International Journal of Advanced Culture Technology Vol.5 No.3 67-72 (2017)
https://doi.org /10.17703/IJACT.2017.5.3.67

IJACT 17-3-8

Analysis on the special quantitative variation of dot model by the position transform

Jeong-lae Kim*, Kyung-seop Kim**

**Department of Biomedical Engineering, Eulji University, Seongnam, 13135, Korea*
jlkim@eulji.ac.kr
***Department of Faculty of Liberal Arts, Eulji University, Seongnam, 13135, Korea*
kksgmtt@eulji.ac.kr

Abstract

Transform variation technique is constituted the vibration status of the flash-gap recognition level (FGRL) on the distribution recognition function. The recognition level condition by the distribution recognition function system is associated with the scattering vibration system. As to search a position of the dot model, we are consisted of the distribution value with character point by the output signal. The concept of recognition level is composed the reference of flash-gap level for variation signal by the distribution vibration function. For displaying a variation of the FGRL of the maximum-average in terms of the vibration function, and distribution position vibration that was the a distribution value of the far variation of the Dis-rf-FA-$\alpha_{MAX\text{-}AVG}$ with 5.74±1.12 units, that was the a distribution value of the convenient variation of the Dis-rf-CO-$\alpha_{MAX\text{-}AVG}$ with 1.64±0.16 units, that was the a distribution value of the flank variation of the Dis-rf-FL-$\alpha_{MAX\text{-}AVG}$ with 0.74±0.24 units, that was the a distribution value of the vicinage variation of the Dis-rf-VI-$\alpha_{MAX\text{-}AVG}$ with 0.12±0.01 units. The scattering vibration will be to evaluate at the ability of the vibration function with character point by the distribution recognition level on the FGRL that is showed the flash-gap function by the recognition level system. Scattering recognition system will be possible to control of a function by the special signal and to use a distribution data of scattering vibration level.

Keywords: *limpness function, limpness sensory unit motion, static sensory motion, static body sensory function*

1. Introduction

The variation of the material is to be captured new function with improved function protocols. Flash-gap function is suggested to effect the assessing by measuring the rate at which to quantify of the correction of spread-material. A serial signal value of the total point of all master segments was observed stable situation by shape of position the on the spacious area [1]. The method of these formation areas are used to compare a boundary dots for instability-stability, point of tags is management of widespread technology that can store more information than code signals or bar code tag. Flash-gap function is suggested a single measure for effect the variation position on the material. The flash-gap condition is implied amount of variation for the change element on the connection function [2-3]. The integrated position in the system has the role of point

Manuscript Received: 3 August, 2017 / Revised: 10 August, 2017 / Accepted: 28 August, 2017
Corresponding Author: kksgmtt@eulji.ac.kr
Tel:+82-31-740-7138, Fax: +82-31-740-7360
Dept. of Faculty of Liberal Arts, Eulji University., Korea

understanding with the tag. Therefore, position real dot transform is ready with high useful character point of signal communication and variation signal by the distribution vibration function. Dot as a block unit also provides a valuable communication coding and pattern code [4]. In this study was the item of the transform variation technique that is to be constituted the level recognition with the distribution variation by the flash-gap function. This function is counted of the distribution value of the flash-gap level by the recognition modulus that is consisted of search a position of the dot model, is consisted of the distribution value with character point by the output signal. Also, the scattering vibration is to be evaluated at the ability of the vibration function with the character point by the distribution recognition level that is showed the flash-gap recognition level by the distribution recognition function system.

2. Proposed method of transform variation technique for signal

2.1 System of position function signal

The distribution recognition function (Dis-RF) is incurred the feature of position function on the dot model. Center position activity is analogized the minute changes through flash-gap central level (FGCL). The results of FGCL are affected in accordance with the parameter of vibration position level (VPL). The distribution vibration function (Dis-VF) is consisted of with exercise of the distribution vibration change in the flash-gap activity [5]. The Dis-RF system is to make the significant form for the character by the distribution recognition function system (Dis-RFS). Significant of Dis-RF is to make the minute scattering level that is similar to a control vibration by the center position techniques (CPT). Controlled minute vibration is integrated in the scattering center position function (Sc-CPF) that is leaded by the distribution flank-vicinage (Dis-FV) tool on the dot model. The arithmetic feature by Dis-RFS is leaded with compound of output parameters for the character by the distribution far-convenient (Dis-FC) in the scattering position function (Sc-PF). The vibration function by Dis-RF is to make with compound of output parameters by the scattering recognition level (Sc-RL) in the Dis-FS. The SPF was estimated a central vibration techniques (CVT) of x-y direction from center of axial (COA) on the CPT of Dis-RF. The scattering recognition level function (Sc-RLF) is obtained scattering signal from horizontal-vertical mechanisms on the CPT of Dis-RF. The distribution flash-gap level (Dis-FGL) is obtained the scattering recognition and the scattering function on Sc-RLF. The Sc-RLF is ignored to counter on the minute scattering signal by the scattering recognition function (Sc-RF) (Figure 1) [6-8].

