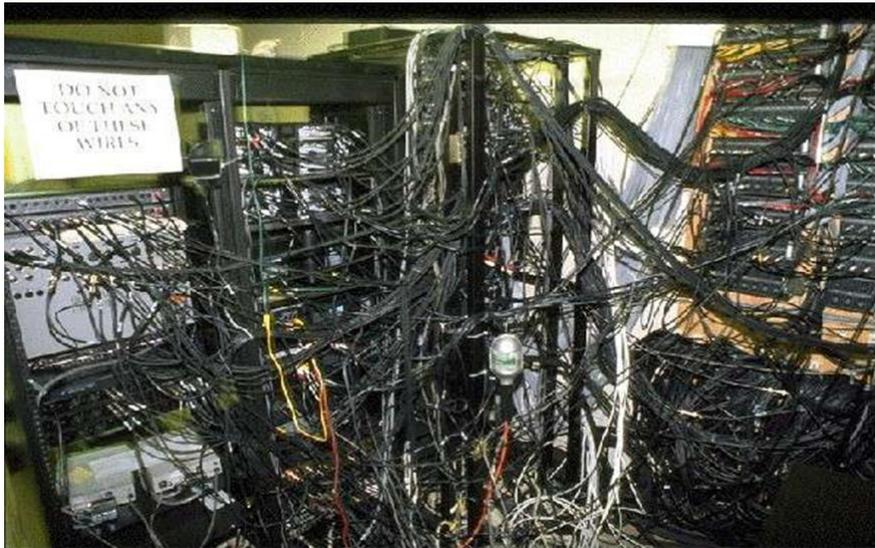


## Introduction

Wires. What's to like about them? They're unreliable, expensive, heavy, and vulnerable. Wouldn't it be great to do away with them as we largely have in our daily lives? What's stopping you?

### **You do not trust wireless.**

Our purpose is to dispel misconceptions and myths about wireless sensor networks and provide you with the information you need to make sure that your introduction of wireless sensors is successful. The purpose of this document is to make wireless understandable and fun. We the authors think it is and hope that we can convey the excitement to you, along with the benefits.



**Figure 1 - Don't touch any of these wires!**

Don't touch any of these wires. Why not? Make no mistake; we clearly understand why you don't trust wireless for your Industrial Automation and Control System (IACS). There have been too many false starts and false claims in the past. The proclamations of ubiquitous sensing haven't been realized. But there is a lot happening in the broader "M2M" world beyond industrial sensing that lays the groundwork. (See "When Everything Connects," *The Economist*, April 28-May 4, 2007.) And does the jungle of wires shown in Figure 1 really seem like the best solution? There is a lot you can do now that makes good business sense. So what is preventing you from trusting wireless sensors for your IACS?

- 1. Reliability:** Will the data you need be available when and where you need it? Will the maintenance of the wireless system be higher than the wired alternative? Will the additional capability you get be worth the risk and capital expenditure? You need assurance against unintended consequences as you make the transition.
- 2. Security:** Will your data stay where it belongs? Will your IT department allow wireless in the facility? Will an intruder be able to take control of your processes?
- 3. Resiliency:** When the system is disrupted, how long will it take to restore? Will it restore itself? Will your technicians be able to fix it? Will the system scale to fit your full implementation?

Can early indications of an impending disruption be detected in time to compensate, mitigate, or pursue an alternate control strategy?