

Root Causes of Command & Control Behavior through System Modelling *(using Causal Loop Diagrams)*

Note: *Causal Loop Diagram (CLD) is merely a system modelling tool, used to facilitate a dialogue between parties. It is not a final, conclusive or "best" way to illustrate a given interaction between variables in a system. CLDs are always situational, circumstantial and conditional. System Modelling exercises, done in corporate settings, may vary from team to team, company to company, industry to industry. They could be based, on participants' domain knowledge, perspectives and personal bias.*

Legend for Causal Loop Diagrams

- ❖ **Goals** — High, overarching/strategic goal that needs to be achieved
- ❖ **Variables** — System elements that have an effect or influence on other system elements (other variables)
- ❖ **Causal links** — Arrows that connect related variables
- ❖ **Opposite effects** — “o” annotation near an arrow; suggests that the effect of one variable on another is negative (“-” feedback loop)
- ❖ **Delayed effect** — “||” annotation that disrupts a causal link (arrow); it implies that there is a delayed effect of one variable on another variable
- ❖ **Extreme effects** — One variable has an extreme (beyond normal) effect on another variable; it is represented by a thick arrow
- ❖ **Constraints** — “c” annotation near arrow; implies that there is a constraint on a variable
- ❖ **Quick-fix reactions** — “QF” annotation near an arrow; action that brings short-term, lower-cost effect into a relationship between two related variables

In System Modelling, we mostly care about Causations

- ❖ **Correlation** - relationship between two system variables (event or action), where there is no direct dependency. A relationship can be positive or negative.
- ❖ **Causation** - a.k.a. “cause and effect”, is relationship between two system variables (event or action), where change in one leads to change in another.

System Modeling for **Command & Control Behavior**

