Centurion
UNIVERSITY

www.gramtarang.in

Centurion University & Gram Tarang

Shaping lives…empowering Communities!

The world of hopes & Possibilities

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Today Agenda

Centurion University – Gram Tarang

Our Unique Value Proposition

Our Key Partners

Product Development Approach

Case Studies – Digital Developed Products

Our Co-Founders

Prof. Mukti Mishra, PhD
President, Centurion University
Chairman, Gram Tarang group of companies.

A veteran and renowned academician who founded Centurion University in 2010 First Multi sector State enacted University established in a Tribal and Naxal dominated region.

After a brilliant career in the corporate sector with Fortune 500 companies he taught students of Business Schools across India, Australia, China, Malaysia, Africa and Singapore between 2004 and 2010 Prof Mukti Kanta Mishra channelized all his energy and efforts in revamping the present day education system, which spews think ready youth who are unable to land jobs for lack of practical mastery on their field of specialization

A school of Vocational Education and Training Skill has become a fulltime activity and one of the passionate of the University to enhance skilled employability

Prof. D N Rao
Vice President, Centurion University
Co-Founder, Gram Tarang group of companies.

1989 batch IIM Kolkata 26 years experience with 10 years in firm, Rural Enterprise Management and Tribal development, Specialist Expert/ Advisor on Rural/ Agricultural /Micro privatization Social Development.

Extensive experience in monitoring and evaluation of development sector projects, Consultancy/ worked for the DFID, USAID, World Bank, BFW, CORDAID, ICEF and many other donor funded projects Lead advisors for the Micro privatization initiative in the power sector in Orissa, Karnataka, Andhra Pradesh and NOIDA Study on establishing baseline for the measurement of socio economic impact of the power sector reforms in Orissa.

Worked across the core sector in areas of rural development and upliftment Developed a five stage "empowerment measurement frame work" which was adopted by the NGOs and Mission Shakti of government of Orissa

A Public & Private Academia Partnership

NSDC, Govt. of India

Seed funding from **National Skill Development Corporation**

Granted affiliation for NCVT ITIs & implementing PMKVY

Flexi MoU for Work Integrated ITI

Third Party Aggregator **for DGT Apprenticeship program**

CUTM

Qualifications framework for **National Skill Qualifications Framework** implementation

Knowledge support.

Accreditation & training of trainers for Diploma & above

Assessment & Certification

Gram Tarang

Implementing agency

Industry Partnerships for joint skill programs, placements

QP/NOS alignment with SSCs & Skills integration with University.
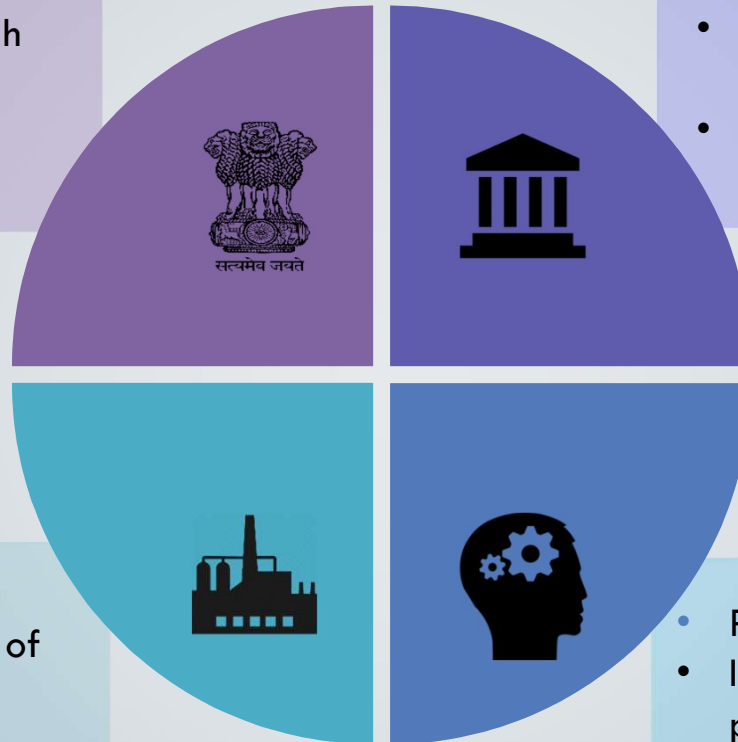
Program Implementation: Mobilization, Center Setup, Training, Placement, Post placement support.

