



**SUKALPA TECH**

Commercial Vehicle  
Capabilities



# SERVICES FOR COMMERCIAL VEHICLES

## Design Related

Research & Feasibility Study

Concepts Development

Product Design & Development

Prototyping

CAE Analysis & Simulation

Value Engineering

Tooling, Jigs & Fixture Design

Testing & Validation

## Manufacturing Related

Production Process Design

Plant Layout Design

Equipment & Tools Selection

Process Improvements

Process Documentation

Cost Saving Projects

## Homologation & Other

CMVR Type Approval

FAME-II Certification

Sourcing & Vendor Development

WMI Registration

Plant Accreditation

Training & Development

Staffing Solution



# DESIGN CAPABILITIES FOR ELECTRIC BUS

## Bus Body Design & Development

- Styling (Interior & Exterior)
- BIW Structure
- Panelling
- Trimming
- Painting Scheme
- Component Design
- Testing & Validation
- Competitor Benchmarking
- CAE Analysis



## Chassis, Electric Powertrain Design & Development

- Vehicle Specification
- Vehicle Architecture
- Electrical & Electronics Architecture
- System Sizing & Integration
- Chassis Design
- System Validation
- Thermal Management
- Wiring Harness



# MANUFACTURING CAPABILITIES

## Process Engineering

- Production Process Planning
- Layout Planning
- Facility Planning
- Production Capacity Planning

## Industrial Engineering

- Continuous Improvements
- Time Study & Line Balancing
- Manpower Planning
- Work Instructions Documentation
- Material Flow



## Tools & Fixtures

- BIW Fixture Design & Development
- Assembly Line Tools & Templates
- Machinery Planning
- Panelling & Trimming Fixtures
- Inspection Tools & Gauges
- Trolley Design & Development
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# BUS APPLICATIONS SERVED