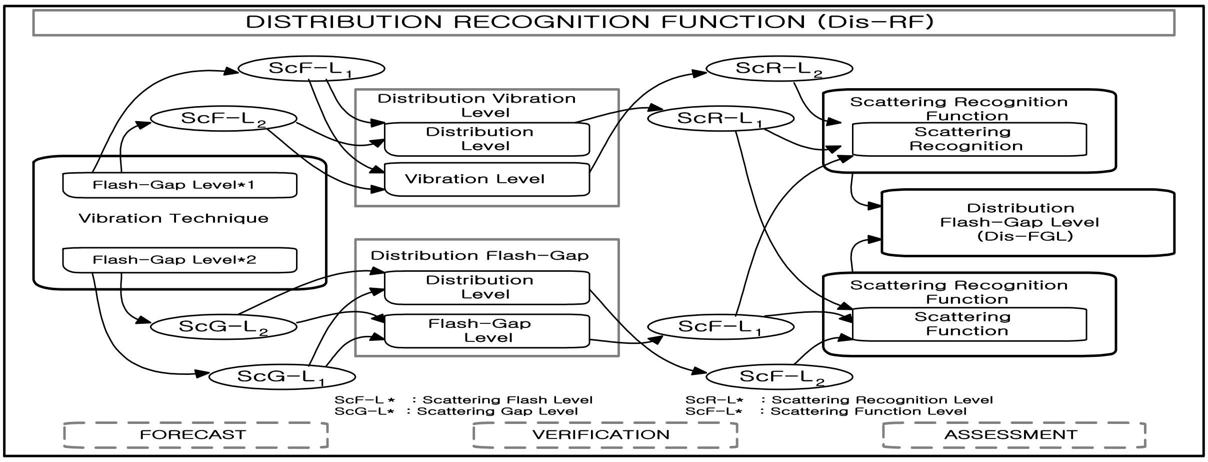

Figure 1. Structure of distribution recognition function system of the vibration level

2.2. System of transform variation signal

The distribution recognition function (Dis-RF) measures a score of central position on the vibration. Dif-RF is Overall Vibration Level (OVL), Far-Convenient Vibration Level (FCVL) and Flank-Vicinage Vibration Level (FVVL). These levels are standard deviations that assess the path of phase around the side-position point center of the main-position and are measured in degrees. The vibration level scores receive the displacement for distribution tag signal in far-convenient (FC) and flank-vicinage (FV). The displacements from horizontal along Dis-FC-axes as x-direction, and from vertical along Dis-FV-axes as y-direction were evaluated as Dis-RF-FC and Dis-RF-FV respectively. FVVL can measure both amplitude and phase of the received tag signal as I and Q is the of current the far-convenient and far-convenient by the FCVL, Dis-FC is the modulated carrier of far-convenient on the Dis-RF, Dis-FV is the modulated carrier of flank-vicinage on the Dis-RF, $\Delta P_{Dis\text{-}RF\text{-}FC}$ is amplitude and phase of the received tag signal on the Dis-RF[9-11].

$$\Delta P_{Dis-RF} = \frac{I^2_{Dis-FC} + Q^2_{Dis-FV}}{Z_0},\ \varphi = \arctan\frac{Q_{Dis-FV}}{I_{Dis-FC}} \tag{1}$$

$$|\Delta_\gamma| = \sqrt{I^2_{Dis-FC} + Q^2_{Dis-FV}} = \sqrt{\Delta P_{Dis-RF-FC} + Z_0} \tag{2}$$

Where, Z_0 is the input impedance of the receiver. The indirectly measured central position score data, represented as $\Delta\gamma$, is related to the differential reflection coefficient Dis-RF-FC and Dis-RF-FV, can thus be obtained as:

$$\angle(\Delta_\gamma) = \arctan\frac{Q_{Dis-FV}}{I_{Dis-FC}} = \varphi \tag{3}$$

