

5/10

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

División de Nuevas Creaciones

E. S. D.

SUPERINTENDENCIA Y COMERCIO
Radicación: 01033030 0330003 Folios: 150
Fecha (HAB): 2001-08-22 17:03:52
Trámite: 002 PATENTES D, 1 REGISTRO/ 44 RESPUESTA
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

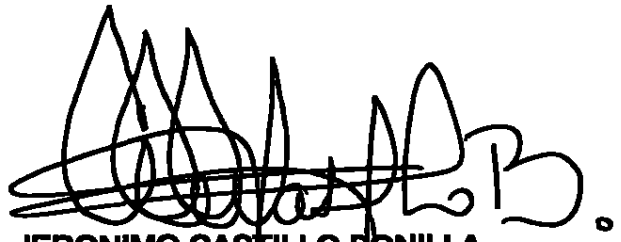
Ref: EXPEDIENTE N° 01-033030
solicitud de patente a nombre de
HUGHES ELECTRONICS CORPORATION

Me refiero al examen de forma recaldo en el asunto de la referencia y adjunto presento los siguientes documentos:

- 1- Fotocopia del poder donde consta la existencia y representación legal de la sociedad solicitante, legalizado por Apostilla, con su traducción simple.
- 2- El documento de cesión legalizado por Apostilla con su traducción simple.
- 3- Las copias certificadas de las solicitudes estadounidenses Nos 60/200.473; 60/201.039 y 08/733.229, de las cuales se reclama prioridad, con la traducción simple del arte principal. 52783, 52784.
- 4- El recibo No 01- 52783, 52784. por concepto de las tasas de dos prioridades no pagadas. La sociedad está constituida de acuerdo con las leyes del Estado de Delaware, Estados Unidos de América.

Como el expediente queda así completo, pido se ordene la publicación del extracto.

Atentamente,



JERONIMO CASTILLO BONILLA
T.P. 104167 del C. S. de la Judicatura
C.C. 79.462.057 de Bogotá



52

Industria y Comercio
SUPERINTENDENCIA

NIT : 800176089-2

SUPERINDUSTRIA Y COMERCIO

Radicación : 01033030 00050003

Folios: 150

Fecha (UTC): 2001-08-22 17:03:52

Trámite : 002 PATENTES D 1 REGISTRO/ 444 RESPUESTA

Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

RECIBO OFICIAL DE CAJA : 01 - 52,783
FECHA : AGOSTO 22 DE 2001

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	Vr. PAGO
CASTILLO PINEDA	CONSIGNACION	BANCO POPULAR	050-00110-6	8207872	22/08/2001	402,000.00

***** CONCEPTO *****

CANT. CONTABILITICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-01 SOLICITUDES	82 INVOCACION DE UNA PRIORIDAD EN MU	100,000.00
	TOTAL :	100,000.00

SON: CIENTO MIL PESOS

RESPONSABLE :

RECIBO DE CAJA APLICADO AL EXPEDIENTE No.

Carrera 13 No. 27-00 Pisos 5, 7 y 10
Conmutador 382 0840
Fax 350 5220
E-mail: Info@sic.gov.co
www.sic.gov.co
Bogotá, D.C., Colombia

53

Industria y Comercio
SUPERINTENDENCIA

NIT : 800176089-2

SUPERINDUSTRIA Y COMERCIO
Radicación : 01033030 00000003 Folios: 190
Fecha (REC): 2001-08-22 17:03:52
Trámite : 002 PATENTES D 1 REGISTRO/ 44 RESPUESTA
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

RECIBO OFICIAL DE CAJA : 01 - 52,784
FECHA : AGOSTO 22 DE 2001

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	Vr. PAGO
CASTAÑO PINEDA	CONSIGNACION	BANCO POPULAR	050-00110-6	8207872	22/08/2001	402,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	82 INVOCACION DE UNA PRIORIDAD EN NU	100,000.00
		TOTAL :	\$ 100,000.00

SON: CIENTO MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

Carrera 13 No. 27-00 Pisos 5, 7 y 10
Conmutador 382 0840
Fax 350 5220
E-mail: info@sic.gov.co
www.sic.gov.co
Bogotá, D.C., Colombia

54

LAW OFFICES
PEDRO CASTILLO PINEDA & ASOCIATES
P.O. BOX 48362
Bogotá, Colombia / South America

IMPORTANT NOTE
The lodging of this GENERAL POWER with the Patent Office obviates the necessity of presenting special powers with each individual trade mark application.

