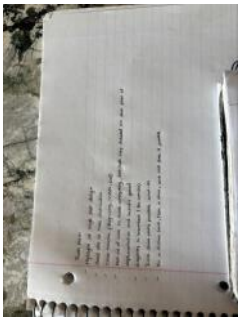
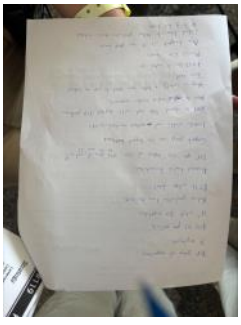
------Buis Prez-------

Wednesday, October 29, 2025 8:18 PM

KS8 Feedback & Review

Sunday, June 29, 2025 7:10 PM





Timelines
Ev Competion

IC Presentation Recordings
- PSAE IC Bus Prez 2025 - Missouri Science & Tech

Business Feedback Meeting

- A lot of similar solution ideas, but you have to take it a step further and make it unique to stand out (Innovation is key)
- Bring out your passion
- Don't be afraid to put details in appendix and then explain it later when asked
- Follow through with the rubric and sell your point why you truly think your solution is the way to go
- This, there, these, and that (Avoid those word when starting a sentence)
- Contemplate your audience in RFP because not all are engineers, need technical but need to be able to tell the story
- Make the Q&A a tool
- 25 Perfect Q&A
- Persuasion, phrases, fix (Have a persuasive enthusiastic framework)
- Give numbers straightforward, don't make audience do calculations and math
- Opinions are important because that is passion, don't be afraid judges are going to disagree your ideas

Timeline
- April 3: Virtual Finalist Annoced
- May 29: EV Virtual Round
- Jan 27: RFP Closes
- Nov 25: Prompt Opens

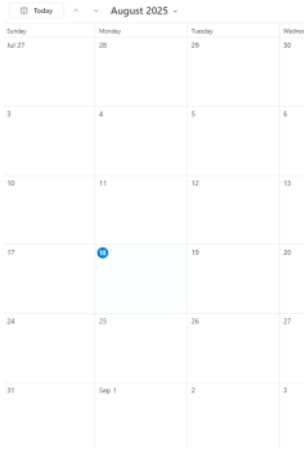
9/13/2025

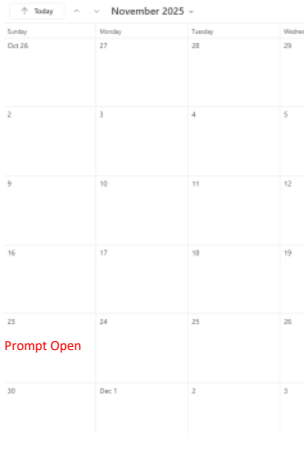
California Fullerton Review
- Design changes goal wasn't well conveyed
- Doing more of the same thing isn't a good justification
- Rules changes seemed obscure
- More engine types to have more opportunities to learn was good
- Didn't talk about implementation

Embry-Riddle Review
- Numbers seemed too large
- Engineer solutions seemed very marketing focus
- Felt more organized in who was talking & why
- Slides had more structure to lead your eyes
- Spliting roles (CEO,CFO,CTO) made it balanced

KSU 2024 EV Review
- Answer questions better
- Provide appendix to judges
- More enthuthiastic during prez

Find Q&A sections





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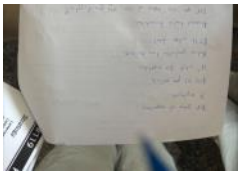

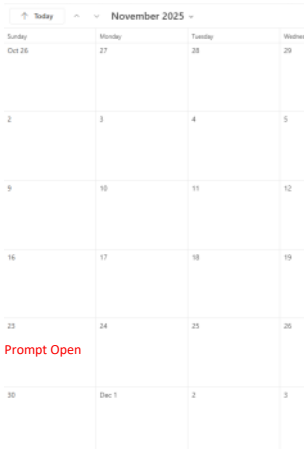
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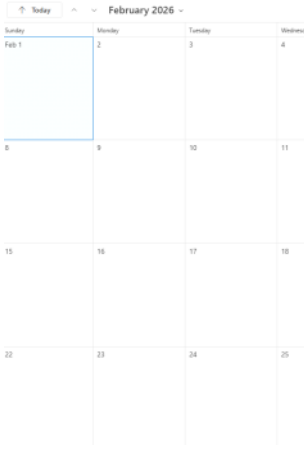
RFP Closes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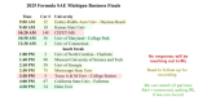
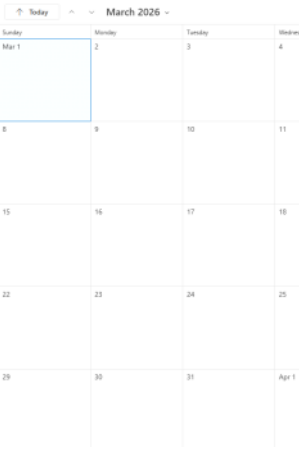
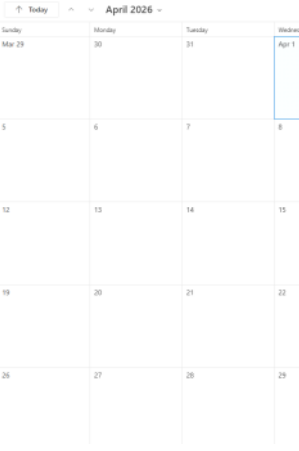
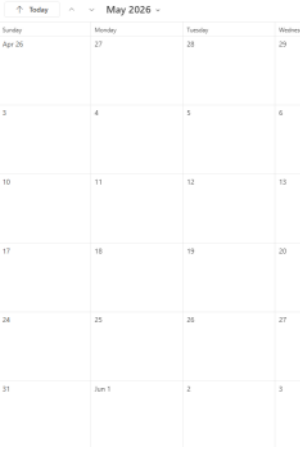
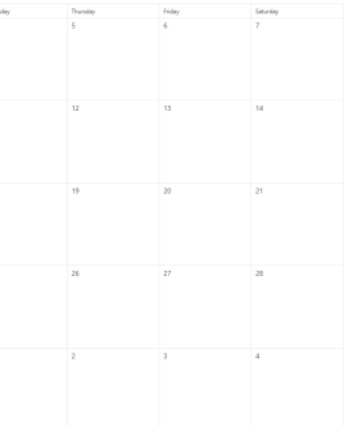
Kansas State Univ	9:30am	10:10am	Abri	Wasim
CBFET-MG	10:10am	10:40am		
Univ of Maryland	10:48am	11:20am	Richard	David O.
Univ of Connecticut	11:28am	12:00pm	Tyler	David T.
Univ North Carolina	1:08pm	1:30pm	Abri	Adi
Missouri Univ	1:36pm	2:80pm	Abri	Jordan
Univ of GA	2:00pm	2:40pm	Abri	Marco
Texas A & M	3:10pm	3:50pm		
California State Univ	3:56pm	4:20pm	Abri	Micha
Duke Univ	4:28pm	5:80pm	Abri	Ben







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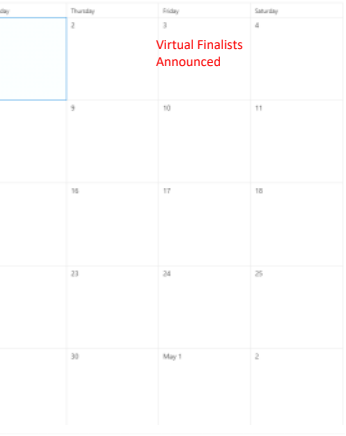
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Virtual Finalists Announced
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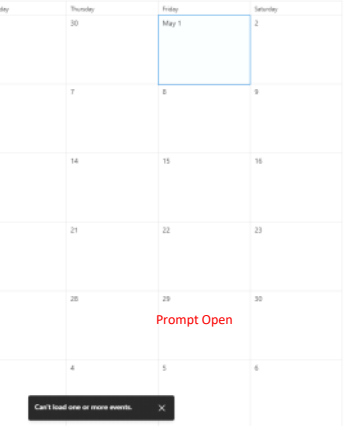
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Can't load one or more events.

