

Dedication

This work is dedicated to my family, without their caring support it would not have been possible.

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Abstract

Direction finding (DF) refers to the establishment of the direction from which a received signal was transmitted. The source of a transmission located in space via many techniques, one of them is the triangulation method.

The purpose of this research is to study the triangulation technique for direction finding, and building a receiver with a board that can be utilized with C++ software to receive signals from two antennas.

After the simulation was done, the results were compared and it has a good accuracy in terms of angle of arrival but it cannot locate the position of the target (transmitter).



مصطلح (تحقيق الاتجاه) يشير إلى تحديد اتجاه المصدر في الفضاء الذي وردت منه إشارة ، وتوجد عدة طرق لتحقيق ذلك منها طريقة المثلثات. والغرض من هذا البحث هو دراسة تقنية التثليث لإيجاد الاتجاه، وبناء جهاز استقبال بتصميم دائرة إلكترونية لتلقي إشارات من هوائيين والتي يمكن استخدامها مع برنامج C++.

تم برنامج المحاكاة وبمقارنة النتائج يحتوي على قدر جيد من الدقة من حيث زاوية الوصول لكنه لا يستطيع تحديد موقع الهدف (المرسل).

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Abbreviations

GPS	Global Positioning System
RFI	radio frequency interference
DF	direction finding
AMPS	Advanced Mobile Phone Service
PSTN	public switched telephone network
MTSO	mobile telephone switching office
MSU	mobile subscriber unit
GSM	global system for mobile
TDMA	time division multiple access
BSS	base station system
OSS	operation and support system
HLR	home location register
MSC	mobile services switching center
VLR	visitor location register
AUC	authentication center
EIR	equipment identity register
BSC	Base station controller
OMC	operations and maintenance center
LAI	location area identity
TDMA	time division multiple access
DTMF	dual-tone multifrequency
CDMA	Code division multiple access
PDC	Personal Digital Cellular
VPNs	virtual private networks
PMR	Private mobile radio
CTCSS	Continuous Tone Coded Squelch System
ITU	International Telecommunication Union
TVRO	Television Receive Only

DBS	Direct Broadcast Satellite
GSO	Geo-Stationary Earth Orbit
VSAT	Very Small Aperture Terminal
NOC	network operations center
BUC	Block up converter
LNB	Low-noise block converter
OMT	Orthomode transducer
IFL	Interfacility Link Cable
IDU	Indoor unit