FOR PATENTS AND TRADE MARKS IN
COLOMBIA

	Poder General	General Power of Attorney
1 Applicant's name	(1) HUGHES ELECTRONICS CORPORATION	(1) HUGHES ELECTRONICS CORPORATION
2 Applicant's address	200 N. Sepulveda Blvd. domiciliado en (2) El Segundo, California Estados Unidos de América	200 North Sepulveda Boulevard, domiciled in (2) El Segundo, California 90245, United States of America
3 Leave blank	nombra al, Dr. JERONIMO CASTILLO BONILLA y/o Dra. XIMENA BONILLA PEREIRA , y/o Dr. ALVARO CASTILLO GRAU , Calle 93A N° 14-17 Oficina 311 en Bogotá, Colombia, como sus representantes con poder especial amplio y suficiente, para recabar de las oficinas y autoridades Colombianas, administrativas, judiciales o de policía, en primera o segunda instancia, la obtención de Patentes de Invención, Registro de Marcas, de Modelos y de Dibujos Industriales, de Nombres Comerciales y Enseñas, Lemas Comerciales y Denominación de Origen, lo mismo que trasposos, extensiones, renovaciones, cambios de nombre, registro de licencias de explotación y registro de licencias de uso referentes a tales actuaciones, cancelación de Registros de marca, a cuyo efecto les faculta para dar ante dichas autoridades todos los pasos necesarios al objeto indicado, elevar solicitudes, formular descripciones, enmiendas, protestas, declaraciones, apelaciones y reclamos, solicitar la aplicación de medidas cautelares; solicitar la nulidad de Patentes de Invención, modelos de utilidad, diseños Industriales, así como la de registros de marcas ante la autoridad nacional competente; aceptar en nuestro nombre y representación la Cesión de derechos de invención y de patente de invención que se nos haga por cualquier persona, abonar todos los impuestos, cuotas y pagos determinados por la ley, recibir todos los documentos y valores dando el descargo respectivo, llenar cualesquiera otros requisitos, desistir y tomar en fin todas las medidas que creyeren conducentes al resguardo de nuestros intereses y en caso de presentarse oposiciones para que intervengan como demandantes o como demandados, con todas las demás facultades necesarias. Este poder comprende además las facultades de recibir, desistir, transigir, comprometer, sustituir, revocar sustituciones, recibir notificaciones y nombrar apoderados judiciales o extrajudiciales. Los mandatarios podrán ejercer el poder alternativa o indistintamente.	hereby appoint Dr. JERONIMO CASTILLO BONILLA and/or Dra. XIMENA BONILLA PEREIRA , and/or Dr. ALVARO CASTILLO GRAU , Calle 93A N° 14-17 Office 311 en Bogotá, Colombia, as our representatives with special, ample and sufficient power to obtain from the offices and Colombian authorities, administrative, judicial and police, in first or in second instance, Privileged Patents of invention, Registration of Trade Marks, of Models and Industrial Drawings, of Commercial Names and ensigns, Commercial Slogans and Origin Denominations as well as assignments, extensions, renewals, changes of name, registration of license of exploitation and of license of use referred to said actions, Cancellation Actions against trademark Registrations, who are empowered to take before said authorities all of the necessary steps for the purposes indicated, to file applications, to formulate descriptions, corrections, protests, declarations, appeals and claims, apply for precautionary measures; apply for the nullity of Patent Inventions, Utility Models, Industrial Designs, as well as for Trademark Registrations before the competent national authority; to accept on our behalf and representation the assignment of rights of inventions and titles of invention that may be done to us by any person, to pay all taxes, quotas and payments prescribed by law, to receive all the documents and proceeds giving the respective acquittance or receipt; to fulfill any other requisites to desist and take in fact any other measures that may be deemed conducive to the safeguard of our interests, and in case oppositions are presented to intervene as complainant and defendant, with all necessary legal faculties. This power of attorney includes the faculties to receive, desist, compromise, transact substitute it in all or in part, to revoke substitutions, to receive notifications and to appoint extra-judicial or judicial attorneys. The attorneys can exercise the power alternatively or indistinctly.
4 Date	Dado y firmado en (4) El Segundo, California, Junio 20, 2001	Given and signed in (4) El Segundo, California, this 20th day of June 2001.
5 Applicant's signature	5)	HUGHES ELECTRONICS CORPORATION  MICHAEL W. SALES Assistant Secretary

DECLARACION NOTARIAL

(Individual)

A los días del mes de
19.... comparecí..... personalmente ante
mí, Notario Público

.....
a quien(es) doy fé de conocer y me consta
que es (son) la(s) persona(s) descrita(s)
y firmante(s) del documento que precede,
declarando ante mí que otorga(n) el mis-
mo para los fines y propósitos que en él
se expresan.

