

PROJETO AXIOMÁTICO

Axiomatic Design

Based on two axioms, or laws.

The best designs:

- 1. Maximize the independence of the functional elements**
 - Controllable, avoids unintended consequences
- 2. Minimize the information content**
 - Robust, maximizes chance of success

THREE BASIC ELEMENTS OF ENGINEERING DESIGN DECOMPOSED INTO THEIR COMPONENTS

<i><u>Elements</u></i>	<i>components</i>
1. Axioms	Maximize Independence
	Minimize Information
2. Structures	Horizontal Decomposition
	Vertical Decomposition
3. Processes	Zigzagging decomposition
	Physical integration

STRUCTURE – HORIZONTAL DECOMPOSITION - DOMAINS

Horizontal decomposition into domains:

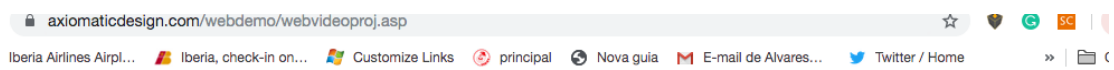
Customer needs **CNs**– *what adds value*

Functional requirements **FRs** – *what it does*

Physical (Design parameters) **DPs** – *what it looks like*

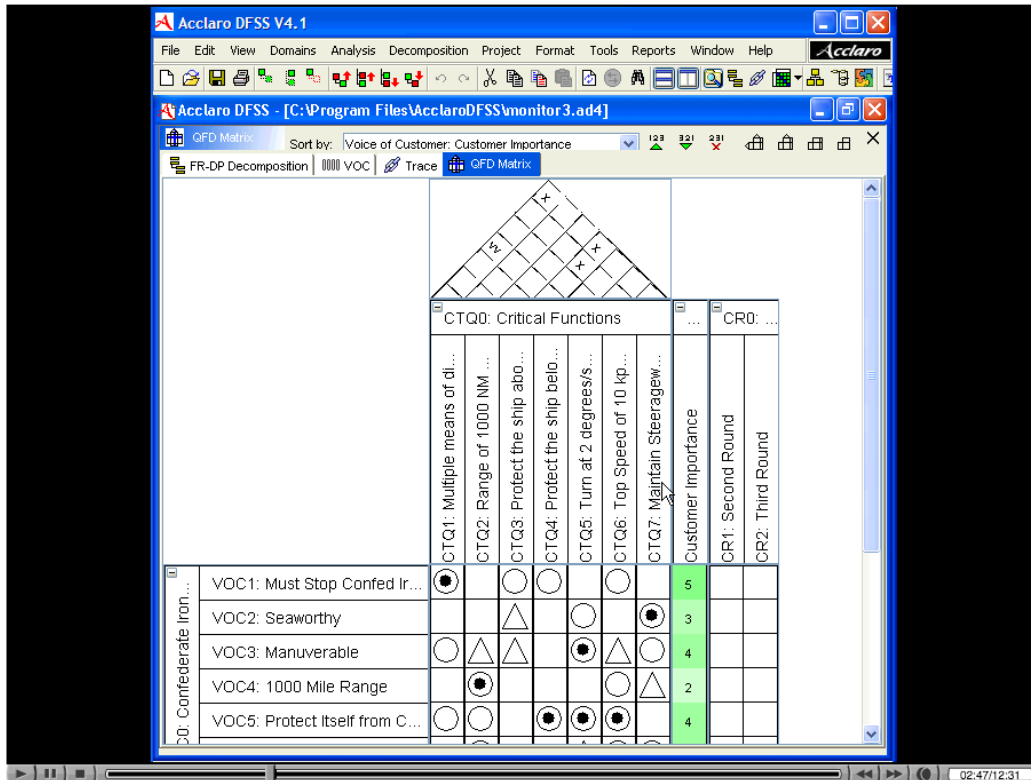
Process variables **PVs** – *how you make it*

Constraints **CONS** – *what needs to be avoided*



[Learn more about Acclaro DFSS Software](#)





The screenshot shows the Acclaro DFSS V4.1 interface with the FR-DP Decomposition view. It displays a list of Functional Requirements (FR) and their corresponding Design Parameters (DP).

#	[FR]Functional Requirements	[DP]Design Parameters
0	FR Monitor Functions	DP Monitor Design Parameters
1	FR Multiple means of disabling Confederate Iron Clad	DP Offensive Systems
2	FR Protect the ship above the water line	DP Above the Water Line Defense System
3	FR Protect the ship below the water line	DP Below the Water Line Defense System
4	FR Turn at 2 degrees/sec at 5 kph	DP Steering System
5	FR Top Speed of 10 kph on calm water	DP Propeller Thrust
6	FR Maintain Steerageway in a force 3 gale.	DP Hull System