Institutional model with Industry, Academia, Government & Social entrepreneurship

- Policy, standards, funding through various schemes, governance
- Credibility & outreach for mobilization.

- Academic rigor through curriculum, trainers, faculty
- Assessments, Certifications & qualifications for higher education

- Technical & knowledge support: equipment, curriculum , Training of trainers.
- OJT & employment opportunity

- Program Implementation, Mobilization,
- Industry connect, Placements, post placements support

An integrated ecosystem focused on building competencies & skills

CUTM Incubation Center

Gram Tarang Employability Training Services Pvt. Ltd. | Skill building for employment & self-employment in partnership with NSDC

Gram Tarang Foods Pvt. Ltd. | Pure & Natural CO_2 oleoresins & total extracts from organic spices & herbs

Gram Tarang Inclusive Development Services Pvt. Ltd. | Banking correspondence to unbanked services villages through 8,500+ BCs & 27,000 villages

Gram Tarang Technologies Pvt. Ltd. | Making students Industry 4.0 ready | Taking advanced technologies to rural areas

Urban Micro Business Center | Nano / Mini / Micro entrepreneurship among urban poor resulting in livelihood opportunities aligned with community needs

…skilling rural India through hands on, experiential based learning…

Our Presence

5 University campuses in Odisha & AP.

41 residential skill centers across Odisha, Assam, AP, Telangana, Jharkhand, UP, Punjab (includes 6 ITIs & 3 Polytechnics)

Industry integrated training programs in Pune, Bangalore, Tirupur, Coimbatore, NCR and Gujarat

Training Pedagogy

Teaching, Training & Production Model with 27 active industry partners who help create Live Production environment for action-based learning.

Sectoral Focus: Automotive, Manufacturing, Energy, Apparel & Textiles, Hospitality, BFSI

Social Impact

Focused on socio-economically marginalized communities in remote rural & tribal belts of Odisha, Jharkhand, North East & Eastern UP etc.

60% from the SC/ST Category.

70% from poor families.

45% of placed trainees are Women.

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Track Record

2,50,000 youth trained to date
50,000+ trained in 2019-20

Focus on jobs in industrial belts: 75% of eligible candidates placed in jobs across 200+ placement partners.

Migration & resettlement support across 5 industrial belts
.

Our Unique Value Proposition

Academia

O Strong Promoter-Centurion University
O Strong Academia in Skill Development
O Reputed AutoPartners-AshokLeyland,Volvo-Eicher,Yamaha,TataMotors,Hyundai
O Access to Talent Pool ,Labs, Prototyping
O Winner of best Training Partner at NSDC2014
O Leverage OEM to business growth of EV GT Tech

Skill Development

O Promoted by Gram Tarang Group—GTET, GTIDS, GT Foods
O Skill building for Employment & Self Employment in partnership with NSDC
O Banking correspondence Services to unbanked Villages through 8,000+BCs
O Nano/Mini/Micro entrepreneurship among Urban poor

Creating Employability

O GT Tech generate 800+ Primary Employability, 500 Secondary Employability with sustainable Growth
O GT Tech will create10 start-ups to its aggregates/sub-systems
O One year Internship to Degree-Diploma (Go To Market) :Shop Floor to Top Floor… As open IT Source Code

Technology Partner

O Dassault Systemes signed MoU with GT Tech on 3DExperience Platform
O Technology Supporting Implementing Design & Development of our EV in Start-ups
O 3DExperience PLM Global Company 124 Nationalities /179 Sites
O 8000+Customers in India, 45+Partner in India
O AWS—Our Manufacturing Partner

Innovation

O Expertise brings to implementation of Flexible Manufacturing Systems
O Expertise brings to design of system in "Order to Deliver –a New Innovative / Patentable Customer Experience"
O Expertise brings Modularity, Configuration & Part Standardization in Single collaborative Platform-3DExperience platform of Dassault
O Battery Management System Optimisation using Dymola-Dassault Systemes

Industry4.0

O Digital Approval before Physical
O Modularity, Configuration & Part Standardization
O Manufacturing Execution System—IoT/Sensors-Shop Floor to Top Floor
O **Key Strategy:**
✓ In-house Research & Design
✓ Buy parts to assemble Vehicle
✓ Efficient supply chain
✓ Try Carbon Fibre Material

