**Project 3: Mega ATV Championship**

**Duration:** 21st November 2018 – 20th March 2019  
**Role:** Vice Captain

**Introduction**

Following the successful participation in SAE BAJA and Enduro Student India, I was promoted to the position of **Vice Captain** for the **Mega ATV Championship**, held in Goa from 18th to 20th March 2019. This event was a prestigious platform that tested not only the technical performance of our All-Terrain Vehicle (ATV) but also the endurance, teamwork, and adaptability of the entire crew.

As Vice Captain, my role was to assist the Captain in overall team leadership while directly managing **coordination across subsystems, event strategy, and team logistics**. I also played a critical role in ensuring smooth communication between departments, supervising pit-stop readiness, and maintaining technical reliability during the competition.

**Planning and Preparation**

After the Enduro event, our ATV required modifications to meet the Mega Championship’s unique track conditions, which featured sand, inclines, water crossings, and even **night-time endurance runs**. To address this, we installed **high-intensity auxiliary lights** to ensure clear visibility and safe maneuvering during dark conditions.

As Vice Captain, I coordinated between the **powertrain, suspension, braking, and drivetrain teams** to ensure system-level compatibility.

Key responsibilities included:

* **Overseeing fabrication adjustments** for sand-specific terrain performance.
* **Reinforcing the braking system** to handle wet and slippery track sections.
* **Supervising pit-stop drills** to minimize turnaround times during endurance events.
* **Installing auxiliary lighting** for safe operation during night-time racing.
* **Team coordination**, ensuring each member understood their role and was prepared for emergencies.

**Design and Technical Contributions**

While much of the structural work had been completed earlier, I focused on **fine-tuning system integration** and ensuring that last-minute modifications adhered to safety and performance requirements. Some of my key contributions were:

* Assisting in the **realignment of drivetrain components** to improve power delivery on sand tracks.
* Supporting the **thermal management system** by helping reposition airflow ducts, reducing heat accumulation near the driver’s seat.
* Supervising the **brake testing process**, ensuring reliable performance under wet and muddy conditions.
* Overseeing the **installation and positioning of lights** to provide maximum visibility without blinding other drivers.
* Leading the **pit-stop training program**, where I designed drills for tire changes, refueling, and component checks to be completed within seconds under competitive pressure.

**Event Challenges and Solutions**

During the event, several challenges emerged:

1. **Sand Track Resistance** – Our ATV initially struggled with traction on sandy slopes. To counter this, we quickly adjusted tire pressures and redistributed vehicle weight to optimize grip.
2. **Brake Line Issue** – Midway through endurance testing, the rear brake lines showed early signs of wear. Under my supervision, the team rerouted the lines away from sharp edges, preventing further damage and ensuring uninterrupted performance.
3. **Night Racing Visibility** – Driving in low-light conditions was a major concern. By equipping the ATV with strategically placed high-intensity lights, we ensured clear visibility of obstacles and track boundaries, significantly improving driver confidence and safety.
4. **Time Management in Pit-Stops** – Early trials exceeded expected pit-stop times. I reorganized team responsibilities by assigning **dedicated roles** (e.g., refueling, suspension check, tire replacement), reducing the pit-stop duration significantly.

**Leadership and Teamwork**

As Vice Captain, I supported the Captain in **decision-making, conflict resolution, and inter-departmental coordination**. I also ensured that every team member remained motivated and confident under the intense competition schedule. My leadership extended beyond technical oversight — I handled **team discipline, sponsor coordination, and on-ground logistics** in Goa, including accommodation and workshop arrangements for last-minute repairs.

**Outcome**

By the end of the Mega ATV Championship, our ATV successfully completed all technical inspections and participated in endurance and performance events — including **night runs with auxiliary lighting**. Despite facing challenging terrain and mechanical setbacks, the team’s adaptability and collaborative problem-solving allowed us to compete effectively.

My role as Vice Captain strengthened my ability to:

* **Manage large teams under pressure**
* **Balance technical and administrative responsibilities**
* **Adapt quickly to unforeseen technical challenges**
* **Foster cross-functional collaboration**

**Academic Support and Disclaimer**

As this was a **national-level event**, my Head of Department granted permission for me and my team to miss regular classes during preparation and competition. To ensure there was **no academic loss**, the university arranged **special extra lectures** after the event to cover the syllabus.

Due to the **patented chassis design**, I am unable to share the AutoCAD or CATIA models used for the project. The design remains in active use under intellectual property protection.