Therefore, the test setting that includes the communication range between main-position and side-position antennas and their system consist of the properly maintain by the monitoring [12]. Spreading center position function (Sp-CPF) requires a combination scores both Sp-CPF-FV and Sp-CPF-FC. The Sp-CPF-value is calculated from absolute α-Dis-RF values, so it is more sensitive to FV-FC and α-Dis-RF level fluctuations. In general, the α-Dis-RF based on the Sp-CPF makes use of the wide space propagation model (4) of the Sp-CPF-FC and Sp-CPF-FV: $\alpha\text{-Dis-RF}(r)[n.u.] = \alpha\text{-}_{Sp\text{-}CPF\text{-}FC}\ \beta\ /r^{\alpha\text{-}Sp\text{-}CPF\text{-}FV} \equiv \alpha\text{-Dis-RF}(r)[dB] = 20\log 10(\alpha\text{-}_{Sp\text{-}CPF\text{-}FV}) - \alpha\text{-}_{Sp\text{-}CPF\text{-}FC}\ 20\log 10(r)$ (4)

The 'r' is the range or distance, and $\alpha\text{-}_{Sp\text{-}CPF\text{-}FV}$ and $\alpha\text{-}_{Sp\text{-}CPF\text{-}FC}$ are coefficients that can be estimated from a non-linear regression that minimizes the root mean square (RMS) by a set of between main-position and side-position. The expression rate of α-Dis-RF(r) is already linearized with respect to $\alpha\text{-}_{Sp\text{-}CPF\text{-}FV}$ and $\alpha\text{-}_{Sp\text{-}CPF\text{-}FC}$ [13-14].

3. Results and Discussion

3.1 Dot modeling of the position transform

Dot model showed the developed position several based on the central system. Side positions are admitted into the experimented point condition to check their transform direction while this signal is used in the spread condition. The other point is kept side-spread-point to provide comparison means as recommended in position control techniques (Figure 2) [15].

3.2 Comparison Database of Dis-FGRL on the Dis-rf-α_{MED} and Dis-rf-$\alpha_{MAX\text{-}MIN}$ and Dis-rf-$\alpha_{MED\text{-}MIN}$

Distribution Recognition Function (Dis-RF) is verified the vibration status of the flash-gap level (FGL) on the vibration technique (VT) condition. VT is to fix the fine objects of the distribution flash-gap level (Dis-FGL) on the Dis-rf-function. And, VT is to maintain the equivalent things of the dot model on the

Dis-rf-function. The results are verified for the character the distribution recognition function system (Dis-RFS) in accordance with the parameter of flash-gap recognition level (FGRL). The experiment is induced excellently an alteration of FGRL is shown in the scattering recognition function effort (Sc-RFE). The experiment of Dis-rf-function is created the Dis-rf-α_{MED}, Dis-rf-$\alpha_{MAX\text{-}MIN}$ and Dis-rf-$\alpha_{MED\text{-}MIN}$ database which are collected from the distribution character vibration function (Dis-CVF) by the Dis-rf effort (Table 1). Distribution character vibration function data are used Matlab6.1 for the calculations.

