

# Project Overview

# Project Discussion

- Domain: Onboard automotive systems
- Key areas:
  - Active Park Assist (APA): [Polestar](#), formerly with [Ford](#)
  - Lane Management System (LMS): – [GM/Amazon](#)
  - Pedestrian Collision Avoidance (PCAS): Auto Konnect/[Dataspeed](#)
  - Traffic Jam Assist (TJA): [WMilam Consulting/Ford](#)
  - Automatic Driving Beam (ADB): Flex-N-Gate
- Embedded systems
- Assurance: safety, reliability, security
- Standards:
  - Automotive
  - Modeling

# Initial Objectives

- Everyone must gain understanding of domain
  - Articles mentioned in class and on Handouts page
  - Research via web and other available resources
- **Each person** on each team (**HW#4 Sept 30, 3 pm**):
  - Compile a list of requirements
  - Identify at least 3 global invariant requirements
  - Identify at least 3 questions for the customer.
- **Project manager** collate into one list of requirements and a list of questions (**GroupHW#2: due Oct. 2, 3 pm**)
  - Remove redundancy
  - Send out to team for review and additional questions
- **Team** develops/submits more complete set of questions:
  - review/proofread
  - submit **GroupHW#3: Oct. 4, 3 pm**

# Website requirements

- Skeletal website for each team by beginning of class, [GroupHW#1: Oct. 2,](#)
- Top-level page:
  - Brief project Background
  - Brief project Description
  - Team composition, with role names, photos, links to individual web pages
  - Link to instructor and cse435 course page.
- Publicly Accessible Links:
  - Original Project description (PDF)
  - SRS (SW Requirements Spec)
  - Prototype
  - Bibliography of resources used for domain research
- Local Information (only for team and instructors)
  - Accessible by team members, instructor, and TA
  - Agendas and Minutes of all meetings
  - Milestones with internal and required deadlines
  - Access to intermediate drafts of deliverables
  - Discussion forum between team members.
  - Questions/Answers with customers and other resources

# Project Requirements

- Requirements Doc
  - Identify preliminary set of requirements (HW#4: Sept. 30)
  - Compile list of questions/clarifications for customer (GroupHW#2: Oct. 2)
  - Software Requirements Specification (SRS):
    - preliminary: Due TBD
    - Final: Due TBD
    - Web-based prototypes: TBD
  - interface elements
  - executable features
- Constraints: must be compatible with companion systems
- Oral Presentation/Demonstration (Dec. 2,4, 9)
  - Additional meeting period needed due to class size:
  - Monday during Finals week, Dec. 9

# Team Composition

- **Project Manager**
  - Assign tasks
  - Responsible for deliverable submission
- **Project Facilitator**
  - Setup and run meetings (agendas/minutes cc to Instructor/TA)
  - Post minutes on website
- **Artifacts Manager**
  - Configuration management
  - Web master
- **Domain Expert/Customer Liaison**
  - Specialized domain knowledge
  - Safety concerns
  - Interface with customer
- **Security/Assurance Manager:**
  - Identify vulnerabilities
  - Specify prevention, detection, and mitigation
  - Security policy for system
  - Identification of security threats and mitigation strategy

# Meeting Requirements

- Agenda
- Leader
- Action list
  - With assignments so we know who is doing what.
  - Timelines so we know when it's to get done.
- Summary
  - Something happened or there would not have been a meeting. Record it briefly.

# Project Issue List

- Every issue goes on the list
  - Date and brief description
- Make assignment to get it resolved
- Put resolution on list.
  - “Close” issue.
- 1st version usually generated on 1st read of problem statement.
  - And then, back to the customer...



# Interviewing

- Have a list of things you want to know.
- Listen.
- Listen.
- Ask open-ended questions.
- Don't express (show, say) opinions on answers. Just record, and think.
- Listen.
- Ask questions more than one way.

# Requirements Elicitation Meeting

(Oct. 7/9, 2024; 3-4:30)

- Address each customer with “Mr./Ms. Lastname”
- Introduce each team and members (Name, role)
- Take turns amongst the 3 teams to ask questions (Team1, Team2, Team3, repeat)
  - Project Managers will ask questions
  - Facilitators will serve as scribe to record responses
  - At least one other team member should also take notes
  - Other remaining team members will be responsible for recording questions from other teams and corresponding responses.
  - Any team member may ask a clarification question as needed
- Facilitator will collate all feedback from team members to compile list of questions/responses and submit within 48 hours of meeting.

# Prototype

- Objective:
  - Provide an interactive means for customer to explore the features as specified by the requirements
  - Exercise the scenarios specified in the project description and any additional ones obtained from customer
- Constraints:
  - Accessible via team webpage
  - Graphical interface
  - Accessible on different platforms (e.g., Windows, MacOS, etc.)
- Possible options:
  - Unity package (from Gaming community)
  - Javascript

# Project Teams

To be distributed Monday in class