

# Providing the Smart Clothes for Security Forces by Adopting the IOT Technology

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**Abstract:** *Smart clothing and body sensors for military use may not sell the same way smartphones do, but it's still a growing market. Tractica forecasts that overall shipments of smart clothing will rise from 968,000 units in 2015 to 24.75 million units in 2021, a compound annual growth rate of nearly 72 percent. Smart clothing has become a key component in the creation of new military uniforms, designed to improve the health of the soldier while providing added battlefield insight. Smart military clothing is expected to be a \$500 million market by next year. The military has partnered with industry leaders, other government agencies, and academia to support and advance the development of potential smart clothing solutions that would be beneficial to the U.S. military by giving them a technological and tactical advantage over its foes," write the students of the University of California Berkley 's Sutardja Center in their analysis of the smart clothing market. Agent Detection is also known as environmental sensors, these sensors are designed to detect and avert dangers by measuring things such as radiation, chemicals, viruses, bacteria, fungi, humidity, temperature and atmospheric pressure. When working with smart clothing and body sensors, the challenge is to create a garment that can be treated like other clothing, being comfortable, flexible and washable. At the same time, many wearable systems are meant to be worn during rugged activity. Soldiers in the field need wearable clothing that can withstand a wide range of temperatures. This clothing also needs to provide effective shock and vibration resistance, as well as resistance to chemicals or solvents that might otherwise destroy a commercial device.*

**Keywords:** Providing the Smart Clothes for Security Forces by Adopting the IOT Technology

## REFERENCES

- [1]. Perego, P., Moltani, A., Andreoni, G.: Sport monitoring with smart wearable system. *Stud. Health Technol. Inf.* 177, 224–228 (2012)
- [2]. Sahin, O., Kayacan, O., Bulgun, E.Y.: Smart textile for the soldiers of the future. *Defence Sci. J.* 55, 195–205 (2005)
- [3]. Bonato, P.: Advances in wearable technology and applications in physical medicine and rehabilitation. *J. Neuroeng. Rehabil.* 2(1), 2 (2005)
- [4]. Scataglini, S., Andreoni, G., Gallant, J.: A review of smart clothing in military. In: *Proceeding WearSys@MobiSys 2015*, pp. 53–54 (2015)
- [5]. Gilsoo, C.: *Smart Clothing: Technology and Applications*. CRC Press, Boca Raton (2009)
- [6]. Tharion, W.J., Buller, M.J., Karis, A.J., Muller, S.P.: Acceptability of a wearable vital sign detection system. In: *Proceedings of the Human Factors and Ergonomics Society* (2007)
- [7]. Andreoni, G., Standoli, C.M., Perego, P.: Sensorized garment for monitoring. *biomedical Design issues*. In: *International Conference of Sensors and Applications* (2015)
- [8]. Gemperle, F., Kasaback, C., Stivoric, J., Bauer, M., Martin, R.: Design for wearability. In: *Proceedings of the 2nd IEEE International Symposium on Wearable Computers* (1988)
- [9]. Tao, X., Koncar, V., Huang, T.-H., Shen, C.L., Ko, Y.C., Jou, G.T.: How to make reliable, washable, and wearable textronic devices. In: Chung, H.-J., Kim, T. (eds.) *Sensors*, Basel, Switzerland (2017)

- [10]. Scataglini, S., Truyen, E., Perego, P., Gallant, J., Tiggelen, D.V., Andreoni, G.: Smart clothing for heart rate variability measures in military. HBIM J. 1, 74 (2017)
- [11]. Scataglini, S., Truyen, E., Perego, P., Gallant, J., Tiggelen, D.V., Andreoni, G.: Smart clothing for human performance evaluation: biomechanics and design concepts evolution. In: 5th International Digital Human Modeling Symposium, Germany, Bonn (2017)
- [12]. Scataglini, S., Andreoni, G., Truyen, E., Warnimont, L., Gallant, J., Tiggelen, D.V.: Design of smart clothing for Belgian soldiers through a preliminary anthropometric approach. In: Proceedings 4th DHM Digital Human Modeling, Montréal, Québec, Canada, 15–17 June (2016)
- [13]. Drillis, R., Contini, R.: Body Segment Parameters, Report 1166-03. Office of Vocational Rehabilitation, New York (1966)
- [14]. Scataglini, S.: Ergonomics of gesture: effect of body posture and load on human performance, Joint Ph.D. Politecnico di Milano and Belgium Royal Military Academy (2017).
- [15]. (<https://www.politesi.polimi.it/handle/>
- [16]. Smith, C.J., Havenith, G.: Body mapping of sweating patterns in male athletes in mild exercise-induced hyperthermia. Eur. J. Appl. Physiol. [17] 111(7), 1391–1404 (2011)
- [17]. Xiang, Xing Zhao. Smart textiles(3):Very smart.Textile Asia, August 2001, 35-37.
- [18]. Kirstein, T.; Bonan, J.; Cotter, D. & roster,G. Electronic textiles for wearable computer systems. Canadian Textile J., July/August 2002,29-31.
- [19]. Biberdorf, Curt. Active fabric. The Warrior,Jan-Feb 2002, 10-1 1.
- [20]. Andrews, A. Michael. Smaller, smarter and lighter systems. In Nanoscience for the Soldier Workshop, 08-09 February 2001, Army Research Office.
- [21]. Wakefield, J. US looks to create robo-soldier.<http://news.bbc.co.uWl/hi/sci/ 1908729.stm>