Key Industry Partners for Advanced Technologies

Advance Mechanical Services Bangalore

Dassault Systemes

AUS - Aarav Unmanned Systems

General Aeronautics
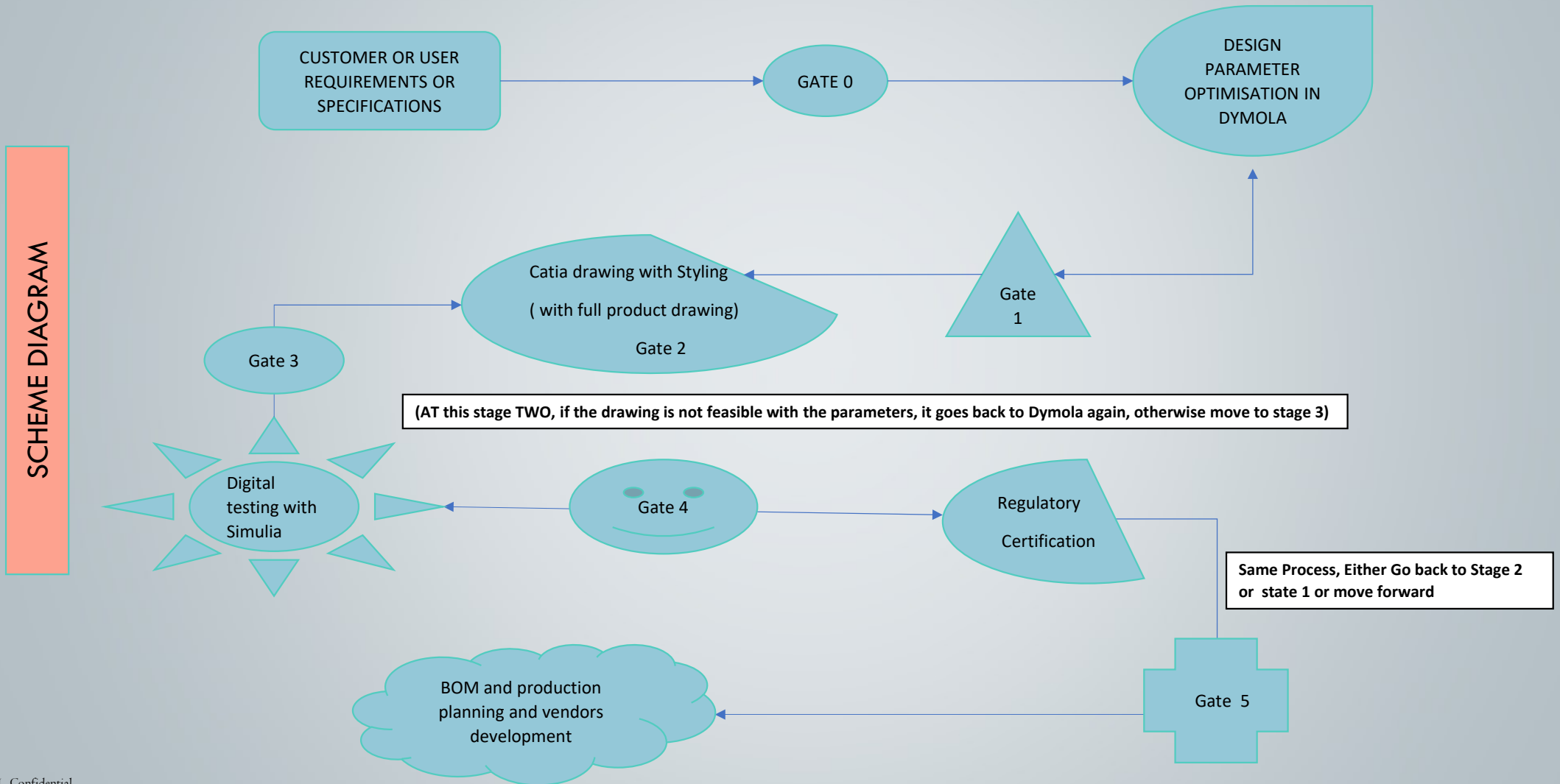
AMTZ- Vishakhapatnam

UNITY

Product Development Approach

Ready for Go-To-Market

Implement

Validate Solution

Develop Solution

Define Problem & Scope

- Plan implementation (pilot, full rollout and/or scale up)
- Convert implementation into new project/program, if relevant

- Evaluate the solution vis a vis the problem statement, scope and outputs
- Subject the solution to customer testing and feedback, if relevant