11/10/2025 - 1 Meeting

Wednesday, October 29, 2025 8:18 PM

Rules Questions

- "The components of the subsystem must be present on the vehicle at competition" is this for cost or business only?
- Do sponsors have to manufacture the component or it can it be cash
- Reach out to Rebecca and Paul May for a call about this
- Does everything have to be sponsored, or can it be individual components
- ~~Can we argue that we researched a sponsor, but we decided not to follow through~~

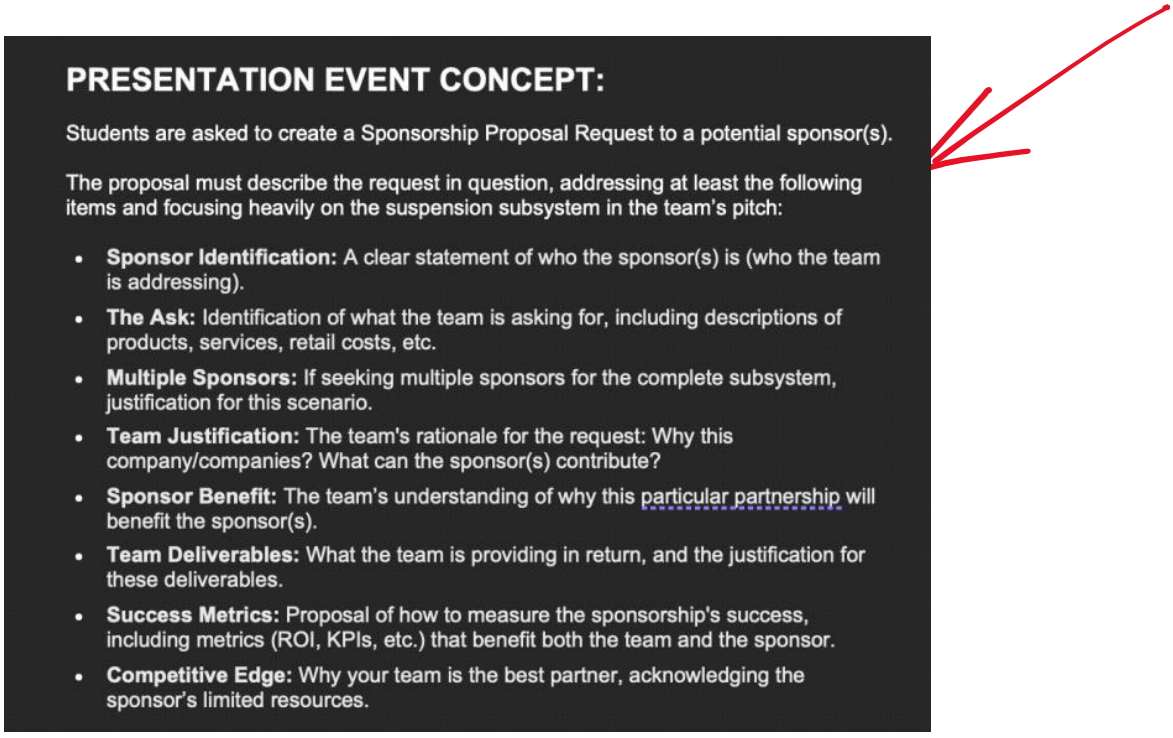
Rebecca

- Do u wanna see specific companies?

- Wasim and Mahi and business guy to do component sponsor list by next week
-

Teams advancing from round 1 will give a virtual presentation to representatives of a prospective sponsor(s) where they will present their proposal and request in greater detail. These representatives have been chosen because they represent engineering, manufacturing, finance and marketing backgrounds. Presenters should discuss the business case for their evolved FSAE vehicle, vehicle design elements, test and manufacturing plans, as well as marketability.

- Sponsors stock for in house manufacturing, claiming innovativeness
  - Take the stuff to someone's machine shop, learn from industry professionals, make more complex parts, more educated student as a result, somethingsomrthing ROI
  - Go to like advanced machine shop, not like local joe schmoe
- Doesn't have to impact performance
  - But can impact the system like data acquisition
    - Companies can use our vehicle as test bed for new product and show its benefits and whatnot
  - Software
    - Sims, storage, data processing,etc
- Understanding part failures and shit
  - Not direct to performance but makes a better engineer



11/12/2025 - 2 Meeting

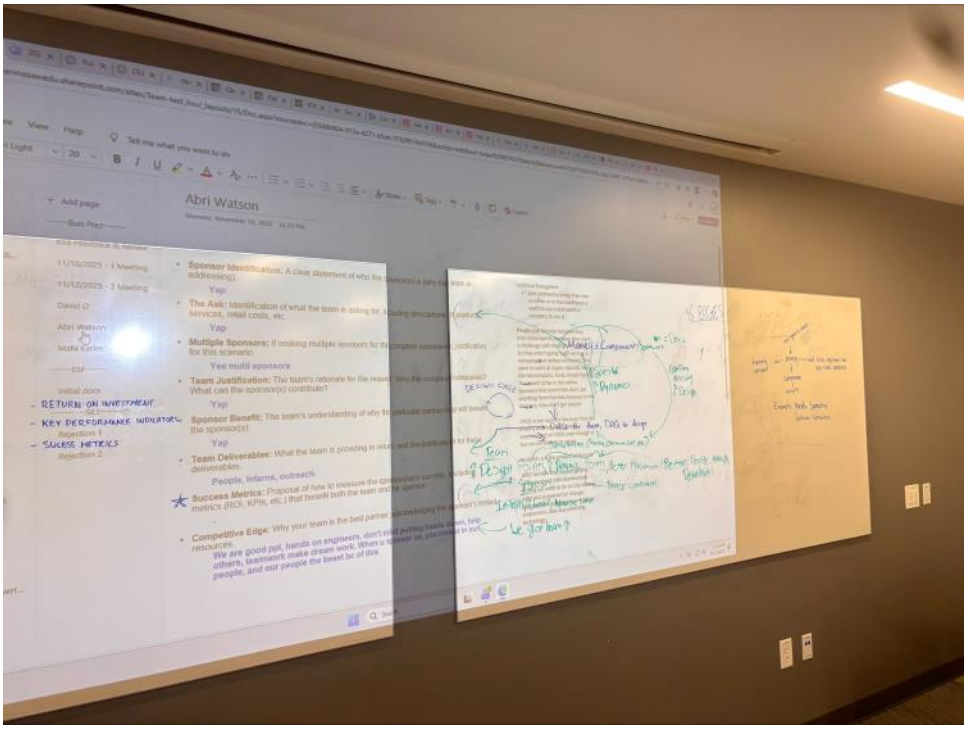
Wednesday, November 12, 2025 9:45 PM

Events

- Local Events
- Barnesville
- Formula South
- School Events
    - Instagram, school, local community outreach & member outreach for interns

Bring 2-3 ideas to Rebecca or Paul May

1. Feeding Future Students, money for components, training & outreach, multiple sponsors
    a. Same thing as 4 tbh
2. ~~Software for design points, money + components for dynamic points, multiple sponsors~~
    a. You can collect other data
    b. Generative design, part optimiation, advanced simulations
        i. Siednote: Rolls-royce
3. Sammies best suspension setup, multiple companies, testing, newer suspension companies, not multimeric
    a. Low hanging fruit
        i. Maybe built out better
4. **We get stock & money, build our own shit, making better engineers, companies do advance manufacturing techniques (metal 3d printed bell cranks or uprights)**
    a. Identify what a well rounded engineer is
    b. Networking and knowledge
    c. How does better engineers help companies?
    d. Interactions with industry professionals while in school
        i. Mini internship
    e. Difference between regular student and formula student
        i. Whos getting hired? Whats the quality of the engineer?
5. MIddle Ground
    a. Work with local shops for higher quality components and more initimate sponosr realtions
        i.


