Market Driven Systems (FRTN20)

Exercise 3

Batch Control

Last updated: 2014

1. Explain what a batch system is. What are the typical characteristics of a batch system? Give two examples of batch systems.

2. Batch processes can be classified according to the number of products they can make and the structure of the plants. Explain.

3. How many units does the process cell in Figure 1 contain? What are the equipment modules and what type are they (stand-alone or not, exclusive-use or shared-use)?
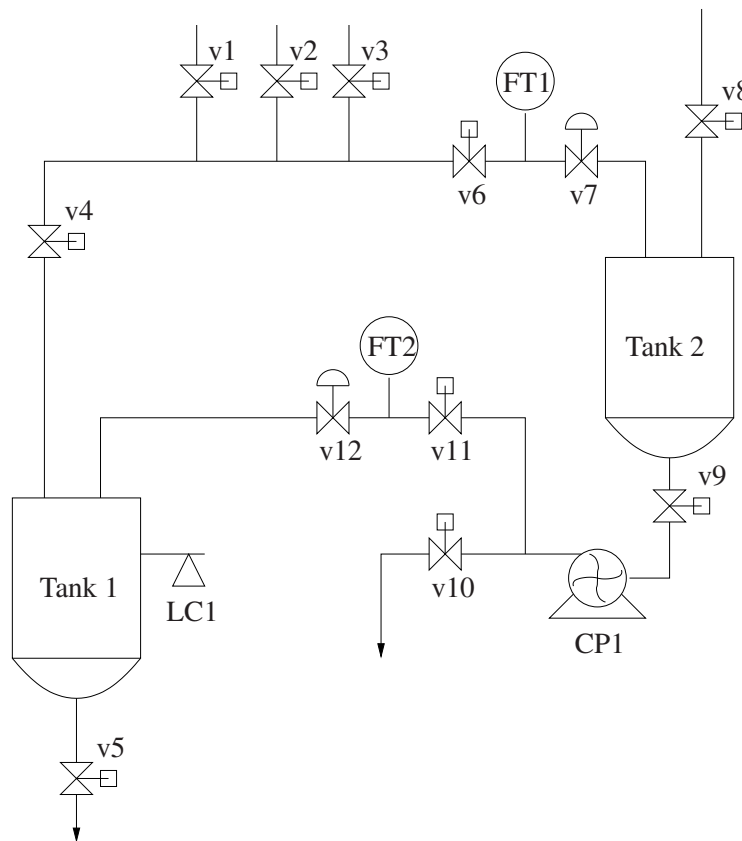

Figure 1

4. The batch recipe is fundamental in batch control.

   a. What type of information does a recipe contain?

   b. Explain what general, site, master and control recipes are.

5. ISA 88 offers large flexibility with respect to at which level the control recipe should reference the equipment control. This is illustrated in Figure 2. Explain what Figure 2 shows. What is the most common configuration used in industry?
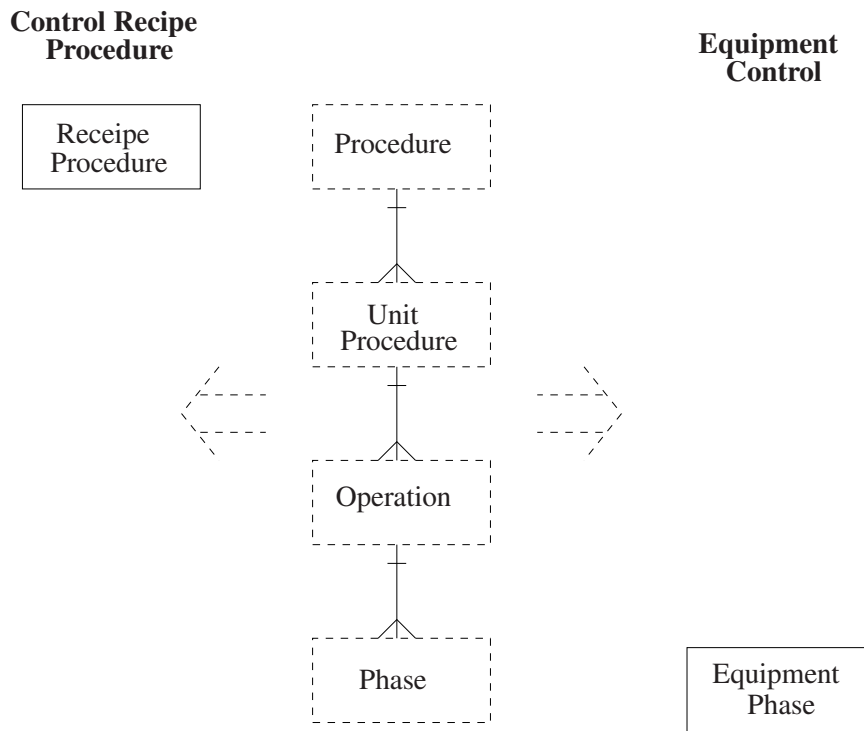
Control Recipe Procedure

Equipment Control

Receipe Procedure

Procedure

Unit Procedure

Operation

Phase

Equipment Phase

Figure 2

6. Get started on the preparations for lab 1. Consider especially preparatory exercises 5.1 and 5.2, which will get you familiar with grafcets and the JGrafchart language.