



# Challenges to Pharmaceutical cleaning

**28 June 2017**



**RS Ness Engineering provides services to companies from the pharmaceutical, biotechnology, medical device and food industries.**

**Engineering**

**Process & Mechanical**

**Space management**

**Utilities**

**Project  
Management**

**Design management**

**Construction  
Supervision**

**Management of  
Budget , Time line &  
interface**

**Validation**

**OSD plants  
System & equipment**

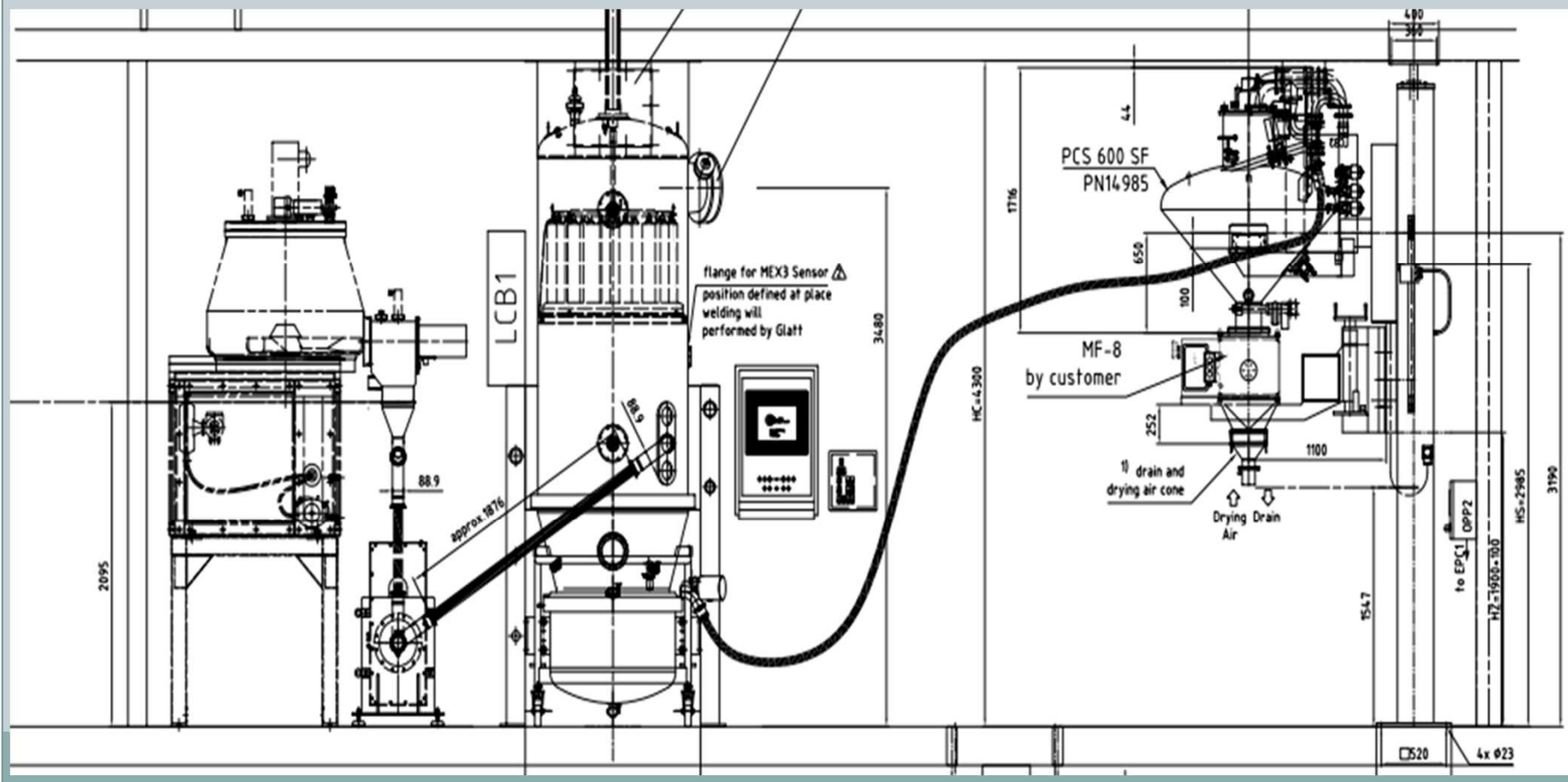
**Sterile & biotech  
plants  
System & equipment**