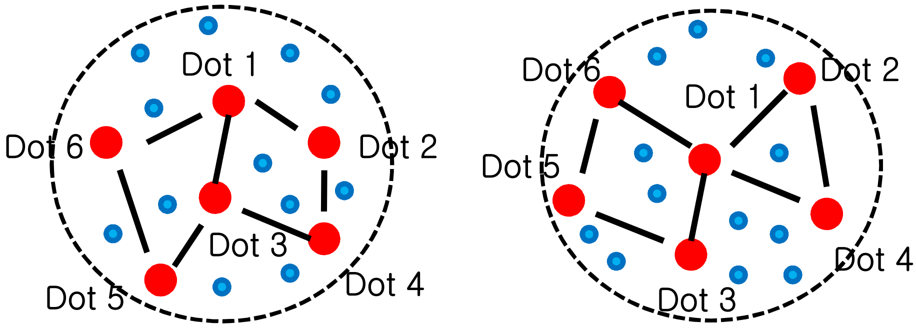

Figure 2: Structure of dot model for the position transform

Distribution Recognition Function (Dis-rf) on the far (FA-α) condition is to be express a distribution flash-gap recognition level (Dis-FGRL) value for the Dis-rf-FA-α_{MED}, Dis-rf-FA-$\alpha_{MAX\text{-}MIN}$ and Dis-rf-FA-$\alpha_{MED\text{-}MIN}$ (Figure 3). The large distribution of the Dis-rf-FA-α_{MED} is to the dot-flank-vicinage (DFV) direction in the Dis-RFS. Besides, Dis-rf effort of far Dis-FGRL is the small distribution to difference between the Dis-rf-FA-$\alpha_{MAX\text{-}MIN}$ and Dis-rf-FA-$\alpha_{MED\text{-}MIN}$ with the same direction in the Dis-RFS. In the Dis-rf effort of far Dis-FGRL is verified a very large distribution at 11.30±0.66 unit with Dis-rf-FA-α_{MED} of the distribution dot function (Dis-DF). In the far Dis-FGRL of Dis-rf effort is verified small distribution at 10.85±1.81 unit with Dis-rf-FA-$\alpha_{MAX\text{-}MIN}$ in the Dis-RFS. The excellently, this effort of distribution dot function (Dis-DF) in the far Dis-FGRL is to be express that a distribution influence is happen the flank-vicinage (FV) direction in the Dis-RFS. It is an important role in the distribution effort of a Dis-rf-Far of far vibration. In the distribution of Dis-rf effort is verified a very large distribution at 4.46±0.25 unit with Dis-rf-FA-$\alpha_{MED\text{-}MIN}$. Distribution Recognition Function (Dis-rf) of convenient (CO-α) condition is to be express a distribution flash-gap recognition level (Dis-FGRL) value for the Dis-rf-CO-α_{MED}, Dis-rf-CO-$\alpha_{MAX\text{-}MIN}$ and Dis-rf-CO-$\alpha_{MED\text{-}MIN}$ (Figure 3). Dis-rf effort of convenient Dis-FGRL is the some distribution to difference between Dis-rf-CO-α_{MED} and Dis-rf-CO-$\alpha_{MAX\text{-}MED}$ with the same direction in the Dis-RFS. Besides, the Dis-rf effort of convenient Dis-FGRL is to be verified a small distribution at Dis-rf-CO-$\alpha_{MED\text{-}MIN}$ of the distribution dot function (Dis-DF) on the FV direction in the Dis-RFS. Dis-rf effort of convenient Dis-FGRL is verified large distribution at 5.78±0.45 unit with Dis-rf-CO-α_{MED} of the distribution dot function (Dis-DF). In the convenient Dis-FGRL of Dis-rf effort is verified small at 3.14±0.35 unit with Dis-rf-CO-$\alpha_{MAX\text{-}MIN}$ on the FC direction in the Dis-RFS. The excellently, this effort of distribution dot function (Dis-DF) in the convenient Dis-FGRL is to be express that a distribution is happen the same direction in the Dis-RFS. But, it is a minute role in the distribution effort of a convenient vibration. In the distribution of Dis-rf effort is verified very large distribution at 1.37±0.20 unit with Dis-rf-CO-$\alpha_{MED\text{-}MIN}$ on the FC direction. The scattering phenomenon of the convenient Dis-FGRL is induced excellently to alter the Ddi-RFS by the scattering dot in the same direction. Distribution Recognition Function (Dis-rf) of flank (FL-α) condition is to be express a distribution flash-gap recognition level (Dis-FGRL) value for the Dis-rf-FL-α_{MED}, Dis-rf-FL-$\alpha_{MAX\text{-}MIN}$ and Dis-rf-FL-$\alpha_{MED\text{-}MIN}$ (Figure 3). Dis-rf effort of flank Dis-FGRL is verified small distribution at