Abri Watson
RETURN ON INVESTMENT
KEY PERFORMANCE INDICATORS
SUCESS METRICS

11/18/2025 - 3 Meeting

Tuesday, November 18, 2025 7:35 PM

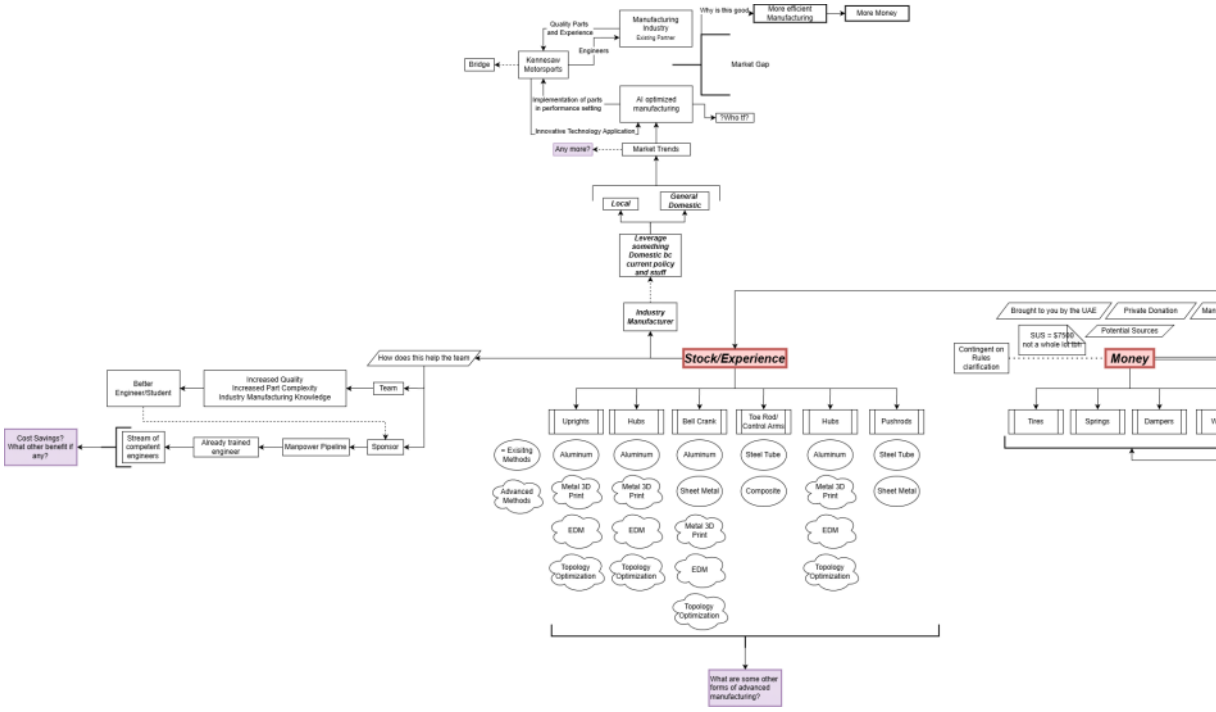
The Direction

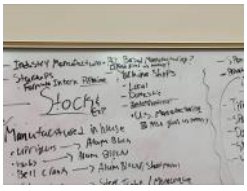
1. **We get stock & money, build our own shit, making better engineers, companies do advance manufacturing techniques (metal 3d printed bell cranks or uprights)**
   a. Identify what a well rounded engineer is
   b. Networking and knowledge
   c. How does better engineers help companies?
   d. Interactions with industry professionals while in school
      i. Mini internship
   e. Difference between regular student and formula student
      i. Whos getting hired? Whats the quality of the engineer?

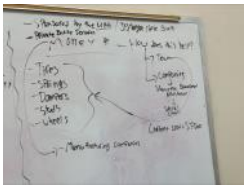
Attendance
Mahi
David O
Abri
Reece
Noah
Jonathan N

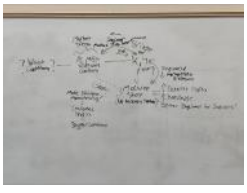
DEC 2nd Rough Draft Deadline

- **Sponsor Identification:** A clear statement of who the sponsor(s) is (who the team is addressing). (Reece, Jonathan N, Noah)
- **The Ask:** Identification of what the team is asking for, including descriptions of products, services, retail costs, etc. (Reece, Jonathan N, Noah)
- **Multiple Sponsors:** If seeking multiple sponsors for the complete subsystem, justification for this scenario. (Reece, Jonathan N, Noah
- **Team Justification:** The team's rationale for the request: Why this company/companies? What can the sponsor(s) contribute? (David O, Abri,
- **Sponsor Benefit:** The team's understanding of why this particular partnership will benefit the sponsor(s). (David O, Abri
- **Team Deliverables:** What the team is providing in return, and the justification for these deliverables. (David O, Mahi
- **Success Metrics:** Proposal of how to measure the sponsorship's success, including metrics (ROI, KPIs, etc.) that benefit both the team and the sponsor. (David O, Noah, Mahi
- **Competitive Edge:** Why your team is the best partner, acknowledging the sponsor's limited resources (Mahi, Abri









Static events Page 11


facturing Company
One Sponsor?
How does this help
Team
Business
??????

Tuesday, November 18, 2025 8:17 PM

David O

Thursday, November 6, 2025 8:47 PM

Kennesaw Motorsports SPR.docx

2026_FSAE_Integrated_Presentation_Concept_and_Cost_Scenario.docx

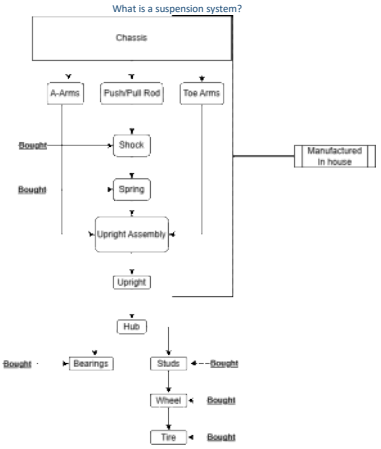
Things to understand

- Understand suspension design
  - Suspension components
    - 11 total
      - 5 Made in house
      - 6 Bought
    - Critical Pieces
      - Tires; dictate everything
      - Minimal Weight required
        - Unsprung mass NG
        - Top 3 Culprits (Verify with Component weight spreadsheet)
          - Shocks
          - Upright
          - Hub
  - Take a look at suspension design binder and newbie classes
    - Speak **Briefly** about other complimenting subsystems to take in consideration
      - Also keep in mind that this is a Business-centric event, don't just spill a bunch of engineering mumbo-jumbo.
  - What KPI's/ROI's are useful for external companies?
    - What do companies get out of this?
      - What are WE looking for?
    - What is the criteria for a company to potentially sponsor
  - Who the hell are Suspension Companies?
- Don't stray from the prompt
  - Get OUT of the sauce
  - Think like a Technical PM
- Money V. Parts
  - Could like a bank give us money versus like custom multimatic dampers\
- **Overall benefit for team and car**

