

Telematics Trendline

Following the Growth of Automotive Telematics

By Derek Kaufman, C3 Network, Inc.

Telematics Trendline is a series of monthly articles by Derek Kaufman, C3 Network, Inc., designed to inform AAIA members about the trends in telematics applications for both the retail automotive and commercial trucking industries. For the full November article, or for more of the series, visit <http://www.aftermarket.org/Publications/Telematics-Trendline.aspx>.

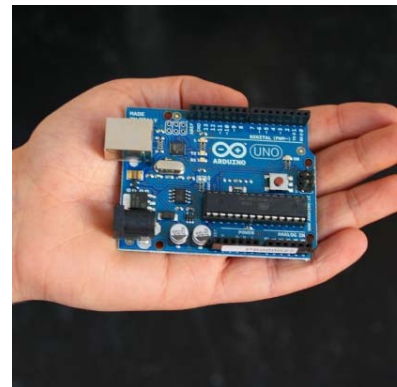
This month:

- **Arduino**
- **BioMed Telematics**

A mixed bag this edition, ranging from Makers to Medical.

Arduino

One of the benefits of adding young engineers to your team is their knowledge of prototyping tools born of economic scarcity. College students don't have money (we know that's a generalization but we harken back to the days in engineering school when we would buy five 99 cent Big Chief burgers and microwave one each night of the week as our day's "main meal", and we assume students are still doing similar things) so they need alternatives to costly electronics for their projects. Those alternatives can find their way into your prototyping efforts.



We urge you to talk to some of your youngest engineers about their prototyping experiences. You might hear something like "Yeah, I used a 10 Hz GPS module tied to an Arduino board and just sorted out the sensors and the communication protocol with Wiring software." A few questions would inform you about the rather common use in colleges of open source Arduino IC boards to build system mock-ups to try out new ideas.

The Arduino project started in the Interaction Design Institute in Ivrea, Italy in 2005 as a way to supply students with low cost integrated circuit boards for school projects. Founders Massimo Banzi and David Cuartielles thought that a standard setup of a processor, input/output connector and boot loader could act as a programmable base for all kinds of applications. They used open-source Wiring software developed by Hernando Barragán to complete the package. Over time, word spread about the versatility of Arduino's setup resulting in worldwide popularity of the boards.

There are other open source controllers with more power. The Make controller, a joint venture between the folks at Make Magazine (www.makezine.com) and the Making Things team (<http://www.makingthings.com>) offers a nice set of features. If that's not enough, you can move up to Intel's Base Management Controller to gain more power and freedom to program. (<http://software.intel.com/sites/oss/>) By the way – we should all be fostering the kinds of inventiveness going on at the Make Faire – more on that in a future issue.

BioMed Telematics

It is natural that AAIA members would tend to think about telematics in terms of vehicles and automotive service. Indeed, AAIA's Shop of Tomorrow demonstration at AAPEX this month will make that point abundantly clear. But if there is a market with the potential to dwarf automotive telematics it is health care, so we thought we should include it in one of our Trendline articles.

Want to take a college course with strong job prospects? Try "Telematics Nursing". The race is on to develop all kinds of body function sensors that will tie chronically ill patients to caregivers who can monitor vital signs and prescribe courses of action in event of abnormalities.

The European Commission's Health Telematics Working Group of the High Level Committee on Health (Yes, there is such a thing. Search for the term "medical telematics" on the United States Health and Human Services website and the term is not recognized) is working to establish interoperability of the many information and communication systems used by various health organizations across Europe. They are working with both the Comité Européen de Normalisation (CEN) and the International Standards Organization (ISO) and encouraging the use of open source software to create common databases, sensing technology and communication protocols so all health care organizations can access a common database on your health. They acknowledge telematics as a game changer in the future of patient-caregiver relationships.

You might also want to check out the European Health Telematics Association at www.ehtel.org.



Take a look at ixcellence GmbH and their eHealth solutions.

(www.ixcellence.com) Their ixTrend software aggregates the data from medical signal devices and forms visual files that can be analyzed then stored in a patient's folder.

And the big boys are getting into medical as well. The Connected Health Care Solutions group formed by Verizon is focused on telemedicine and telematics solutions. Hughes Telematics, Qualcomm and American Medical Alert have formed a joint venture that will move Qualcomm's former Lifecomm unit to a mobile Personal Emergency Response Service (mPERS) focused on seniors and their caregivers in the USA. The service is centered on a wearable device that incorporates GPS, cell connection and fall detection through accelerometers. Look for expansion to vital sign monitoring in the future.

(<http://www.hughestelematics.com/pp/whitepapers/lifecommwp.php>)

Telematics Trendline is a monthly news article written as a service to AAIA members. The reference to any specific commercial products, processes, or services by trade name, trademark, manufacturer or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by AAIA. The views and opinions of the author do not necessarily state or reflect those of the AAIA staff.