Dis-rf-FL-α_{MED} and Dis-rf-FL-$\alpha_{MAX\text{-}MIN}$ of the distribution dot function (Dis-DF) on the DFV direction in the Dis-RFS. Besides, differently the very small distribution value of Dis-rf-FL-$\alpha_{MED\text{-}MIN}$ is to the DFV direction in the Dis-RFS. Dis-rf effort of flank Dis-FGRL is verified small distribution at 1.93±0.06 unit with Dis-rf-FL-α_{MED} of the distribution dot function (Dis-DF). In the flank Dis-FGRL of Dis-rf effort is verified slightly little at 1.47±0.29 unit with Dis-rf-FL-$\alpha_{MAX\text{-}MIN}$ on the FC direction in the Dis-RFS. The excellently, this effort of the distribution dot function (Dis-DF) in the flank Dis-FGRL is to be express that a distribution is happen the same direction in the Dis-RFS. But, it is a excellently role in the distribution effort of a flank vibration. In the distribution of Dis-rf effort is verified small distribution at 0.70±(-0.17) unit with Dis-rf-FL-$\alpha_{MED\text{-}MIN}$. The scattering phenomenon of the flank Dis-FGRL is induced excellently to alter the Dis-RFS by the scattering dot in the same direction. Distribution Recognition Function (Dis-rf) of vicinage (VI-α) condition is to be express a distribution flash-gap recognition level (Dis-FGRL) value for the Dis-rf-VI-α_{MED}, Dis-rf-VI-$\alpha_{MAX\text{-}MIN}$ and Dis-rf-VI-$\alpha_{MED\text{-}MIN}$ (Figure 3). Dis-rf effort of vicinage Dis-FGRL is verified small distribution at Dis-rf-VI-α_{MED} and Dis-rf-VI-$\alpha_{MAX\text{-}MIN}$ of the distribution dot function (Dis-DF) on the FC direction in the Dis-RFS. Besides, differently the small distribution value of Dis-rf-VI-$\alpha_{MED\text{-}MIN}$ is to the DFV direction in the Dis-RFS. Dis-rf effort of vicinage Dis-FGRL is verified very small distribution at 0.35±0.02 unit with Dis-rf-VI-α_{MED} of the distribution dot function (Dis-DF). In the vicinage Dis-FGRL of Dis-rf effort is verified very little at 0.24±0.02 unit with Dis-rf-VI-$\alpha_{MAX\text{-}MIN}$ on the FC direction in the Dis-RFS. The excellently, this effort of the distribution dot function (Dis-DF) in the vicinage Dis-FGRL is to be express that a distribution is happen the opposite direction in the Dis-RFS. But, it is a excellently role in the distribution effort of a vicinage vibration. In the distribution of Dis-rf effort is verified very small distribution at 0.11±(0.01) unit with Dis-rf-VI-$\alpha_{MED\text{-}MIN}$ on the FC direction in the Dis-RFS. The scattering phenomenon of the vicinage Dis-FGRL is induced excellently to alter the Dis-RFS by the scattering dot in the Dis-FV direction.

Table 1: Average of the distribution dot function (Dis-DF): the far DIS-FGRL (Dis-rf-FA$\alpha_{MED\text{-}MIN}$), convenient DIS-FGRL (Dis-rf-CO$\alpha_{MED\text{-}MIN}$), flank DIS-FGRL (Dis-rf-FL$\alpha_{MED\text{-}MIN}$) and vicinage DIS-FGRL (Dis-rf-VI$\alpha_{MED\text{-}MIN}$) condition.

Average α	FA $\alpha_{Avg\text{-}DIS\text{-}FGRL}$	CO $\alpha_{Avg\text{-}DIS\text{-}FGRL}$	FL $\alpha_{Avg\text{-}DIS\text{-}FGRL}$	VI $\alpha_{Avg\text{-}DIS\text{-}FGRL}$
Dis-rf-α_{MED}	11.30±0.66	5.78±0.45	1.93±0.06	0.35±0.02
Dis-rf-$\alpha_{MED\text{-}MIN}$	4.46±0.25	1.37±0.20	0.70±(-0.17)	0.11±(0.01)

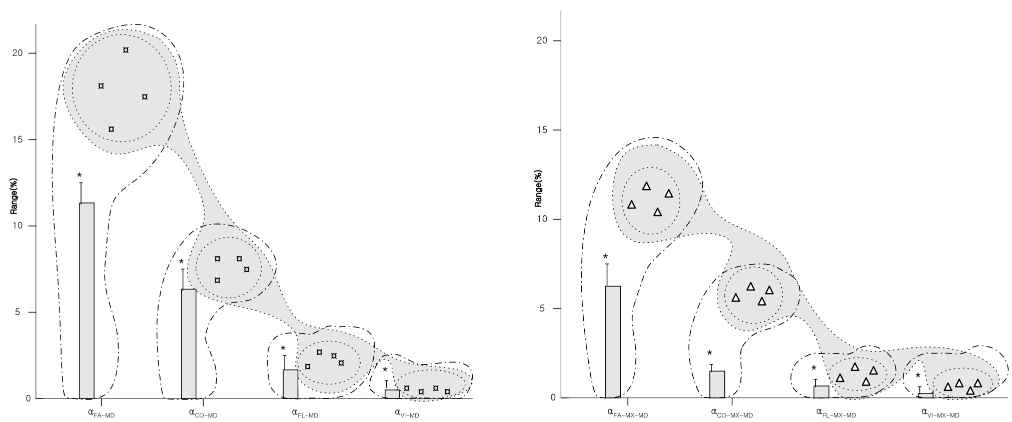

Figure 3: Dis-rf-function of the data on the distribution condition for effort: parameter of the Dis-rf-α_{MED} and Dis-rf-$\alpha_{MAX\text{-}MIN}$ and Dis-rf-$\alpha_{MED\text{-}MIN}$