- Plan and assign different job roles to individuals
- Allocate the resources to accomplish specific targets
- Design and develop the solution/product
- Implementation and follow-up in each phase

- Develop a problem statement (3 bullets)
- Define areas included and excluded
- Identify resource requirements (human, financial and infra)
- Develop a tentative schedule (high-level) with milestones
- Identify sponsor and other expert resources

Product Development For Industrial Production

CUSTOMER OR USER REQUIREMENTS OR SPECIFICATIONS

GATE 0

DESIGN PARAMETER OPTIMISATION IN DYMOLA

Catia drawing with Styling

(with full product drawing)

Gate 2

Gate 1

Gate 3

(AT this stage TWO, if the drawing is not feasible with the parameters, it goes back to Dymola again, otherwise move to stage 3)

Digital testing with Simulia

Gate 4

Regulatory

Certification

Same Process, Either Go back to Stage 2 or state 1 or move forward

BOM and production planning and vendors development

Gate 5

E-Rickshaw

Concept development	Skeleton & wireframe is designed in CATIA
Product validation	Design is reviewed to check for errors
Process Planning	Part is finalized after correcting errors
Process Simulation	Individual componenst are assembled to create a part
Digital factory	Design is optimzed for better performance

Problem statement

- Design & development of Electric Rickshaw for 800kg passenger carrier (4+1 seater).
- Low affordable mobility
- Global e-mobility Market Analysis & Forecast 2017-2025) Survey shows a significant rise in e-mobility sector demand
- In e-mobility expected to show highest growth both in passenger and load body types.

Solution

- Complete end to end product designed digitally (used CATIA) and validated digitally (used DYMOLA & simulia)
- Meets the customers requirements.
- Chassis based on the Platform design.
- Low cost and up to last mile distribution with "GO GREEN the SAVE ENVIRONMENT" for rural and urban sectors
- Developed 'Make or Buy' strategy on sub-systems & components of SCV for cost benchmarking

Electric Vehicle

Concept development	Skeleton & wireframe is designed in CATIA
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Process Simulation	Individual componenst are assembled to create a part
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Problem statement

- Design & development of Electric Vehicle for 1.5 Ton passenger carrier (7+1 seater) Small commercial vehicle (SCV)
- Low cost and up to last mile distribution with "GO GREEN the SAVE ENVIRONMENT" for rural and urban sectors
- Commercialize with start-ups, Intellectual Property and/or generate employability
- Global Electric Vehicle Market Analysis & Forecast (2017-2025) Survey shows a significant rise in EV sector demand

Solution

- Complete end to end product designed digitally (used CATIA) and validated digitally (used DYMOLA & simulia)
- Meets the customers requirements.
- Chassis based on the Platform design.
- Studied competitor's product in SCV in India & overseas for ideation / concept building
- Leverage VAVE (VAVE (Vale Analysis Value Eng.) methodology on components/sub-systems
- Developed 'Make or Buy' strategy on sub-systems & components of SCV for cost benchmarking

DESIGN & DEVELOPMENT OF 1.5 TON SMALL COMMERCIAL PASSENGER ELECTRIC VEHICLE USING **3D**EXPERIENCE PLATFORM OF DASSAULT SYSTEMES

By Ravi P.

Digital Plant of ESCV

Concept development — Skeleton & wireframe is designed in CATIA

Product validation — Design is reviewed to check for errors

Process Planning — Part is finalized after correcting errors

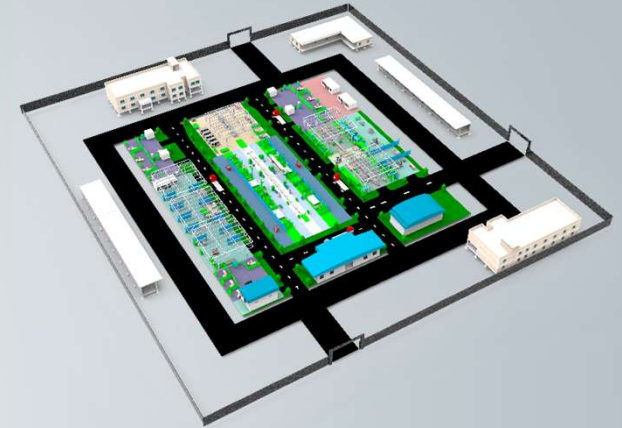**Process Simulation** — Individual componenst are assembled to create a part

Digital factory — Design is optimzed for better performance

Problem statement

- Digital Manufacturing plant of an Electric Vehicle for capacity of 12 vehicles per day.

