Problem Set:

For each different color of the Crystal family of methods, there are different assumptions about the project and different expectations of the project team. In general, the process becomes more formal as the risks of the project increase.

So far, you've worked on three different features in your role as Agile Methods consultant for Driverless Cars. Identify and justify the appropriate Crystal family method for each of the features:

- Self parking, where the car parks itself without human assistance.
- Automatic lane change, where the car changes lanes automatically when the driven hits the turn signal.
- Honking the horn when appropriate to warn pedestrians and other drivers.

Be sure to justify your response with data about the method. Don't just say that Crystal Clear is appropriate for all three tasks because you don't want to think about a better answer.

Solution:

Identify and justify the appropriate Crystal family method for each of the features:

The project's complexity grows in proportion to the number of team members. The Crystal family has several techniques. Based on the amount of persons involved in the project:

- Crystal Clear involves up to 8 people.
- Crystal Yellow involves 10-20 people.
- Crystal Orange involves 20-50 people.
- Crystal Red involves 50-100 people.

1. Self parking, where the car parks itself without human assistance.

Self-parking feature requires the following steps to be implemented:

- Requirement Gathering - This team gathers needs such as identifying the suitable parking locations by verifying yellow or white lines, handicapped signage, and measuring the required distance from other parked automobiles. It will require 2-3 persons.
- Implementation - 4-5 persons will be needed in this phase to build an algorithm, program, and maintain data.
- Testing - 3-4 people will require as a tester.

Based on these steps, the self-parking feature will need 9-12 people. That's why Crystal Yellow is more applicable.

2. Automatic lane change, where the car changes lanes automatically when the driven hits the turn signal.

Automatic Lane Change feature requires the following steps to be implemented:

- Requirement Gathering - This stage gathers necessary criteria such as analyzing the availability of an object in blind areas and the presence of another lane. It will require 1-2 persons.
- Implementation - It will take 2-3 persons to develop and implement an algorithm depending on needs.
- Testing – 1-2 people will require as a tester.

Based on these steps, automatic lane change requires 4-7 people. Therefore, Crystal Clear is more applicable.

3. Honking the horn when appropriate to warn pedestrians and other drivers.

Honk the horn feature requires the following steps to be implemented:

- Requirement Gathering - 1-2 personnel will be required to adjust the horn sound to decibel sound (146 to 175 dB) and install sensors that detect the presence of pedestrians or other drivers.
- Implementation - It will take 2-3 people to create an algorithm, write code, and test it.
- Testing – 1-2 people will require as a tester.

Based on these steps, a horn honking feature will require 4-7 people to get done. Therefore, Crystal Clear methodology is more appropriate.