AN RF BANDWIDTH SWITCH FOR MULTIMEDIA TRANSMISSION

by

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SAMEVATTING

`n RF Bandwydte skakelaar vir multimedia transmissie

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Die doel van hierdie navorsingsprojek was om `n RF bandwydte skakelaar te ontwikkel wat multimedia skakeling en transmissie in `n tegnologie gebaseerde onderrigstelsel moontlik maak, sonder om staat te maak op persoonlike rekenaartegnologie.

Die dissiplines binne tegnologie gebaseerde onderrigstelsels wat kortliks ondersoek word, is die opvoedkundige vereistes soos vasgestel deur didaktiese kundiges, asook kommunikasiestelsels wat moderne multimedia ondersteun.

Kenmerke van moderne tegnologie gebaseerde onderrigstelsels word onder die loep geneem binne die Suid-Afrikaanse konteks, sowel as nie-tegniese aspekte, soos toegevoegde waarde verkry van audio, video engeïntegreerde rekenaartoepassings.

Informele eksperimente word beskryf waartydens `n RF bandwydte skakelaar toegepas word om die funksionele kenmerke van `n tegnologie gebaseerde onderrigstelsel te verkry, sonder om staat te maak op persoonlike rekenaartegnologie. Die lewering van `n informele lesing tydens die eksperiment word bespreek, asook waarnemings gemaak tydens die eksperiment.

Die eksperimente mag dien as `n metode om die potensiële toepassing van bandwydte skakelaars vir tegnologie gebaseerde onderrigstelsels te evalueer. Aanbevelings vir toekomstige projekte van hierdie aard kan vervolgens gemaak word.

Sleutelterme:
RF bandwydte skakelaar, multimedia transmissie, Ruthroff se impedansie transformator, transmissielyn transformator, hibride sommeerder, invoegverlies, transmissiekenmerke, analoog video transmissie, faseverwisselende lyn, tegnologie baseerde opleiding (T.B.O.).

ABSTRACT

An RF bandwidth switch for multimedia transmission
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The purpose of this research project was to develop an RF bandwidth switch to make multimedia switching and transmission possible within a technology based training system, without reliance on personal computer technology.

The disciplines briefly examined within technology based training systems are educational requirements set by didactic expertise, as well as communications structures supporting modern multimedia.

Features of modern technology based training systems are considered within the South African context, as well as non-technical aspects of technology based training systems such as the value added by audio, video, and integrated computer applications.

Informal experiments are described wherein an RF bandwidth switch is applied to obtain the functional characteristics of a technology based training system, without reliance on personal computer technology. The delivery of an informal lecture during the experiment is discussed, as well as observations made during the experiment.

The experiments may serve as a method to evaluate the potential application of RF bandwidth switches for technology based training. Recommendations for future projects of this nature may then be made.

Key terms:
RF bandwidth switch, multimedia transmision, Ruthroff's impedance transformer, transmission line transformer, hybrid combiner, insertion loss, transmission characteristics, analogue video transmission, phase alternating line (P.A.L.), technology based training (T.B.T.).

This study is dedicated to

my wife Elsa

for her support

and personal sacrifices.

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