



# Why Standards Are Important

(Management summary at the bottom)

**Σήμερα θα μιλήσουμε για τα πρότυπα. Επιτρέψτε μου να σας εξηγήσω τι είναι πρότυπα και γιατί είναι τόσο σημαντικό να χρησιμοποιηθούν τα πρότυπα παρά τους ιδιόκτητους μηχανισμούς.**

Unless you speak Modern Greek, chances are small that you will understand the sentence above. In order to explain to you what standards are and why they are so important, let's analyze this problem.

You could say that the reason that you don't understand the sentence is that you don't speak Greek. Just as well, the reason could be that I, the writer, don't speak a language that you understand. Clearly there is a communication problem, preventing the message from getting across.

How can we solve this problem? You could learn Greek, but that is cumbersome and probably a bit of overkill in order to read the introduction of this article. I could learn your mother tongue, but I would have to translate this document many times if I want to make sure that everybody understands. Or we could use a common language like English, which is what we are doing now.

Clearly, the latter is the most interesting idea. With this small example, we immediately get to the core of the use and benefit of standards: using a common language reduces the overall effort and cost and allows entities to communicate with each other.

## Definition

The word "standard" has different meanings and many definitions. In technical usage, a standard is a framework of specifications (a common language) that has been approved by a recognized organization and/or is generally accepted and widely used across the industry.

A standard allows different devices or pieces of software to communicate with each other, even if they come from different manufacturers. This is extremely important in modern society. To understand this, just think what the Internet would be like if every different software manufacturer would use a different networking protocol. Standards are in the first place interesting for companies whose products have to talk to each other. This is called compatibility or also interoperability.

It also follows that a standard gains in usefulness when more people use it. Or the other way around, if a lot of different devices need to communicate with each other, there is a definite need for a standard. In economic terms, this is known as network externalities.



An *open standard* is a standard that is publicly available, meaning that anyone is allowed to use it. This doesn't necessarily imply that it is free: technology patents for which a fee has to be paid can still apply. Open standards are not usually controlled by a single group or vendor and don't rely on specific technologies.

There are thousands of standards available today, each with a different purpose. For networking, such standards as TCP/IP, HTTP, HTML, SMTP, XML, etc will no doubt sound familiar. For images, standards like JPEG are widely used, and everyone knows the MP3 standard for encoding sound.

Closer to the CCTV surveillance industry, there are several standards that deal with video. In the analogue world, the PAL and NTSC standards are ubiquitous. For encoding, most products use standard compression mechanisms like motion JPEG or MPEG. Also file formats can be standardized, like for instance the ASF standard.

### Who makes these standards?

Standards can originate in several different ways. They can be made by official standard organizations or by industry forums. Some standards exist because a particular method was used so widely that everyone accepts it as being the standard. Such standards are called *de facto* standards.

There are national and international official organizations that concern themselves with standards. National organizations like ANSI (USA) or BSI (UK) are controlled by the government. In order for a standard to be recognized as an international standard, it has to be approved by an international standard setting organization. The most famous are ISO, IEC and ITU. These official organizations have rigorous procedures for making a standard, but it often takes a long time and there is no guarantee of acceptance in the industry.

In the fast-moving IT industry, some technology or product can become so popular that it is generally accepted by the majority of the industry and as such becomes a *de facto* standard. *De facto* standards have the advantage that modifications can be made much faster than with a formal method, and that wide acceptance is guaranteed. However, since a single vendor usually owns or controls the technology, there is a possibility of vendor lock-in later on.

Last but not least, some standards appear from industry consortia. They are not exactly "official" standards, but because the technology ownership is usually shared by several companies in the forum, the chance for vendor lock-in is much smaller. Industry-driven standards are produced by organizations like IETF, W3C, IEEE, OASIS or the Free Standards Group.

Often different standard setting organizations communicate about standards and as a result some standards are "upgraded" from *de facto* standards to industry standards to *de-jure* international standards.