Hwat are they asking for

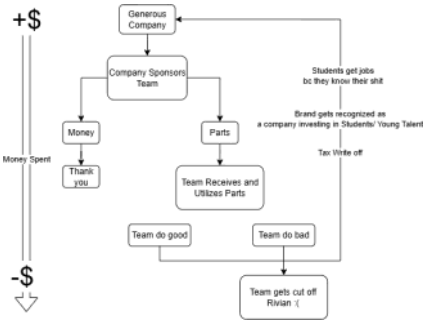
- **Sponsor Identification:** A clear statement of who the sponsor(s) is (who the team is addressing).
  - Small Market startups
    - FSAE based/rooted startups from alumni
      - ROI and KPOI with money and people and reputation in competition
  - Manufacturing companies
    - Leverage in house manufacturing
      - Developing manufacturing focused students, reducing costs in company ROI
        - Don't have to hire another manufacturing guy, reduce hiring costs, etc
    - Cheaper to produce compared to in house
      - Do we need to validate money/prioritize being cheap?
        - Leverage vehicle cost as a critieria?
          - Competitive Edge, Team Justification
  - Component Companies
    - Components
      - Shock
        - **Penske Racing Shocks** (apparently somewhat used in FSAE idk how true that is)
          Link: https://www.penskeshocks.com/
        - **JRi Shocks** (According to websites, Adjustable dampers suitable for student teams [need to fact check])
          Link: https://jrishocks.com/
      - Spring
        - **Essex Parts** (Headquarters is in NC but have authorized vendors in Athens)
          Link: https://www.essexparts.com/formula-sae
        - **Hyperco** (Based in Mississippi)
          Link: https://www.hyperco.com/shop/coilover-springs
        - **KAZTechnologies** (HQ is in NC) (Has Success Stories in Racing; Formula 1, Indy Car, IMSA,WEC, and Pro Stock Drag Racing) (We already use Ohlin Springs)
          Link: https://kaz-technologies.myshopify.com/
        - **Eibach** (Motorsports heritage for 35 years)
          Link: https://eibach.com
        - **QA1** (Motorsports Springs and Dampers, possibly has student team discounts/sponsors)
          Link: QA1.net
      - Bearings
      - Studs
      - Wheel
      - **Tires**
        - Hoosier Tire West (Tires already in use)
        Link: https://www.hoosiertirewest.com/
    - **Gotta do it all, not just one component**
- **The Ask:** Identification of what the team is asking for, including descriptions of products, services, retail costs, etc.
  - Manufacturing
    - Professional Mfg experience from established manufactures
      - Must go back to some kind of business ROI
      - Stock sponsored > we manufacture at someone place
    - Cheap/At Cost Components
      - Get cheap parts to maintain a low cost high scoring vehicle, and pipeline to industry ready engineers.
        - Do sponsors care about how we place and how much we cost?
          - Arguably yes since we show that we can work within given resources and compete at a high level which results in better engineers.
        - Build Local relations and ties to the community through local shops.
  - Manufacturing Ability, Time, and Cost
    - Help realize possible efficiencies and potential quality in manufacturing
    - Teach Engineers to get more manufacturing engineers
      - Leverage US manufacturing emphasis
      - Leverage Tariffs
        - US Customs delays
    - Emphasize lack of machining equipment
      - 2 mini mills, 1 CNC Lathe, a broken waterjet, sparse hand tools
        - What do they get out of this?
    - Tooling Companies
      - We need OK tooling to produce great parts
        - What do they get out of it?
- **Multiple Sponsors:** If seeking multiple sponsors for the complete subsystem, justification for this scenario.
  - Justify point 2
    - Justification lies in the bullet points
- **Team Justification:** The team's rationale for the request: Why this company/companies? What can the sponsor(s) contribute?
  - What do we get out of companies?
    - Money, parts, knowledge
- **Sponsor Benefit:** The team's understanding of why this particular partnership will benefit the sponsor(s).
  - What do we give?
    - Refer to flowchart
      - Is this shit even right?
    - Team visibility
      - Visibility at events
      - Visibility on car
    - Ask FSAE sponsors and judges of team rep
      - Known for everything but top 10
        - NG engineer if they cant work on a team
- **Team Deliverables:** What the team is providing in return, and the justification for these deliverables.
  - Refer to flowchart
    - Partnership? Conctractual Obligation?
      - Think of like OXOS
        - They sponsor, we give them interns
- **Success Metrics:** Proposal of how to measure the sponsorship's success, including metrics (ROI, KPIs, etc.) that benefit both the team and the sponsor.
  - What are general success metrics?
    - ROI, KPI,
      - Performance = ROI
      - General KPI
        - Top 10
        - Vehicle SRR
      - System KPI
        - Lateral force
        - Circle back with Sammy
  - Benefit the team
    - How do their parts benefit system KPIS
      - What are our system KPI's
        - Answered in the last point
  - Benefit Sponsors
    - ROI on young engineering investment
      - Difference in advertising
        - General hiring and training costs versus tabling / recruiting from FSAE
      - Find/make up the numbers
        - How do FSAE engineers benefit companies more than a typical
          - Speak with company HR about ROI on these types of employee
          - Anonymous survey for old men about their salaries

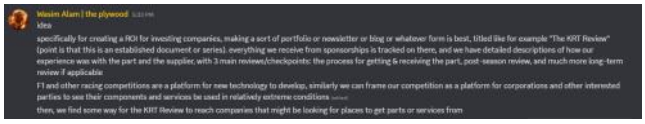
- **Competitive Edge:** Why your team is the best partner, acknowledging the sponsor's limited resources.



Suspension Assemblies

Title	Part #	Quantity	Total Cost	Actions
Bell Cranks	A70100-AA	4	$32.72	View
Front Upper A-Arms	A70200-AA	2	$66.70	View
Front Lower A-Arms	A70300-AA	2	$96.18	View
Front Uprights	A70400-AA	2	$76.12	View
Pushrods/Pullrods	A70500-AA	4	$80.12	View
Rear Upper A-Arms	A70600-AA	2	$54.88	View
Rear Lower A-Arms	A70700-AA	2	$65.10	View
Rear Toe Rod	A70800-AA	2	$54.64	View
Rear Uprights	A70900-AA	2	$84.42	View
Damper Shocks	A71000-AA	4	$1,324.40	View
Set up	A71600-AA	1	$35.00	View
Rear Bulkhead Plate	A73000-AA	1	$203.63	View



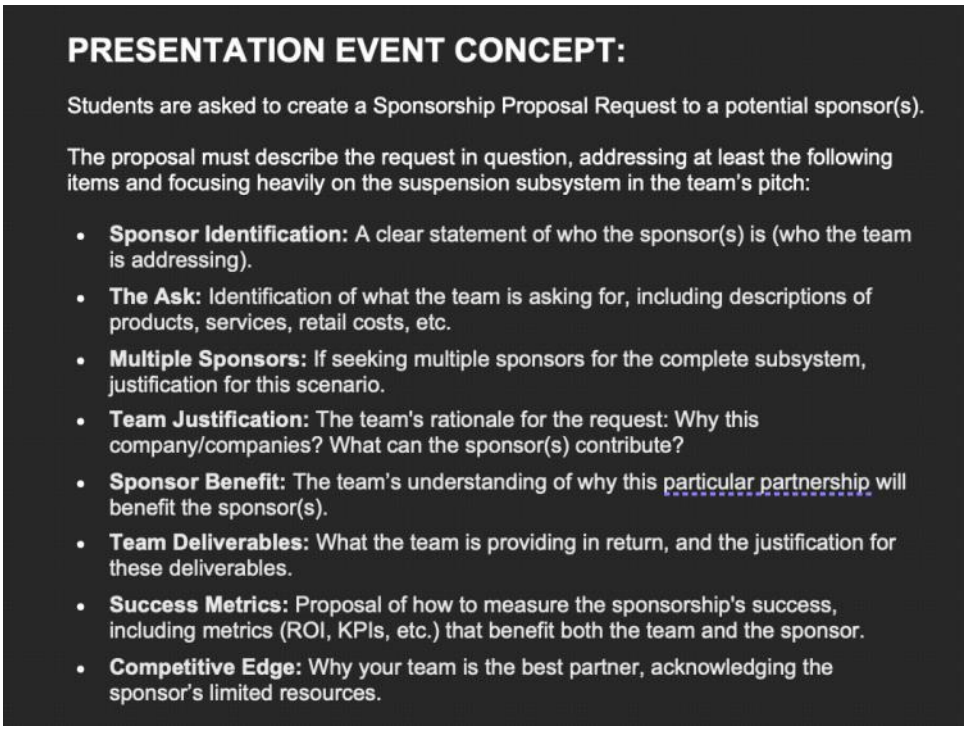


This is good

- Built v. bought
  - We built baby

TSA (Thiago)

Friday, November 14, 2025 11:20 PM



- Sponsor identification- smaller companies or sister / child companies. Easier to work one on one, easier to use the free exposure explanation as compared to a multi-billion dollar company-neeed to make sure the company we choose has same values "grassroots" like we are. Preferably takes pride in manufacturing their own parts and being a pioneer in their respective industries
- The ask- might be easier to ask for manufacturing and money so we don't have to go from one sponsor to another and can drill one specific company maybe two worst case.
- Multiple sponsors-if decided its what is best for us
- Team justification-think deeply about Kennesaw state its background and the teams history and why we feel this company will be our mustard to our hotdog.
- Sponsor benefit- I really liked the idea about free job fairs like with the rivian I think that's a great way to get them involved directly into talking to potential employees and can have dedidcated day and not have to sign up for job fair like other companies. Im not too

sure yet what we could give them for now other than that and potential testing and workforce.