- Creation of digital twin of Electric Vehicle assembly shop aggregate shops of Battery, Body, Chassis, Axle, Painting and Production Engineering.

- 3D Facilities Modelling of Material Handling Equipment, Storage, Civil, Transfer System & others

Solution

- Optimization of space and productivity for targeted business requirement.

- Achieved 12 Numbers of vehicle capacity per shift

Electric Vehicle

Concept development
Skeleton & wireframe is designed in CATIA

Product validation
Design is reviewed to check for errors

Process Planning
Part is finalized after correcting errors

Process Simulation
Individual componenst are assembled to create a part

Digital factory
Design is optimzed for better performance

Problem statement

- Design & development of Electric   Golf   cart (7+1 seater).
- Low cost and up to last mile distribution with "GO GREEN the SAVE ENVIRONMENT" for
- rural and urban sectors
- Commercialize with start-ups, Intellectual   Property and/or generate employability
- Concept   of Design to be modular concept at Drivelines, Chassis, steering, suspension, Battery units, Body, Interior

Solution

- Complete end to end product designed digitally (used CATIA) and validated digitally (used DYMOLA & simulia)
- Meets the customers requirements.
- Chassis based on the Platform design.
- Studied competitor's product in SCV in India & overseas for ideation / concept building.
- Leveraged VAVE (Vale Analysis Value   Engineering) methodology on components
- /sub-systems
- Developed 'Make or Buy' strategy on   sub-systems & components of SCV for cost benchmarking

E-Cycle

Concept development	Skeleton & wireframe is designed in CATIA
Product validation	Design is reviewed to check for errors
Process Planning	Part is finalized after correcting errors
Process Simulation	Individual componenst are assembled to create a part
Digital factory	Design is optimzed for better performance

Problem statement

- The main point is to reduce the users' effort to control the bicycle without sacrifice the fun of riding.
- To overcome this problem, the bicycle needs to assist with electric motor and it is also offers a cleaner alternative to travel short-to-moderate distance rather than driving a gasoline powered vehicle.
- To comprehend the above problem, development of electric bicycle is essential to study and analyze the need of electric motor, battery and speed controller for designing the electric bicycle that can be programmable.

Solution

- Complete end to end product designed digitally (used CATIA & DYMOLA) validated digitally (used simulia)

- Optimizes ride comfort through MBD solutions vehicle track and steering geometry.

E-Bike

Concept development	Skeleton & wireframe is designed in CATIA
Product validation	Design is reviewed to check for errors
Process Planning	Part is finalized after correcting errors
Process Simulation	Individual componenst are assembled to create a part
Digital factory	Design is optimzed for better performance

Problem statement

- Design & development of Electric Bike with affordable price for small to medium range of transportation.
- Increasing global warming due to consumption of fossil fuels so we decided to "GO GREEN" for our dedication to reducing the carbon footprint.
- the design of electric bike is mainly focuses on development of electric motor and battery. Thus by developing an electric bicycle, the problem can be analyzed theoretically and practically.

Solution

- Complete End to end product designed digitally (used CATIA & DYMOLA) validated digitally (used simulia).

- Studied competitor's product in e-bike in India & overseas for ideation / concept building

- Developed 'Make or Buy' strategy on sub-systems & components of E-bike for cost benchmarking

Unmanned Aerial Vehicle

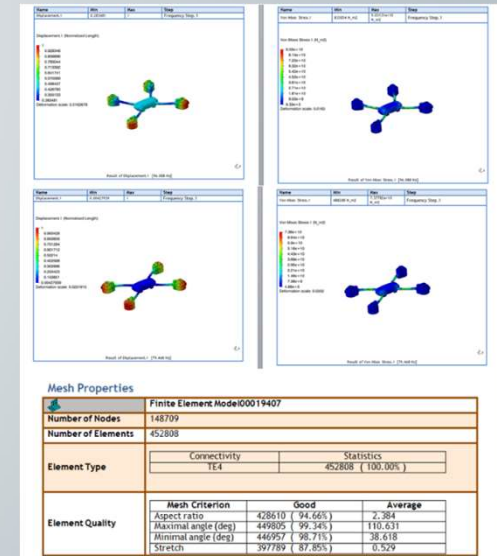| Concept development | Skeleton & wireframe is designed in CATIA |
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Problem statement

- The main scope of our project is to use UAV as a multi purpose work like an Agro drone for spraying pesticides and for surveillance.