El Notario Público,

NOTARIAL CERTIFICATE

(Individual)

On this day of
19.... personally appeared before me, a
Notary Public

.....
to me known, and known to me to be the
person(s) described in and who executed
the foregoing document, and he (they)
duly acknowledged to me that he (they)
executed same for the uses and purposes
therein expressed.

.....
Notary Public.

(Sociedades)

El infrascrito Notario Certifica: que la fir-
ma que antecede y dice
MICHAEL W. SALES

.....
es auténtica; que el signatario desempeña
actualmente el cargo de
Secretario Asistente
de **HUGHES ELECTRONICS CORPORATION**

.....
que tiene facultad para otorgar este poder;
y que dicha compañía está domiciliada en
El Segundo, California, Estados
Unidos de America

.....
y actualmente existe y está organizada de
acuerdo a las leyes del **Estado de**
Delaware

.....
Todos los hechos anteriores le constan por
haber examinado los documentos respecti-
vos y de todo ello da fé.

.....
Dado y firmado en **El Segundo,**
California, Junio 20, 2001

El Notario Público,

(Con legalización Consular)

(Corporations)

The undersigned Notary Public certifies:
that the preceding signature reading
MICHAEL W. SALES

.....
is authentic; that the signer at present fills
the post of **Assistant Secretary**

.....
of **HUGHES ELECTRONICS CORPORATION**

.....
and that he is empowered to grant this
power; and that said company is domici-
led in **El Segundo, California,**
United States of America

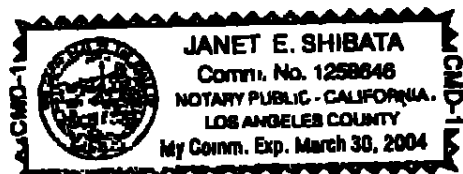
.....
and actually exists and is organized in ac-
cordance with the laws of the State...
of **Delaware, U.S.A.**

.....
All the foregoing facts are known to the
Notary due to his having examined the
respective documents to which he, the No-
tary attests.

.....
Granted and signed in **El Segundo, California,**
this **20th** day of **June 2001.**

.....
Notary Public.

(With Consular legalization)



52
State of California

**SECRETARY OF STATE
APOSTILLE**

(Convention de La Haye du 5 octobre 1961)

1. Country: *United States of America*
This public document
2. *has been signed by JANET E. SHIBATA*
3. *acting in the capacity of Notary Public, State of California*
4. *bears the seal/stamp of JANET E. SHIBATA, Notary Public,
State of California*

CERTIFIED

5. *At Sacramento, California*
6. *the 25th day of June 2001*
7. *by Deputy Secretary of State, State of California*
8. *No. 100398*
9. *Seal/Stamp:*



10. Signature

Bill Jones
BILL JONES
Secretary of State

BY *C. Van Hecke*



56 54

ALIF RNIA ALL-PURPOSE A KN WLEDGMENT

No. 9907

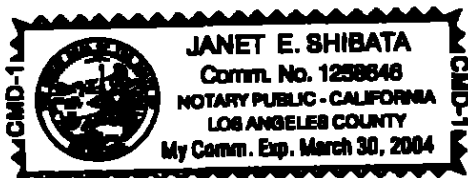
State of CALIFORNIA

County of LOS ANGELES

On June 20, 2001 before me, JANET E. SHIBATA, Notary Public
DATE NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared MICHAEL W. SALES
NAME(S) OF SIGNER(S)

☒ personally known to me - OR - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

Janet E. Shibata
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

- ☐ INDIVIDUAL
☒ CORPORATE OFFICER

Assistant Secretary

TITLE(S)

- ☐ PARTNER(S) ☐ LIMITED
☐ GENERAL

- ☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)

Hughes Electronics Corporation

DESCRIPTION OF ATTACHED DOCUMENT

TITLE OR TYPE OF DOCUMENT

NUMBER OF PAGES

June 20, 2001

DATE OF DOCUMENT

SIGNER(S) OTHER THAN NAMED ABOVE

57

ESTADO DE CALIFORNIA
SECRETARIA DE ESTADO
APOSTILLA
(Convención de La Haya de Octubre 5, 1961)

1. País: Estados Unidos de América
Este Documento Público
2. Ha sido firmado por JANET E. SHIBATA
3. Actuando en capacidad de Notario Público, Estado de California
4. Coloca el sello/estampilla de JANET E. SHIBATA, Notario Público
Estado de California

CERTIFICA

5. en Sacramento, California
6. el 25 de Junio de 2001
7. por el secretario diputado del Estado, Estado de California
8. No. 100398
9. Sello/Estampilla

10. Firma
(Firmado Bill Jones)
Bill Jones
Secretario de Estado
Por: Firma ilegible

58

ACEPTACION PARA TODOS LOS PROPOSITOS – CALIFORNIA

Estado de CALIFORNIA

Condado de LOS ANGELES

En Junio 20, 2001, compareció ante mí JANET E. SHIBATA, Notario Público

Personalmente, MICHAEL W. SALES

Personalmente conocido por mí, y probando mediante evidencia satisfactoria ser la persona cuyo nombre se suscribe en el instrumento y aceptó ante mí que ejecutó el mismo mediante su capacidad autorizada, y que la firma en el documento es cierta y válida para ejecutar el mismo.