- Team deliverable-feel like I said this earlier but basically interships, exposure to the future of the workforce and potential testing of their products

Abri Watson

Monday, November 10, 2025 11:23 PM

- **+Sponsor Identification:** A clear statement of who the sponsor(s) is (who the team is addressing).

  Yap

- **The Ask:** Identification of what the team is asking for, including descriptions of products, services, retail costs, etc.

  Yap

- **Multiple Sponsors:** If seeking multiple sponsors for the complete subsystem, justification for this scenario.

  Yes multi sponsors

- **Team Justification:** The team's rationale for the request: Why this company/companies? What can the sponsor(s) contribute?

  Yap

- **Sponsor Benefit:** The team's understanding of why this particular partnership will benefit the sponsor(s).

  Yap

- **Team Deliverables:** What the team is providing in return, and the justification for these deliverables.

  People, interns, outreach

- **Success Metrics:** Proposal of how to measure the sponsorship's success, including metrics (ROI, KPIs, etc.) that benefit both the team and the sponsor.

  -

- **Competitive Edge:** Why your team is the best partner, acknowledging the sponsor's limited resources.

  We are good ppl, hands on engineers, don't mind putting heads down, help others, teamwork make dream work. When u sponsor us, you invest in our people, and our people the beset bc of this

Technical Evangelism

- Use solidworks/ansys free now so when ur in the workforce u want to use it and want ur company to use it

People join formula because they love motorsports, because they want a challenge with the highest regard So they aren't going to go work at a company that makes lubricants. They want to work at Apple, SpaceX, Tesla, GM Motorsports, Ford, Honda Racing. They want to be in the action. Sponsors that aren't this don't get anything from Formula because in the long run, they don't get people

OXOS is our sponsor because they get interns who love the startup environment of OXOS even though it has no correlation to racing

Students are the product of formula

With formula and market getting more involved with Autonomous driving we want to be on the leading edge and prepared for change. Autonomous suspension, predictive suspension, data acq collecting technology

Mahi Karim

Tuesday, November 11, 2025 7:40 AM

My Interpretation of the Prompt

A. Sponsor Identification

Who you are asking (one or several companies)

- Number of customers/industries they support (hard to find)
- Number of years sponsors have been in business

B. The Ask

What exactly you need:

- Components
- Manufacturing Support
  - Machine-hours needed
  - Tooling time
- Materials
- Systems
- Money
- Services or Machining

C. Team Justification

Why this company?

- Industry Expertise
  - Lead Time versus other companies (example: Their lead time: 3-5 days vs industry average 14-21 days)
  - Machining Tolerance Capability versus our requirement
- Local Connections
- Their tech matches the subsystem

E. Sponsor Benefit

How this partenrship helps them:

- ROI/KPI
- Branding
  - Sticker on Car
  - Logo on Website
- Test Data
  - Test Hours generating data for them
  - Components using their Material or Machining
- Exposure
  - Instagram and LinkedIn Thank you post (Can include follower numbers, instagram impressions to quantify)
- Recruiting
  - Percent of Graduating Students hired into similar industry (unlikelly for Suspension)
  - Number of students per year trained in sponsor's workflow
  - First access to hiring industry ready students

F. Team Deliverables (Goes hand in hand with Sponsor Benefit)

What we give in return:

- Marketing
- On-car logo placement (Look at Sponsor Benefit)
- Data Reports
- Social Media Visibility (Look at Sponsor Benefit)
- VIP Event Accesss
  - For our sponsors who give more $$$, they can request for us to bring car to any event
  - We can invite these companies to Formula South, to table and showcase their product/service (quantify the amount of teams and people are their to spectate and compete
    - Why is this important?
      - Other teams can see the companies we use and potentially reach out for business
      - Other students on those teams could potentially want a job at those companies
      - Include the amount of people come out to these events

A. Success Metrics

- Social Metrics
  - Event attendance numbers (Barnesville, Formula South, EV and IC Comp)
  - Social Impressions
    - Could include the dollar amount companies would pay in marketing to get those impressions versus what we can give them for just sponsoring (parts costs)
- Race Performance
  - Michigan Placement
  - Time increase lap times
- Manufacturing Learning Outcomes
  - Retail cost savings
  - Lead time reduction
- Engineering Improvements
  - Manufacturing time reduction
  - Testing hours logged
  - Failed rate reduction

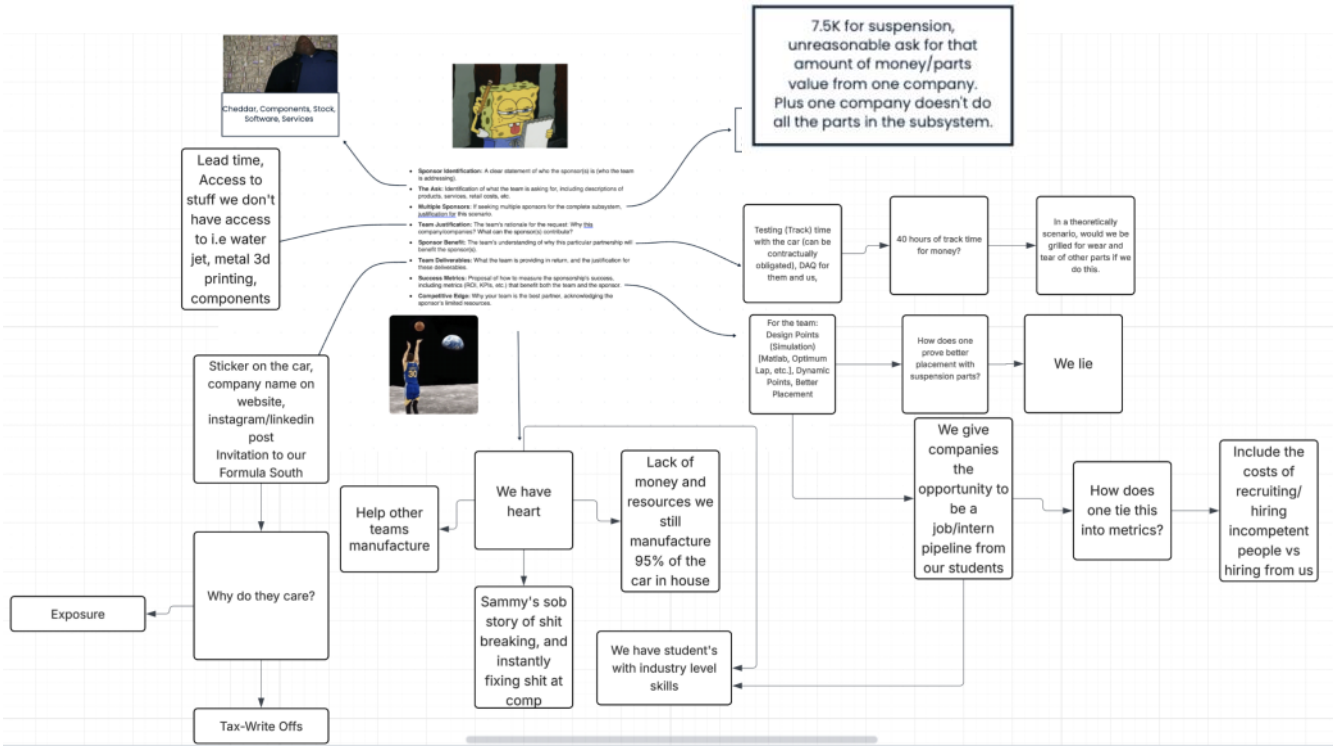
B. Competitive Edge

Why do we deserve the partnership versus other teams?

- We are one of the only teams in FSAE to build 95% of the car in-house
  - How can we do this?
    - Our system of teaching new members proper engineering practices and real world application
    - Can do all of this work with the lack of resources
    - Sammy's story about shit breaking of the car, and it was fixed at comp.

KPI/ROI

- Contractually giving people jobs from KM, cannot force students to intern that’s illegal but can give recommendation pipeline.