**Serialization & CSV**

- Engineering and regulatory aspects
- Operational aspects
- Safety aspects

## Project no. 1

- Cleaning PCS (Pneumatic Convey System)
- Cleaning UPE (Ultra High Molecular weight Polyethylene) flexible pipes





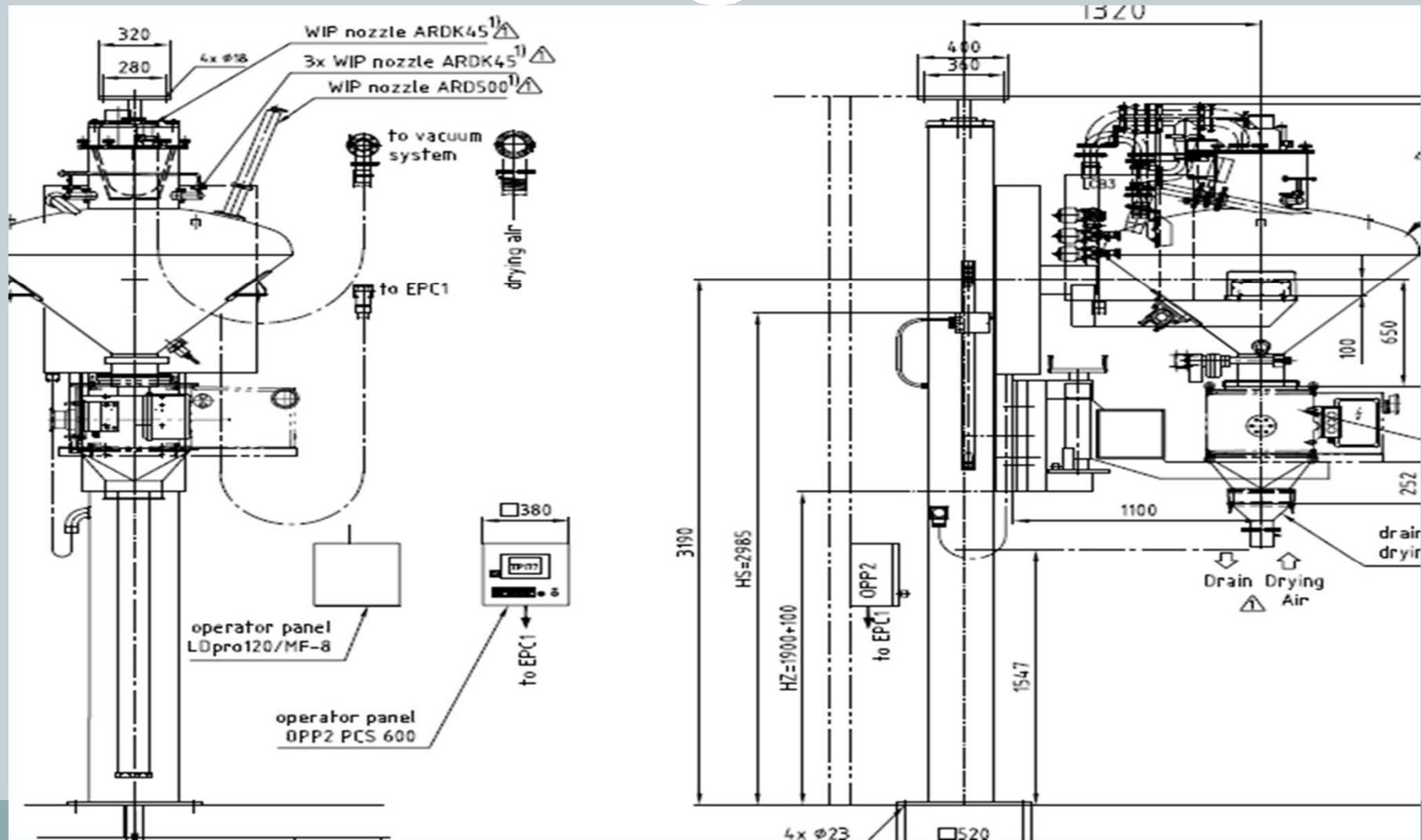
## **Challenges in cleaning the equipment**

- Location of equipment
- Size of equipment
- Form of equipment
- Cost of consumables
- Characteristic of material
- Utilities limitations