**City Bus**



**Coach Bus**



**Sleeper Bus**



**School Bus**



**Articulated  
Bus**

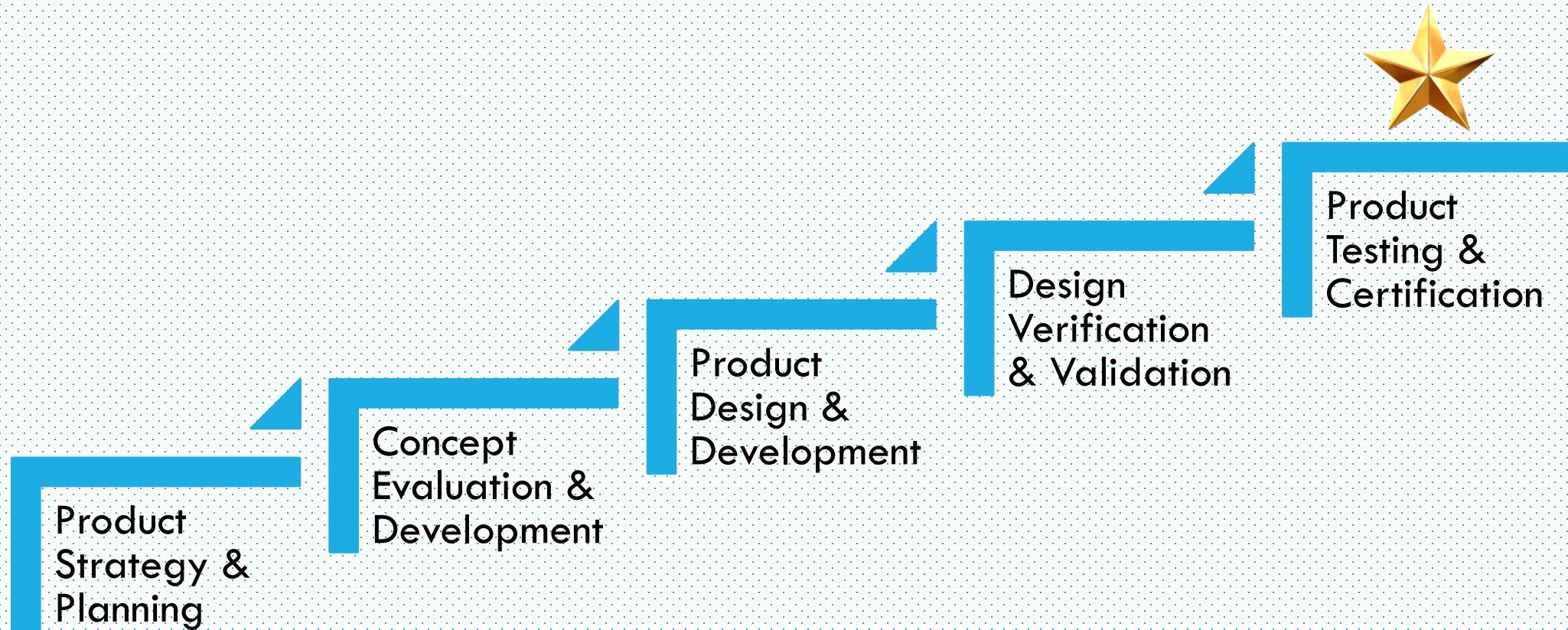


**Ambulance**

Types of Buses



# PRODUCT DEVELOPMENT PROCESS

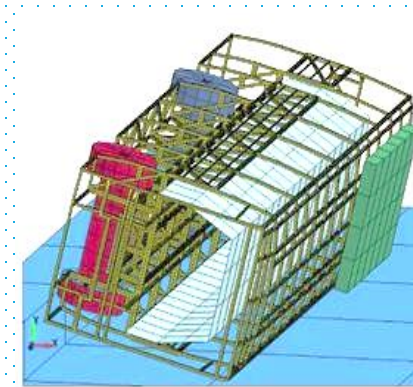




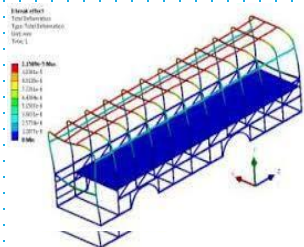


# DESIGN VERIFICATION – SIMULATION BASED

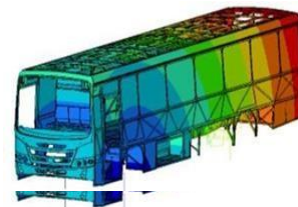
- Strength Of Superstructure of Bus, Rollover Test (AIS :031)
- Bus Stability Test (AIS:052)
- Side Under - Run Protection
- Sleeper Coach Roller And Berth Strength (AIS:119)
- Natural Frequency of Test structure of bus (AIS:153)
- Design Verification as per MoUD Specification (UBS-II)