Cheddar, Components, Stock, Software, Services
7.5K for suspension, unreasonable ask for that amount of money/parts value from one company. Plus one company doesn't do all the parts in the subsystem.
Lead time, Access to stuff we don't have access to i.e water jet, metal 3d printing, components
Testing (Track) time with the car (can be contractually obligated), DAQ for them and us,
40 hours of track time for money?
In a theoretically scenario, would we be grilled for wear and tear of other parts if we do this.
For the team: Design Points (Simulation) [Matlab, Optimum Lap, etc.], Dynamic Points, Better Placement
How does one prove better placement with suspension parts?
We lie
Sticker on the car, company name on website, instagram/linkedin post
Invitation to our Formula South
We have heart
Help other teams manufacture
Lack of money and resources we still manufacture 95% of the car in house
We give companies the opportunity to be a job/intern pipeline from our students
How does one tie this into metrics?
Include the costs of recruiting/ hiring incompetent people vs hiring from us
Why do they care?
Exposure
Sammy's sob story of shit breaking, and instantly fixing shit at comp
We have student's with industry level skills
Tax-Write Offs

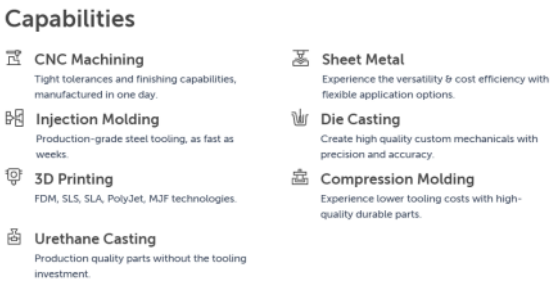
Tuesday, November 18, 2025 8:17 PM

Sponsor Identification

Tuesday, November 18, 2025 8:17 PM

A clear statement of who the sponsor(s) is (who the team is addressing). (Reece, Jonathan N, Noah)

Brainstorming

Name	Specialization	Location	Link
DBS Technologies	 ○ General additive and subtractive manufacturing capabilities	Wisconsin	https://www.dsbtech.com/technology-portfolio
Fictiv	 ○ Automotive Applications ○ Ties to major Automotive brands	California	https://www.fictiv.com/automotive
Samuel Automation ○ Slightly different industry	 ○ Assembly line	Ontario	https://www.samuelautomation.com/
Collins Aerospace	 ○ "AI driven design"	Georgia	https://www.collinsaerospace.com/

	Advanced materials We're using lightweight, high-performance acoustic-attenuating materials, recyclable thermoplastics and high-temperature carbon composites to engineer components capable of reducing aircraft noise, improving fuel efficiency and ensuring operation in even the harshest environments.	**Innovative manufacturing technologies** We're combining the latest in automation and digital technology with our expertise and production infrastructure to create lighter-weight, higher-performance structures at high production rate demand.		

The Ask

Tuesday, November 18, 2025 8:17 PM

Identification of what the team is asking for, including descriptions of products, services, retail costs, etc. (Reece, Jonathan N, Noah)

Multiple Sponsors

Tuesday, November 18, 2025 8:18 PM

If seeking multiple sponsors for the complete subsystem, justification for this scenario. (Reece, Jonathan N, Noah)

Team Justification

Tuesday, November 18, 2025 8:18 PM

The team's rationale for the request: Why this company/companies? What can the sponsor(s) contribute? (David O, Abri)

Sponsor Benefit

Tuesday, November 18, 2025 8:34 PM

The team's understanding of why this particular partnership will benefit the sponsor(s). (David O, Abri)

People to Speak with

- Dinda De Klerk
    - BMW Hiring
- Ashley Kosal
    - Honda Hiring
- ATS Recruiter
- Delta Recruiter
- Oxos Recruiter
- NDT Recruiter
- Rivian
- Lucid
    - Bailey Graham

The Pitch

Hello [Insert name],

Hope all is well, I was/am [Insert Previous Experience/Affiliation] and I was wondering if you had time to chat or give more information about how helping collegiate engineering teams affects your hiring process for our FSAE Business Case Presentation.

The business case presentation is requiring us to seek sponsorship from companies to sponsor our vehicles suspension sub system components and the information you provide will, hopefully, help reinforce how sponsoring a collegiate engineering design team benefits you, the company.

A couple things that come to mind are…

The benefits of hiring an engineer with established manufacturing/design experience saves you in terms of onboarding/training costs, maybe even quality of projects/work.

How are

Team Deliverables

Tuesday, November 18, 2025 8:34 PM

What the team is providing in return, and the justification for these deliverables. (David O, Mahi)

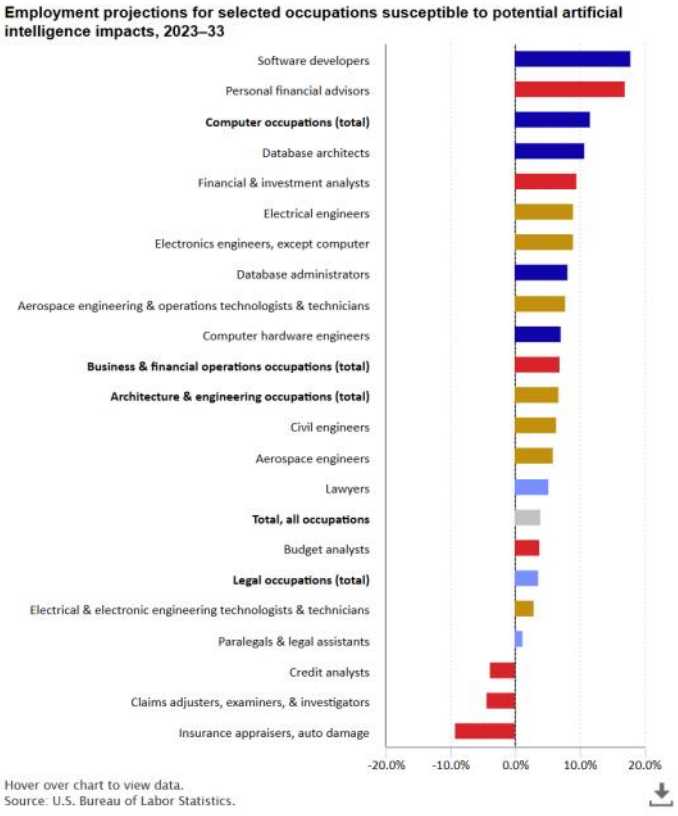
Success Metrics

Tuesday, November 18, 2025 8:35 PM

Proposal of how to measure the sponsorship's success, including metrics (ROI, KPIs, etc.) that benefit both the team and the sponsor. (David O, Noah, Mahi)

Some things

- US Projected 33% Manufacturing Growth through 2033
  - https://archive.ph/h5LMb
- https://archive.ph/07pgN



Employment Projections

EMP

National Employment Matrix

541330 Engineering services
Employment by industry, occupation, and percent distribution, 2024 and projected 2034.

Employment in thousands.
Occupations with fewer than 50 jobs, confidential data, or poor-quality data are not displayed.

Download CSV

Show All entries

Occupation Title	Occupation Code	Occupation Type	2024 Employment	2024 Percent of Industry	2024 Percent of Occupation	Projected 2034 Employment	Projected 2034 Percent of Industry	Projected 2034 Percent of Occupation	Employment Change, 2024-2034	Employment Percent Change, 2024-2034	Display Level
Search	Search										
Total, all occupations	00-0000	Summary	1,179.6	100.0	0.7	1,228.9	100.0	0.7	49.3	4.2	0
Architecture and engineering occupations	17-0000	Summary	533.2	45.2	20.1	556.3	45.3	20.0	23.2	4.3	1
Engineers	17-2000	Summary	366.1	31.0	20.5	384.5	31.3	20.1	18.4	5.0	2
Civil engineers	17-2051	Line Item	190.3	16.1	51.6	199.2	16.2	51.4	8.9	4.7	3
Business and financial operations occupations	13-0000	Summary	161.4	13.7	1.4	169.9	13.8	1.4	8.5	5.3	1
Business operations specialists	13-1000	Summary	140.3	11.9	1.8	147.8	12.0	1.8	7.5	5.4	2
Management occupations	11-0000	Summary	133.5	11.3	1.0	141.3	11.5	1.0	7.8	5.8	1
Drafters, engineering technicians, and mapping technicians	17-3000	Summary	133.6	11.3	20.8	136.9	11.1	21.0	3.2	2.4	2
Computer and mathematical occupations	15-0000	Summary	99.8	8.5	1.8	107.2	8.7	1.8	7.4	7.4	1
Computer occupations	15-1200	Summary	94.8	8.0	1.9	100.9	8.2	1.9	6.0	6.4	2
Office and administrative support occupations	43-0000	Summary	81.7	6.9	0.4	78.9	6.4	0.4	-2.8	-3.4	1

