURTHER WORK

Conclusion: - By keeping tabs on a company's assets throughout their life cycle, we can improve the technique of acquiring and using assets. Discovery of wasteful purchasing practices, which it solved by developing a better strategy for buying the equipment needed. The system further suffered from lack of input controls and validation checks. These inadequacies resulted in incompatibility of the system to meet all business requirements, created risk of defective/ delayed BIS reporting and decision-making leading to manual intervention and thus making database unreliable. The underutilisation of the system compromised the basic objectives of leveraging information for competitive advantage in the market, improving operational efficiency, productivity, achieving higher customer service and satisfaction.

Recommendation: - The Management should consider the following measures for implementation to optimise the benefits from the system:

- Ensure customisation and usage of the solution as per business requirement, statutory requirements and guidelines of the Government and policies of the Company. A time bound review of all the modules should be conducted to ensure compliance with applicable business rules.
- All the available functionalities of the system should be customised to the meet the business requirements. To derive optimal benefits from the system, different modules should be integrated.
- Ensure that input controls and validation checks are inbuilt in the system and are applied to data entered in the system to strengthen internal control procedures.
- The 'Master Data' needs to be revisited/reviewed periodically for ensuring veracity of the data and authorization thereof.
- In the areas of input control and business continuity plan, the Company should evolve suitable security policies with clearly defined procedures and responsibilities.