HotSpot Episode 54: Floating Sphere Sonically Responds to Environment

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This week on WDD's HotSpot,

- A floating sphere [1] comprised of a balloon, helium, and electronics has been created to determine how sonic objects mediate between people, technology, and places. The sphere responds sonically to people and its surroundings by means of a battery-powered Arduino, an Adafruit Wave Shield hacked to record and playback audio and a small speaker. The sphere records acoustics in lifts, stairs, tunnels, and car parks, and replays these ambient sounds producing a delayed echo of human activity.
- European researchers have developed LABONFOIL [2], a ground-breaking diagnostic system based on smart cards and skin patches combined with a portable reader that sends test results directly to a remote computer, tablet, or smartphone through a wireless connection. This small lab can already detect cocaine consumption, monitor colon cancer, identify bacteria in food, and analyze environmental contamination like the quality of water. Researchers used foils, instead of traditional wafers, to create the cards and the patch. After extensive validation tests, they are now ready to be used by the market.
- During launch, a satellite is flung into orbit with tremendous force, attaining speeds that are about 40 times faster than a commercial airliner. A critical moment is when the satellite separates from its rocket and starts transmitting radio signals. A receiving station on the ground has to be ready and waiting, pointed at precisely the right spot in the sky to catch the transmission. If the antenna is not pointed perfectly, or if the satellite zips by out of its 'field of view' before acquisition, the signal could be missed altogether. SARAS – a Spanish acronym for 'Fast Acquisition of Satellites and Launchers' – is a circular array of eight small radio-frequency sensors mounted around the rim of an existing dish antenna. According to Magdalena Martinez de Mendijur, a systems engineer at ESA's [3] Operations Centre in Germany. "The signals received by these eight are combined, and the system can estimate the direction of arrival of the incoming radio beam, and the entire dish can be repointed directly at the satellite with great precision and accuracy, even when the incoming signal is weak or distorted."

Do you have story ideas? Comment below or email wdd_web@advantagemedia.com [4] we'll cover them in an upcoming episode.

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