Competitive Edge

Tuesday, November 18, 2025 8:35 PM

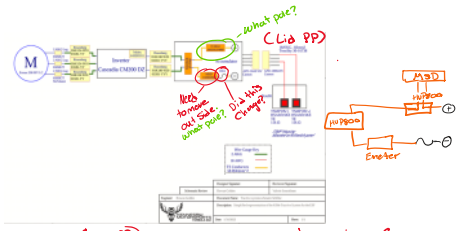
Why your team is the best partner, acknowledging the sponsor’s limited resources (Mahi, Abri)

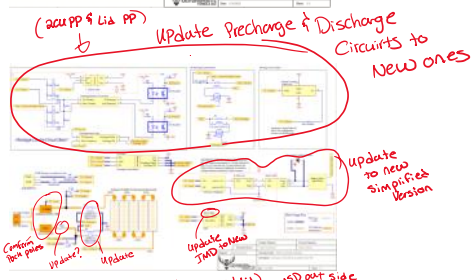
------ESF------

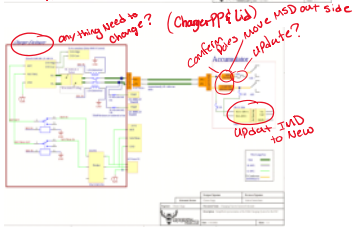
Wednesday, October 22, 2025 7:51 PM

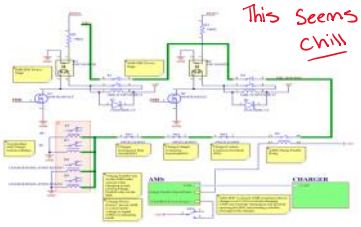
Initial docs

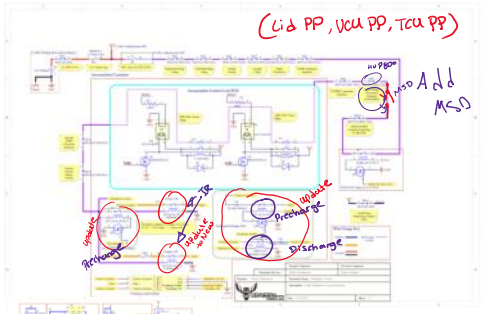
Wednesday, October 22, 2025 10:15 PM

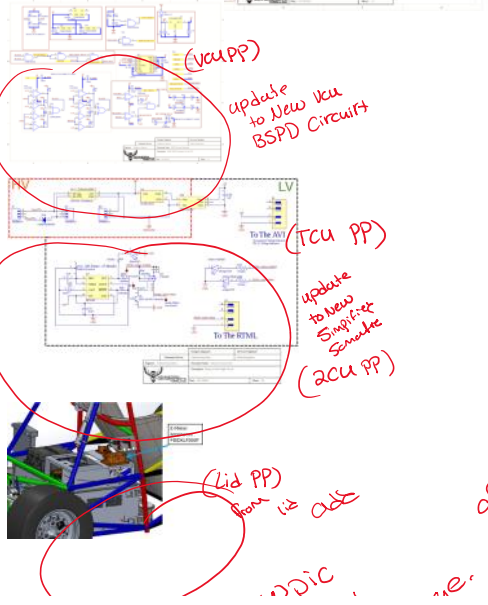












Spcks

Main Fuse - same as last year
AIRS - New air , can @garret add to ESF
What pole is MSD on? Negative pole

What pole is emeter on ? Positive pole
What pole is the Main fuse on ? Positive pole

RTML team built or purchased? Undecided need an update soon @TJ

TASKS

Altium Project organization for sheets - Chance

Data sheets:
Insulating Materials data sheets - DOM
IR data sheet - val

TS Schematics:
Tractive System Schematic - Camden
Tractive Battery TS Schematic - Chance

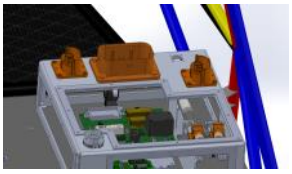
Tractive Battery:
PIC of fuse & IRS sepration from cells - GET NEW Photo. - Val
Pic of module insolation between cell terminals and side of trwctive battery co tainer- DOM

Precharge Discharge:
Explanation of Code contoled Precharge of Inverter bms and charger

Charging:
Charging Tractive System schematic - Mahi
Charging shutdown circuirt - Chill re uplaod

Shutdown Circuit:
Shurdown ciruit schematic - Collin
BSPD System schematic - TJ LU
Read to move light schematic - Chance

Other:
Pic of Emeter location in car - mihi
Pic of TSSI location in CAD - mihi
PIC of Energy meter module temp sesnor location - Dom



Precharge Voltage is compared / controlled through Code. While connected to the Car the BMS senses before the IRS and the Inverter senses after the IR's.

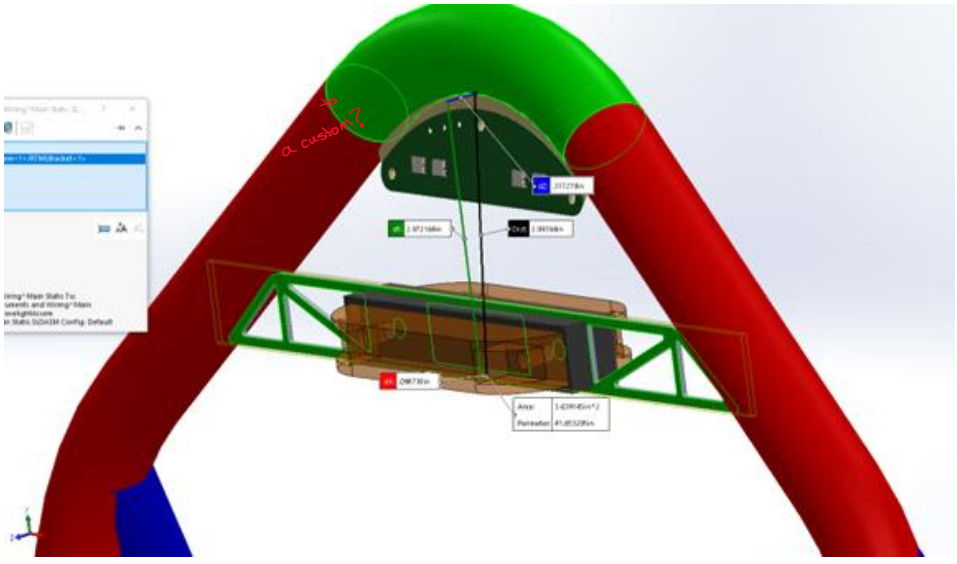
While charging the Charger replaces the function of the Inverter.

Each message is communicated through CAN to the Microcontroller on the Precharge control board to than drive the relay

HVD somewhere?

Weldpic
Code
Change.

\



----------SES---------

Friday, October 31, 2025 5:10 PM

Rejection 1

Friday, October 31, 2025 5:10 PM

The status of a document that you submitted has been changed:.
Submission: SES
New Status: Rejected
Hello Micah and Kennesaw State Team, My name is Alex Swanson and I will be your SES Reviewer for this year! You have a really solid SES going, but I have one major thing for you to fix and a list of small items to be fixed.

The large item is a 4 sided shape in your Rear Bulk Heat Support (RBHS) Structure. We consider a 'side' to a shape the tube between two vertices. One of the areas of the RBHS structure has 4 sides by this definition. Please either revise your design to avoid this, or cite a rule exception to claim to keep this design. HINT: Read all of column CN on the tube chassis tab to understand the nuance of the rules. (See the attached image for more information)

Also, I did not fully review the battery side attachments because the images were not clear - I will get a complete review once additional information is provided.

One specific thing we would like to see abundantly clear is the relationship between the battery side mount locations and the modules. If the top 4 corner mounts of the battery are not on a portion of the container that has cells behind it, it is very likely an impact would simply crush the container wall into the void space behind the mounts, making the mounts very weak. See the additional comments below.