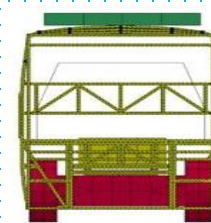
**Rollover Evaluation**



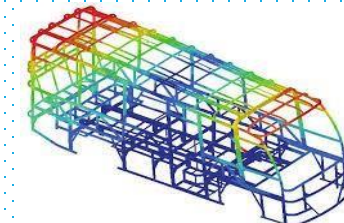
**Strength Evaluation**



**Durability Analysis**



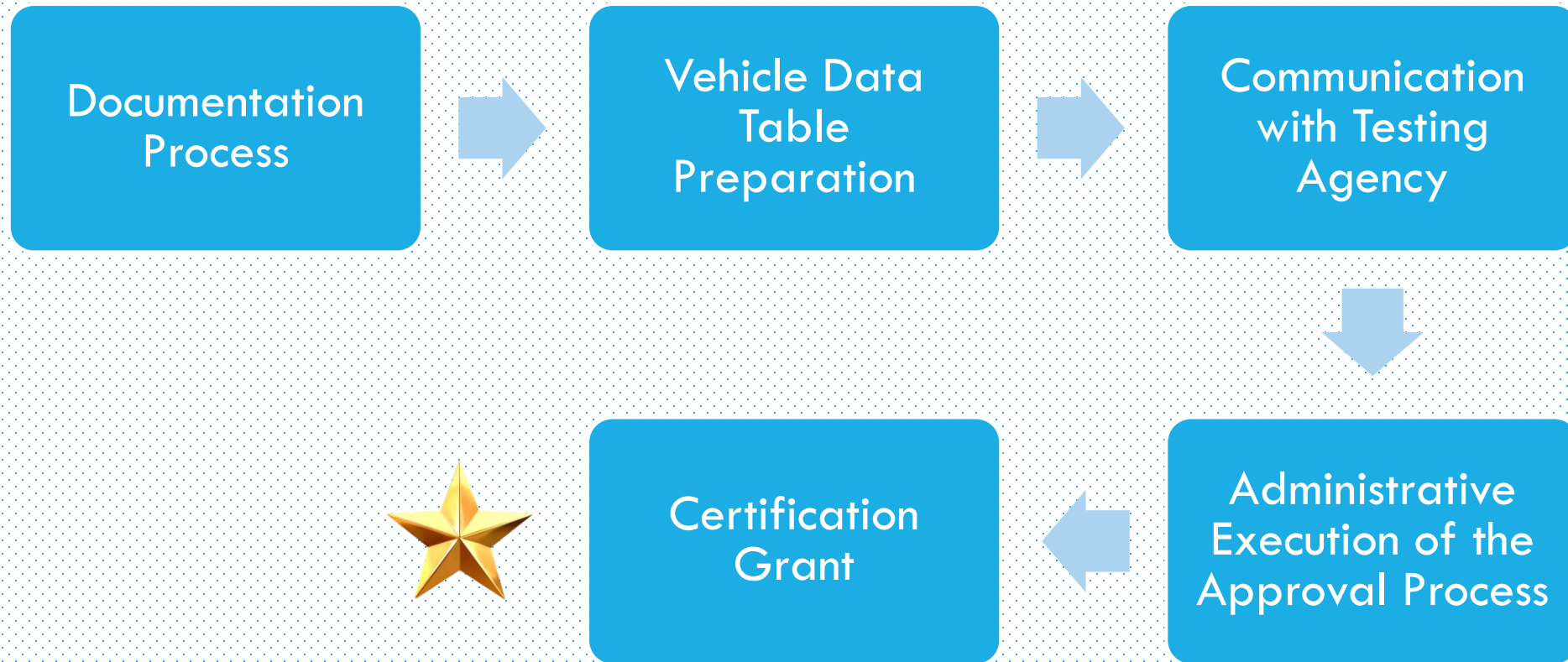
**Stability Test**



**Vibration Analysis**



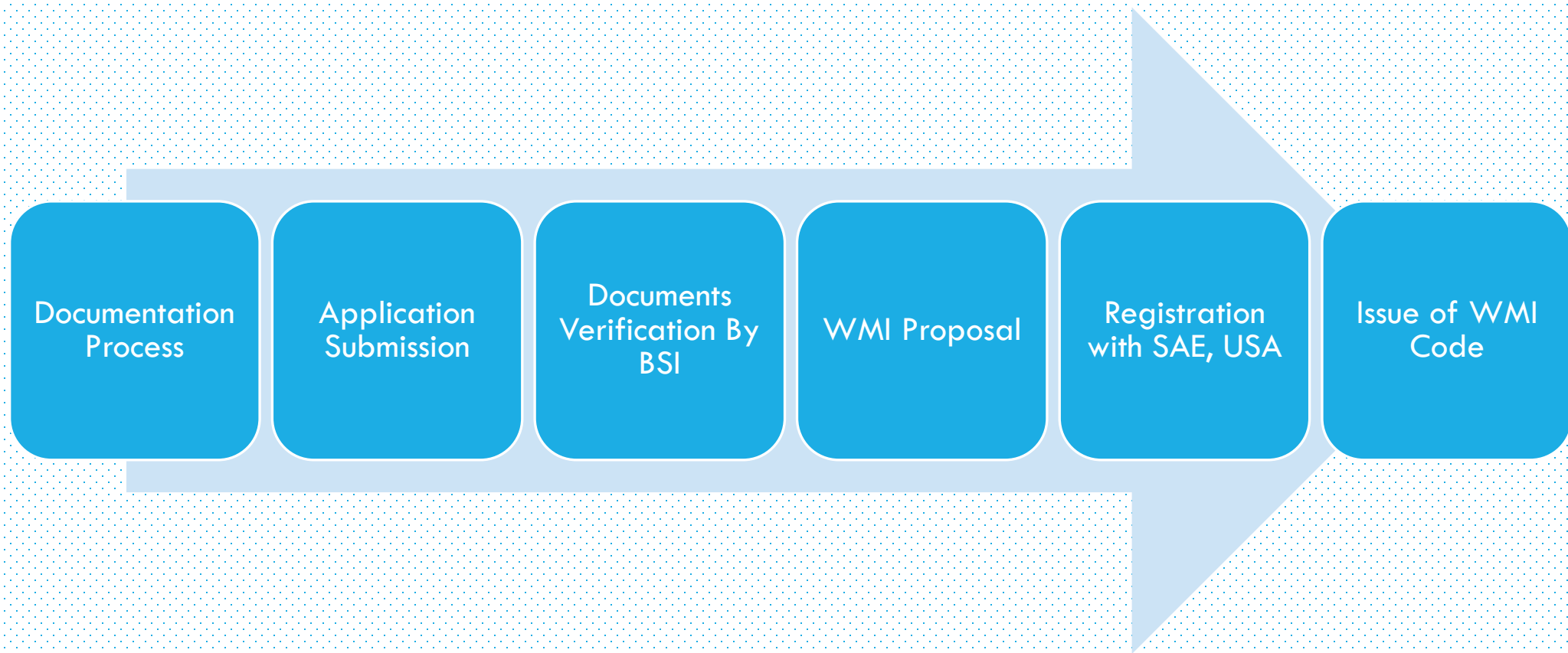