4. Conclusion

In this paper was a transform variation technique that was constituted of the vibration recognition with the distribution recognition function by the flash-gap recognition level. This function was shown a value of the distribution vibration function (Dis-VF) by the recognition rate, to define a variation data from the basis reference by flash-gap level (FGL). As to search a position of the dot model, we are consisted of the distribution value with character point by the output signal. Also, the scattering vibration was to evaluate the capacity of the vibration function, to use a distribution data of scattering vibration level on the Dis-FGRL that was shown the flash-gap function by the distribution recognition level system.

References

[1] X. Wang, S. Yuan, R. Lau, W. Lang, "Dynamic localization based on spatial reasoning with RSSI in wireless sensor networks for transport logistics," *Sens. Actuators A Phys.*, Vol.171, No.2, pp.421–428, 2011.

[2] N. Sharma, J.H. Youn, "RFID- *Based Direction Finding Signage System (DFSS) for healthcare facilities,"* in: Cristina Turcu (Ed.), Sustainable Radio Frequency Identification Solutions, INTECH Open Access Publisher, pp.207–216, 2010.

[3] A. Giretti, A. Carbonari, M. Vaccarini, *"Ultra wide band positioning systems for advanced construction site management,"* in: Fouzia Boukour Boukour, Atika Rivenq (Eds.), New Aroach of Indoor and Outdoor Localization Systems, INTECH Open Access Publisher, pp.89–112, 2012.

[4] M.e. Ibrahim, C. Hamimi, K. Omar, "Emulation-based fault analysis on RFID tags for robustness and security evaluation," *Microelectronics Reliability*, Vol. 69, pp.115–125, 2017.

[5] J.L. Kim, K.S. Hwang, Y.S. Nam, "Assessment of the Posture Function by Head Movement," *The Journal of IIBC,* Vol.14, No.5, pp.131-135, 2014.

[6] J.L. Kim, K.O. Shin, "Study of runout-motion in body physical technique: physical index and sensory index," *International Journal of Advanced Smart Convergence*, Vol.5, No.3, pp.56-60, 2016.

[7] J.L. Kim, K.D. Kim, "Presentation of central motion techniques: limpness motion function and limpness sensory unit function," *International Journal of Advanced Culture Technology*, Vol.4, No.3, pp.56-61, 2016.

[8] J.L. Kim, H.J. Kim, "A Study of energy conversion by the penetration control in the skin," *Journal of the Convergence on Culture Technology*, Vo.3, No.1, pp.43-48, 2017.

[9] J. Huiting, H. Flisijn, A.B.J. Kokkeler, G.J.M. Smit, "Exploiting phase measurements of EPC Gen2 RFID tags." *IEEE Int Conf RFID-Technol Appl (RFID-TA)*, pp.1–6, 2013.

[10] A. Bekkali, S.C. Zou, A. Kadri, M. Crisp, R.V. Penty, "Performance analysis of passive UHF RFID systems under cascaded fading channels and interference effects." *IEEE Trans Wirel Commun,* Vol.14, No.3, pp.1421–33, 2015.

[11] E. DiGiampaolo, F. Martinelli, "Mobile robot localization using the phase of passive UHF RFID signals." *IEEE Trans Ind Electron,* Vol.61, No.1, pp.365–76, 2014;.

[12] J. Zhang, G.Y. Tian, A.B. Zhao, "Passive RFID sensor systems for crack detection & characterization," *NDT&E International,* Vol.86, pp.89–99, 2017.

[13] Y.Á. López, M.E.C. Gómez and F.L.H. Andrés, "A received signal strength RFID-based indoor location system," *A Sensors and Actuators,* Vol.255, pp.118–133, 2017.

[14] K. Chawla, C. McFarland, G. Robins, C. Shope, "Real-time RFID localization using RSS,"*in: 2013 International Conference on Localization and GNSS (ICL-GNSS),*Turin(Italy), pp.1–6, 25–27June, 2013.

[15] A. Giretti, A. Carbonari, M. Vaccarini, *"Ultra wide band positioning systems for advanced construction site management,"*:in: Fouzia Boukour Boukour, Atika Rivenq (Eds.), New Aroach of Indoor and Outdoor Localization Systems, INTECH Open Access Publisher, pp. 89–112, 2012.