Other than that I just have a laundry list of items for you to address.

- [ ] The biggest concerns come on the battery attachment and modules and container tab.

Steel Tube

- [x] Steel Tube Tab: Cell Q76 - Please show measurement in images
- [x] Steel Tube Tab: Cell Q86 - NOTE: Please ensure any sensors and fasteners are inside the FBHS as well.
- [x] Steel Tube Tab: Cell U31 & T137 - Please update to make consistent with other images.
- [x] Steel Tube Tab: Cell AU95 - NOTE: It is best practice to maximize this angle to support harness bar bending moments. Current design is rules legal but consider increasing.
- [x] Steel Tube Tab: Cells AK99 & AK100 are incorrect based on the images provided. Please revise.
- [x] Steel Tube Tab: Cell BE81 - Please show measurement in images
- [x] Steel Tube Tab: Cell BO87 - Please show measurement in images (already in there pic 62)
- [x] Steel Tube Tab: Cell CI68 - Please show measurement in images
- [x] Steel Tube Tab: Cell CI102 to CI104 - Please check values and units, these are suspect.
- [x] Steel Tube Tab: Cell CI107 - Please use the MOI of one of the rectangular sections and multiply it by 2 to avoid parallel axis theorem MOI adjustment, it is not representative of the loading.

- [x] Please provide better tractive battery mount images. Orientation of measurements is difficult determine.

Battery Attachment

- [x] Battery Attachment Tab: Cell AA85 and similar - This measurement seems suspect. Please double check and provide measurement image.
- [x] Battery Attachment Tab: Cells AA110, AK110, etc. Weld length is considered 'fully penetrating' so flanges can only be counted once. Please revise for all mounts.
- [x] Battery Attachment Tab: Cell BY89, CI89, etc. - Please measure from interface of supporting tube and mount weld location along centerline of tube.
- [x] Battery Attachment Tab: Cell BY99 - Please use the H value that is visible in the cross section of the bolt. Should be ~1 inch by estimate from drawing
- [x] Battery Attachment Tab: Cell BY74, CI74, etc. - Does not match value in image below of 2.55 in. Washer spec and calc does match with 2.16 in. Please resolve.

Changdes Made Between Submission 2:

Steel Tube
- Added a tube and moved another for the rear bulkhead structure.
- Lowered rear bulkhead by 0.5in
- Updated photos for Q76,Q86, U31, T137, BE81, BO87, CL68.
- AK99 and AK 100, Was previously using the smallest tube in the area for extra precaution, updated to the tube they are located on currently.
- CL102 to CL104, adjusted to proper values
- CL107 Updated pictures and MOI measurement

Battery Attachment:
- Battery Side mount photos updated
  - Added photos to clarify position of mounts
- Battery Attachment Tab: Cell AA85 and similar
  - Updated value and included measurement photo
- Battery Attachment Tab: Cells AA110, AK110, etc.
  - Assumed this note was meant for the chassis side mounts, not the battery side
  - Updated the weld perimeter for the chassis side mounts to not include the same flanges twice, measurement photo included
- Battery Attachment Tab: Cell BY89, CI89, etc.
  - Remeasured, included measurement photo
- Battery Attachment Tab: Cell BY99
  - Remeasured ended up getting the same value, measurement photos are present in the document
- Battery Attachment Tab: Cell BY74, CI74, etc.
  - Updated value to match image

Modules and Container:
- Modules and Container: Cells AA87 to AA89
  - Added measurement photos
- Modules and Container: Cell AK60
  - Measurement now matches image
- Modules and Container: Columns AK and AU
  - Moved measurement images and datasheets to more visible locations

Front Protection
- Updated value for J61
- Updated picture for AD49
- Updated value and picture for AN37

Modules and Container

- [x] Modules and Container: Cells AA87 to AA89 - Please show measurements in images
- [x] Modules and Container: Cell AK60 - Does not match provided images. Please resolve.
- [x] Modules and Container: Columns AK and AU - Please provide clear images of all relevant measurements, and images of material specification sheet, labeled as called out in the document. Use as much room as you need below the sections.

Front Protection

- [x] Front Protection Tab: Cell J61 - Value does not match provided images color code - please resolve.
- [x] Front Protection Tab: Cell AD49 - Please show complete measurement with reference to location on lower SIS
- [x] Front Protection Tab: Cell AN37 - Error in SES. This field should read "Air Gap Front Bulkhead + Diag to pedal mounts should be >= 0.984 in:" Please show this clearly.

Sorry for the confusion. I know this looks l like a lot but most of these are tiny complaints! You're on the right track. Let me know if you have any questions, Alex Swanson SES Reviewer

Rejection 2

Tuesday, November 11, 2025 3:07 PM

Unfortunately I missed another four sided section of your chassis - this time it is in the FBHS, right in front of the Front Hoop. Please see the attached document for more detail and suggested fixes.
Also, your Shoulder Harness Bar Braces are legal, but I would recommend situating the brace in a way that arrests the bending moment the harness would place on it in frontal impact loading - you'll see my suggested changes in the last page of the attachment.

Other than that, I have a much shorter list of things to address! Let's keep working at it!

Steel Tube

- [x] Steel Tube Tab: Cells AK99 & AK100 are incorrect based on the images provided. Please revise. (Black tube is not coded as 0.065 x 1")
- [x] Steel Tube Tab: Cell BE81 - Please show measurement in images (Please measure to top of MH)
- [x] Steel Tube Tab: Cell CI68 - Please show measurement in images
- [x] Steel Tube Tab: Cell CI107 - Please use the MOI of one of the rectangular sections and multiply it by 2 to avoid parallel axis theorem MOI adjustment, it is not representative of the loading. Please show your math and selected cross sections. It's hard to tell how you are calculating this.

Battery Attachment

- [x] Battery Attachment Tab: Lower the corner attachment upper mounts to directly support the upper mass of the battery cells - not the empty space above. Let me know if you have any questions at all regarding this.
- [x] Battery Attachment Tab: Cells AA110, AK110, etc. Please show mathematics and clear images for weld length.
- [x] Battery Attachment Tab: Cell BY99 and similar - Please show measurements of the H for each chassis side mount.

Modules and Container

- [x] Modules and Container: Columns AK and AU - Circle relevant numbers on respective spec sheets - remember to use values at elevated temperature.

Front Protection

- [x] Front Protection Tab: Please attach impact attenuator receipt.

Changes Made Between Submission 2:

Steel Tube:
- Went with suggested design 2
- AK99 and AK100 adjusted values to the proper tube size
- BE81 updated picture and cell
- CL68 Updated photo showing min distance to the inner wall of the tube and updated the cell
- CL107 Circled and applied the formula

Battery Attachment:
- Lowered all upper mounts to support the upper mass of battery cells by approximately an inch.
- AA110, AK110, etc. Added red box around weld length measurement and labeled (Including SolidWorks perimeter measurement)
- BY99 and similar, Added red box around H measurement and labeled

Modules and Container:
- Highlighted relevant numbers on spec sheets

Front Protection:
- Attached receipt of Impact attenuator

Rejection 3

Tuesday, November 11, 2025 3:07 PM

Battery Attachment

- [x] Item 1:
"Lowered all upper mounts to support the upper mass of battery cells by approximately an inch.." - Did you change the images? The battery attachment tab looks the same between revisions. I apologize if I missed something.

- [x] Item 2:
Battery Attachment Tab: Cell BY99 and similar - Please show measurements of the H for each chassis side mount.

Please measure the chassis side mounts at the interface with the chassis (You can use a flat cross section). An H value for the U type of greater than 1" is not possible on a 1" tube, simply because there is no material to transmit the force to. Please update all chassis side mounts to reflect this.

- [x] Item 3:
Modules and container tab: Cell AK86 - Please check measurement. Should this be the long side of the module? ~14 inches?

Changes Made Between Submission 3:

Battery Attachment:

- Images were updated in previous submission to show mounts in relation to module, with new measurements after they were moved. Rest of images now updated to match that
- Updated BY89 and CI89 and added measurement photos

- Updated BY99 and similar
    - Updated value and included measurement photos

Modules and container:

- Updated AK86 to long side of module