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## Counterfeit Vaccines are proliferating and threaten to undermine the Covid-19 rollout

As Covid-19 vaccines roll out in several countries, counterfeits are being marketed online.<sup>1</sup> This was the lead for a Wall Street Journal report on the sale of fake vaccines Jan 15, 2021. Phony vaccines are proliferating and resulting in fraud, loss of personal information, fake websites, undermined consumer confidence and a real public health risk. Monsoor Amiji, Professor of Pharmaceutical Sciences at Northeastern University, notes that water or colored liquids that look like vaccines with labels that look like a Moderna or Pfizer label are beginning to proliferate. Though some people may think that fake medications are only a problem in poorer countries or those with compromised health care systems, they are a problem globally according to Pernette Bourdillon Esteve, the WHO's acting team lead for incidents and substandard and falsified medical products.<sup>2</sup> Fake vaccines undermine our healthcare system, rob people of their health care, result in no protection from Covid-19 and can feasibly lead to grievous injury, even death.

Conventional printed labels, bar codes, QR codes and holograms provide little to no protection from counterfeits. Labels for critical new vaccines being distributed today include printing and graphics that are simple to reproduce and impossible for logistics providers, physicians and consumers to identify as authentic or counterfeit. A more sophisticated solution is necessary and it must be a solution that can be widely used and implemented so that essentially anyone can authenticate a genuine vaccine or identify a dangerous phony. Smart-tag technology is available today that can be applied as a label and read with a smartphone. Most recently, the engineers at American Semiconductor have demonstrated smart-tags that can be applied to the curved surface of vaccine vials. Their smart-tag solution is a thin electronic system based on Semiconductor-on-Polymer™ (SoP) advanced packaging. The new tag can be applied as an adhesive label and includes an ultra-thin high-performance SoP chip. The smart-tag's programmable capability implements rolling encryption codes that can authenticate individual vaccine vials at any time using a smartphone. The new programmable label technology includes serialization for each vial and the ability to track and trace vaccine vials from first bottling through last use. The smart-tags are based on near field communications (NFC) and require no battery so they have almost unlimited shelf life.



Vaccine Vial Anti-Counterfeit Track & Trace  
Smart-tag – American Semiconductor

These smart-tags are currently available for demonstration and evaluation. More importantly, the smart-tag manufacturing process to support the tags is an on-shore U.S. capability that can be quickly ramped to high volume to meet the demand for the smart-labels needed to authenticate Covid-19 vaccines and maintain confidence in our health care system.

For more information regarding smart-tag technology for vaccine vial authentication, tracking and tracing contact [sales@americansemi.com](mailto:sales@americansemi.com).

<sup>1</sup> Tai, C. (2021, January 15). *Vaccines: What to Know About Counterfeit Shots Sold Online*. WSJ. <https://www.wsj.com/video/fake-covid-19-vaccines-what-to-know-about-counterfeit-shots-sold-online/B7D8E117-512D-41D2-A0C7-BE90AFEC80EA.html>

<sup>2</sup> Wright, L. (2021, January 4). *Officials warn of fake COVID-19 vaccines*. DW Science <https://www.dw.com/en/officials-warn-of-fake-covid-19-vaccines/a-56123830>