# HOMOLOGATION PROCESS





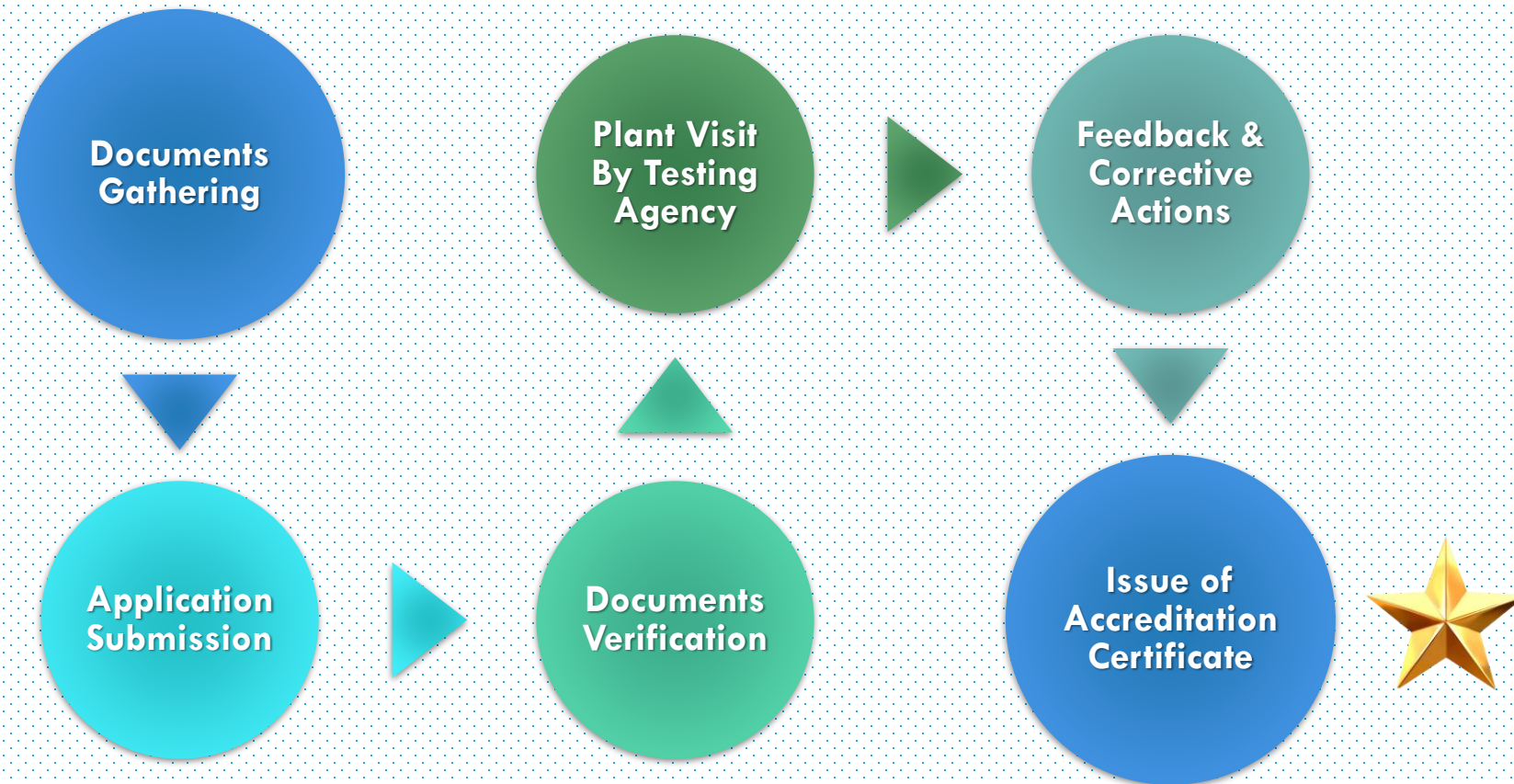


# WMI REGISTRATION PROCESS





# BUS BODY BUILDERS ACCREDITATION PROCESS





# POOL OF EXPERTS FROM BUS INDUSTRY





# CUSTOMERS SERVED FOR BUS SEGMENT





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