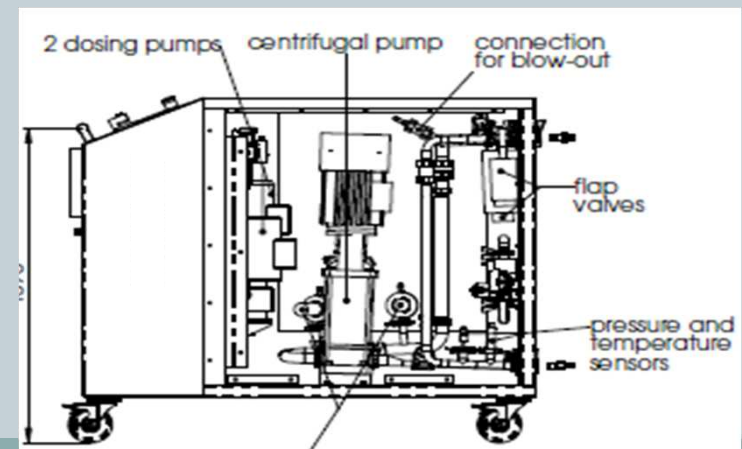
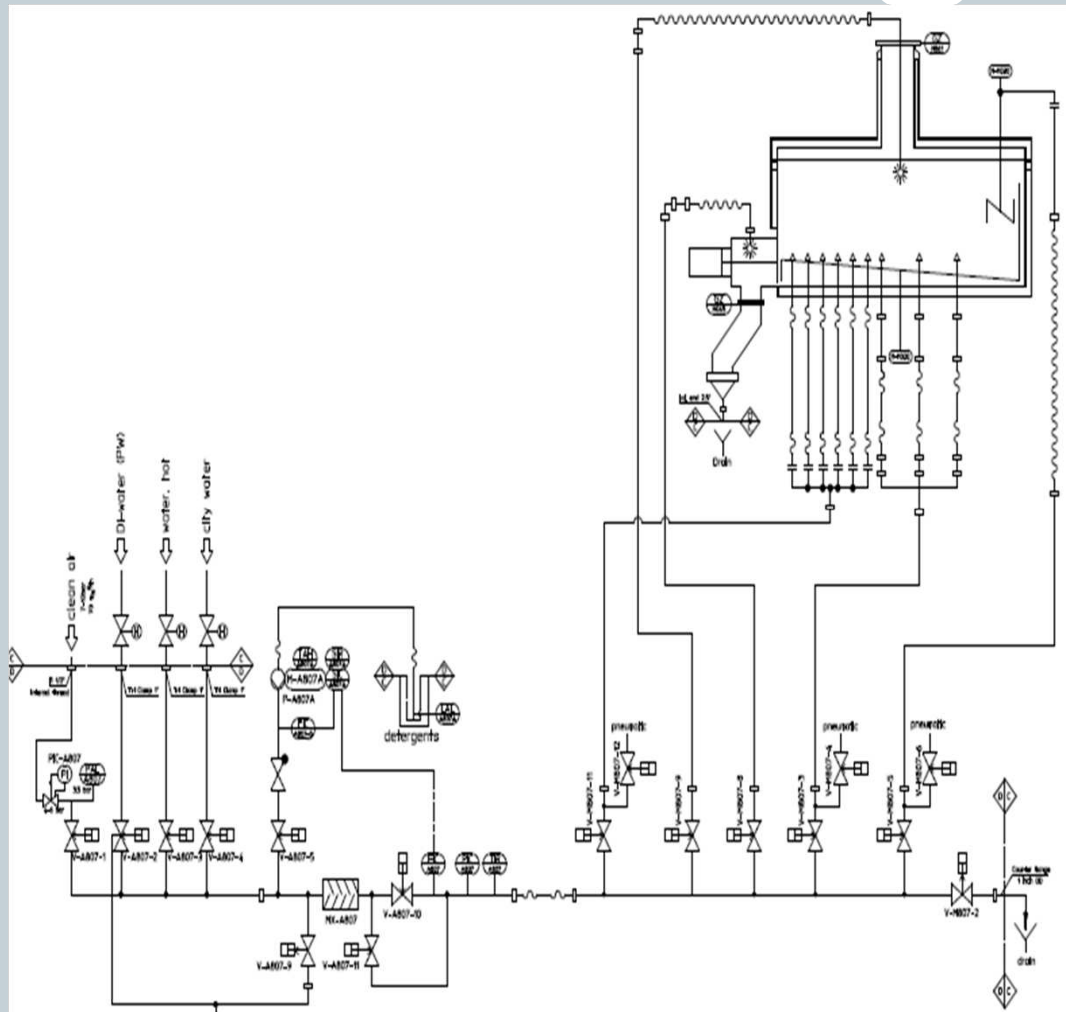
## Issues to consider

- Unique forms - hard to reach for manual cleaning
- Safety issues – protecting the operators and environment
  - Exposure to materials of high potent OHS  $\leq 4$
  - Ergonomic - Falling from ladders while climbing to clean the tools
- Type and location of cleaning nozzles.
- Validating the cleaning robustness
  - Coverage test
  - Insuring the repeatability of cleaning process by monitoring the critical paraments ( Flow, Temperature, concentration of detergent...)
- Degree of automation.



