TRIZ Challenge - November 2003

We challenge you to use your TRIZ skills and your knowledge to help solve a humanitarian or social problem that will benefit many. In the same way that Genrich Altshuller gave us TRIZ for free, we hope that you will also share your ideas too.
We would like you will submit your results for publication in the TRIZ journal. Every few months we will set a new challenge - but that does not mean that you cannot continue to work on previous challenges, indeed you may have chosen to work on this for your project or coursework.
Send your results, ideas, comments and suggestions for future challenges to challenge@triz-journal.com.

This month's challenge is probably a bio-chemical engineering challenge, but may be solved in different ways. How do you dispose of cleaning fluids without either spreading bio-cultures or killing beneficial cultures?

Within the environmental health community, it is now recognised that active bacteria in a drainage system are crucial in keeping pipes clean and free flowing.
However, legislation in the medical and catering arenas insist that floors and walls should be sanitised as well as cleaned. These are usually aqueous solutions. The waste fluid will contain the debris collected during cleaning and sanitising fluid. If this is poured down the drain it will kill the bio-film and within it the beneficial bacteria.

The challenge is to sanitise medical and catering facilities without killing the useful bio-flora. If liquid sanitising is used, how can the waste cleaning and sanitising fluid be disposed without affecting the environment - and can you do it cheaply?

An additional challenge is to make your method work in a developing world hospital or in a bush camp.

Getting this right is crucial in our battle to stop things like MRSA or ebola virus from spreading around a community such as a hospital, hotel, or school.

In an earlier challenge we looked at how to sterilise water in a developing country, this challenge is similar in background. There is a need to remove or kill organisms such as bacteria, viruses including pathogens, and spores. Ultra Violet light will work on some of these - if you have line of sight, but this is not so easy to apply to a concrete cellar as it would be to a canvas shelter near the equator. Radioactivity is not 100% effective and introduces other problems.

Disposable surface might work, but we come back to disposal and how to dispose of the used surface.