- The Problem is that hobbyists ,growers, farmers, and business entities have with UAV technology is that there seems to be some absence of potential market knowledge on such a new and sometimes controversial Product

Solution

- For the execution of our project we have extensively used the following applications to design our 3D Model under brand – CATIA Part Design & Assembly Design (Experience Platform of Dassault Systemes:
- Designing the product as per the calculation
- Checking the aerodynamic test in Simulia
- Rendering the products in 3D Excite.
- Calculation of thrust to drag ratio and lift to weight ratio

Two Ton Pay Load Drone

Concept development	Skeleton & wireframe is designed in CATIA
Product validation	Design is reviewed to check for errors
Process Planning	Part is finalized after correcting errors
Process Simulation	Individual componenst are assembled to create a part
Digital factory	Design is optimzed for better performance

Problem statement

• A drone is an aircraft without a human flight aboard; a flying aboard. Its flight is controlled either autonomously by onboard computers or by the remote control of a pilot on the ground or in another vehicle.

Solution

• A full-fledged digital simulation of a complete drone has been designed and modeled in 3D EXPERIENCE platform of the Dassault systems. The simulations of the model have been achieved and the behavior of the drone analyzed and can be remodified to get desired behaviors and outputs, according to the stakeholders demand. Various components of a drone such as Flight controller, battery, multi-rotor, gimbals for sensor payload mounts, lightweight materials & carbon fibers have been designed in the Design and manufacturing and systems engineering roles which are available in the 3D EXPERIENCE Platform.

3D Printer-Imaginator

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Concept development	Skeleton & wireframe is designed in CATIA
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Problem statement

- Factories of the Future would be using newer and newer technologies, advanced manufacturing methodologies; eliminating waste and enhancing efficiency. To achieve these objectives, manufacturers are increasingly using new technologies, including the Industrial Internet of Things (IOT), Robotics & Additive Manufacturing.

Solution

- The advent of Additive manufacturing aka 3D Printing allows manufacturing of parts of intricate shape with minimal material requirements and still meeting desired strength expectations.

- Advances in Topology Optimization techniques coupled with 3D Printing technology has opened up entirely new spectrum of product design, product re- engineering and manufacturing which would be integral part of the factories of the Future.
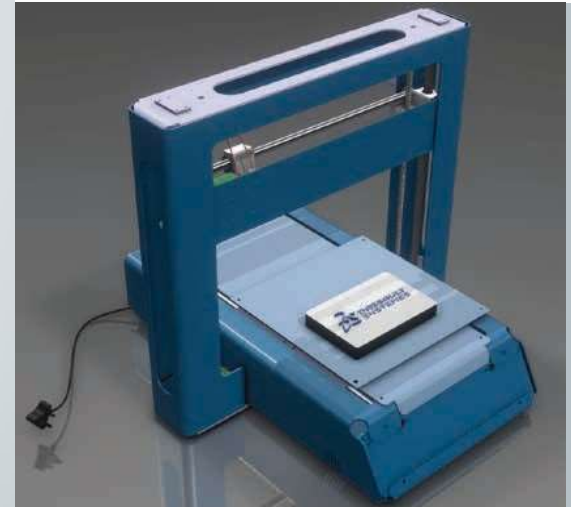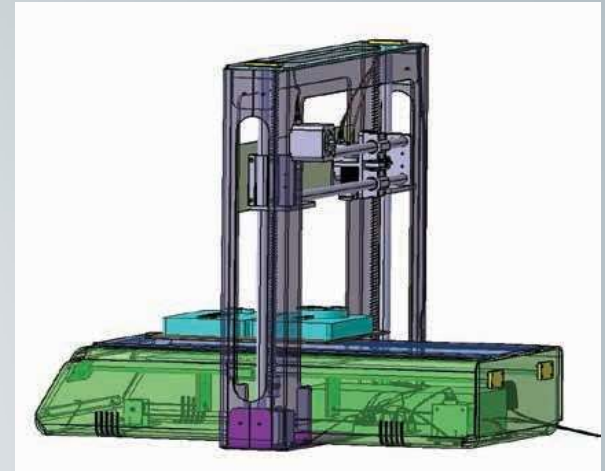
THE WORLD OF HOPES & POSSIBILITIES

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📖 Campuses: Paralakhemundi, Jatni, Raygada, Bolangir, Visakhapatnam & Vizianagram

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