# Sample for WIP system

8





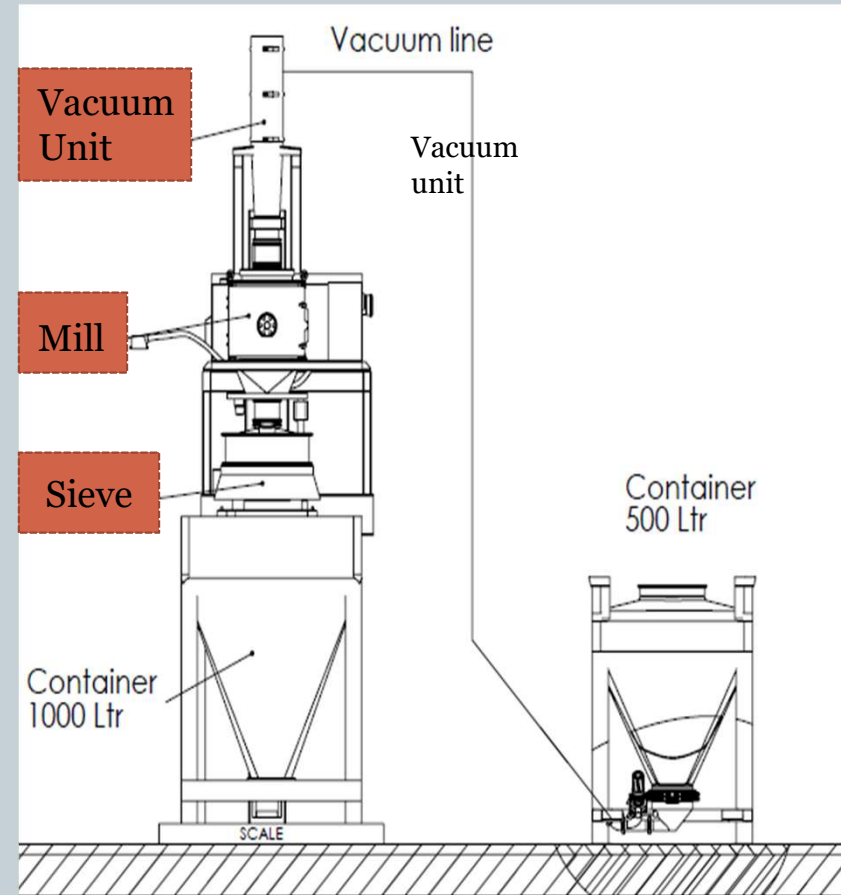
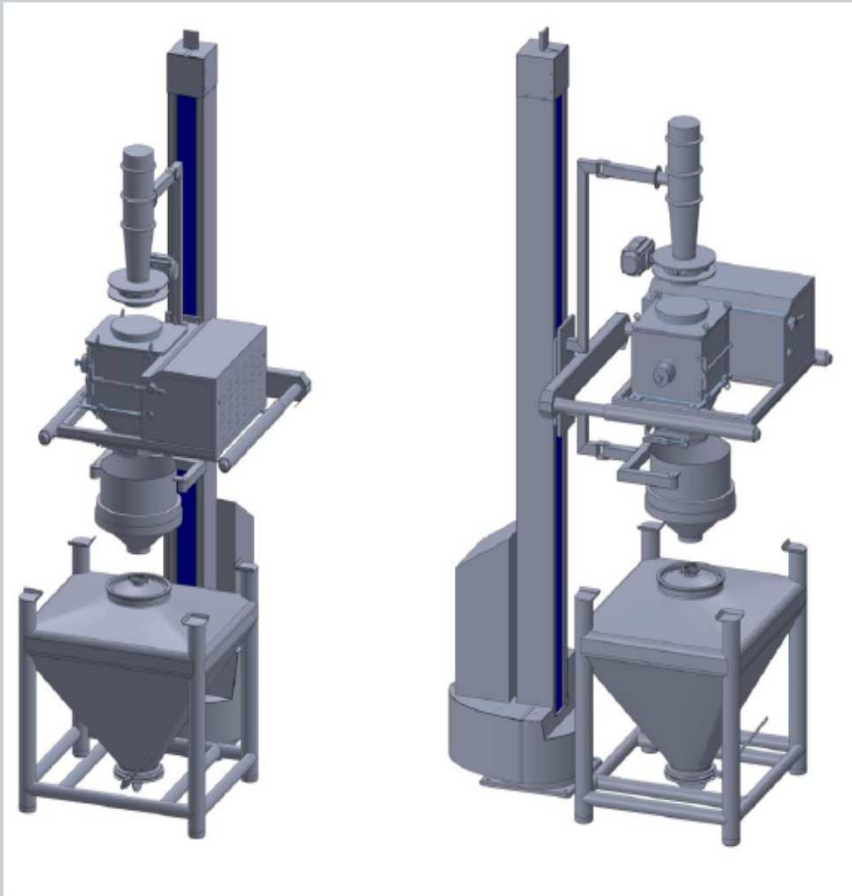
## Cleaning system of flexible pipes