## Benefits

The use of standards benefits all parties involved. As you will see, it leads to cost reductions for everyone that uses them: manufacturers, integrators and end users.

By using (open) standards, you become independent from a particular vendor. Any vendor that supports the standard can be used, so you as a customer are not tied to any of them. For instance, a security installer can use any brand of analogue camera, as long as they use the NTSC or PAL standard (and they do).

Similarly, a video file that is encoded and stored in a standard way can be played with any media player. You don't need the player that the recording software provides you with, so you are not limited by its functionality. You can even make your own player should you wish to do so. For file formats, using standards is especially important to ensure that data can be accessed and exchanged smoothly at all times.

Vendor independence leads to open competition between different manufacturers. Competition usually leads to price drops, making life cheaper for you.

If you integrate a product that conforms to standards, your implementation will be future-safe, since you can replace this product without compromising your integration. You can probably even change the software platform on which you work, since implementations of standards are usually relatively easy to port. You can also "mix and match" products from several vendors to make the best total solution for the customer, without being tied to a single vendor for all components. Vendor independence also assures that the standard data will always remain accessible, even when the company that generates this data ceases to exist.

Because standards are widely accepted, you can be sure that the standard, as well as its implementations, have been ruminated many times by many different people from different organizations. You could say that a standard is formed by more engineers than one single company could ever hire. Standards are proven, future-safe technology. For a company that needs to use a particular way of communication, there is no need to invent the wheel over and over again, because the result will almost surely be of lesser quality than the existing standard.

Especially for integrators using standards means reducing costs. Because you don't have to "learn a thousand languages" when using standards, it takes a lot less development effort to introduce new standard-compliant products into your system. In other word, you only have to invest once in the standard, and not again and again for every new product that arises. Less effort means less risk for delays and fewer resources, allowing you to deliver your system on time and on budget.

At the bottom line, standards reduce effort, cost, risk, and time requirements.



## How Quadrox uses standards

Quadrox uses four IT standards to reduce costs for its customers<sup>1</sup>:

- Standard codecs like JPEG and MPEG for image compression,
- The ASF file format for storing video,
- OPC for alarm and event handling and
- SNMP for service messages.

The use of these standards leads to all benefits listed above.

Using standard codecs and file format ensures that movies encoded by Quadrox can always be viewed, regardless of what happens to the Quadrox software. The latter is not required for viewing: you can play Quadrox movies in any media player, from major players like Windows Media Player and Real Player to “small” open source players like BS-player and Media Player Classic. This is useful if you want to send movies to third parties for analysis, for instance the police. Other companies can process our movies, for instance to run intelligence algorithms on them. No support from Quadrox is needed, because we only use standard mechanisms.

OPC and ASF allow you to combine information from different sources. This way, you can store other information about what was happening at a particular moment in one file, without having to subscribe to any proprietary methods of Quadrox.

OPC also allows you to steer video based on events in your home, office, shop or factory in a standard way. Also, the other way around, the Quadrox video system can be an input for your systems. If you use OPC in your company, implementation will be minimal at your side.

SNMP allows you to monitor a Quadrox video server like any other network component, reducing your network management costs.

The use of standards increases the quality of the software, because we use proven technology. This makes the Quadrox software a future-safe investment.

## Management summary

A standard is a widely accepted and/or officially approved common language that allows devices or software to communicate.

Using standards leads to reduced effort, cost, risk, and time requirements. Standards allow you to be independent of particular vendors, ensuring price drops due to competition, everlasting access to data and high quality, low cost system building through a “mix and match” strategy. Standards are proven, future-safe technology. For integrators, using standards means a one-time investment and lower development effort.

Quadrox has replaced analogue video security standards by four IT standards: standard codecs, the ASF file format, OPC for events and SNMP for service messages. The use of these standards leads to all the benefits above, making an investment in Quadrox a low-cost and safe one.

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<sup>1</sup> Please refer to other Quadrox documentation for a more extensive explanation about these standards.