## Flexible pipe - UPE



## Project no. 2

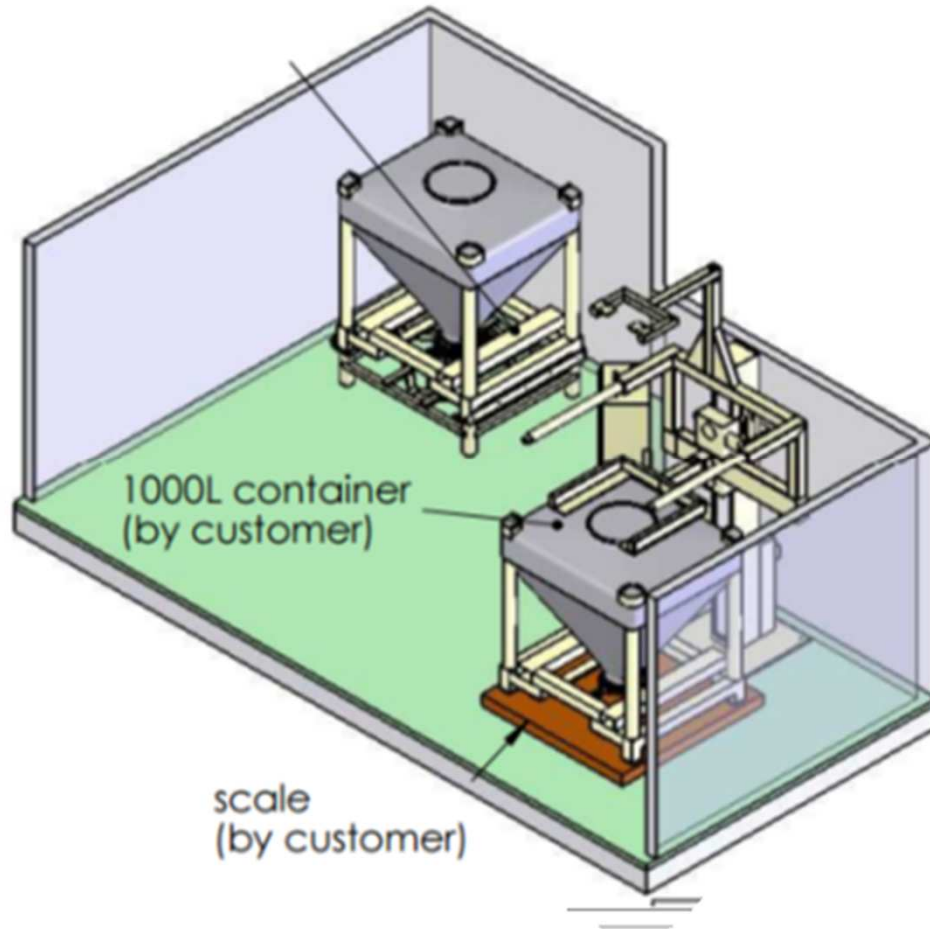




## Project no. 2

### Challenges in cleaning the equipment – Project 2

- Location of equipment
- Size of equipment
- Form of equipment
- Characteristic of material





*Ness Engineering, Projects & Validations LTD.*



# Thank you