Doy fe mediante mi firma y sello oficial

Janet E. Shibata

Firma del Notario

OPCIONAL

A pesar de que los datos abajo no son requeridos por ley, estos pueden ser valiosos para personas que necesiten el documento y puede prevenir anexos fraudulentos en esta forma.

CAPACIDAD REIVINDICADA POR EL FIRMANTE

Oficial Corporativo

Secretario Asistente

Junio 20, 2001.

EL SIGNATARIO ESTA REPRESENTANDO A

HUGHES ELECTRONICS CORPORATION

59

**ESTADO DE CALIFORNIA
SECRETARIA DE ESTADO
APOSTILLA
(Convención de La Haya de Octubre 5, 1981)**

1. País: Estados Unidos de América
Este documento público
2. Ha sido firmado por Janet E. Shibata
3. Actuando en capacidad de Notario Público, Estado de California
4. Coloca su sello/estampilla como Janet E. Shibata, Notario Público, Estado de California

CERTIFICADO

5. en Sacramento, California
6. el 8 de Agosto 2001
7. por el Secretario de Estado diputado, Estado de California
8. No. 104042
9. Sello/Estampilla

10. Firma
Bill Jones
Secretario de Estado
Por: Firma ilegible

Poder con Cesión

El abajo firmante,

60

STEVE M. SOLOFF, domiciliado en 5715 North West 47 Lane, Tamarac, Florida, Estados Unidos de América y **ANGELA M. TRUJILLO**, domiciliada en 650 Spinnaker Road, Weston, Florida, Estados Unidos de América, por el presente nombran a Jerónimo Castillo Bonilla y/o Ximena Bonilla Pereira y/o Alvaro Castillo Grau, domiciliados en Calle 93ª No. 14-17 en Bogotá, Colombia, conjunta, alternativa o indistintamente como abogados con Poder especial y suficiente para solicitar y obtener de las oficinas y autoridades competentes la invención de patente colombiana para LOW SPEED DATA PORT FOR TRANSACTIONS AND INFORMATION (PUERTO DE DATOS DE BAJA VELOCIDAD PARA TRANSACCIONES DE DATOS E INFORMACION Y METODO PARA ENTREGAR LA INFORMACIÓN A UN DISPOSITIVO DE VISUALIZACION)

Para ser expedida a nombre de **HUGHES ELECTRONICS CORPORATION** domiciliada en 200 North Sepulveda Boulevard, El Segundo, California, Estados Unidos de América, a quien el traspaso le ha sido realizado en todos los derechos y en el título de la mencionada patente para el territorio de Colombia, sin restricción alguna.

El cedente también firma este documento en prenda de aceptación de dicho traspaso y autoriza a los mencionados abogados para que tomen todas las medidas necesarias ante las mencionadas oficinas y autoridades para obtener el propósito arriba descrito.

Firmas

STEVE M. SOLOFF

ANGELA M. TRUJILLO

Estado de Florida

Condado de Broward

En Agosto 1, 2001, ante mí, **MARIA LUISA FALLA**, Notario Público, comparecieron **STEVE M. SOLOFF** y **ANGELA M. TRUJILLO**, conocidos personalmente por mí y quienes probaron ser las personas cuyos nombres aparecen en este instrumento y quienes admiten que ejecutaron el mismo en su capacidad autorizada, y que mediante sus firmas en el documento, las personas, o la entidad por la cual actuaron ejecutaron el instrumento.

MARIA LUISA FALLA

Coloco mi firma y sello oficial
Notario Público

CESIONARIO

HUGHES ELECTRONICS CORPORATION

MICHAEL W. SALES

Secretario Asistente

61 

Estado de California
Condado de Los Angeles

En Agosto 6, 2001, ante mi, Janet E. Shibata, Notario Público, compareció Michael W. Sales, conocido personalmente por mi y por ser la persona quien suscribe el presente Instrumento y quien aceptó haber ejecutado el mismo en su capacidad autorizada, y que por su firma en el instrumento la persona, o entidad para la cual actuó, ejecutó el instrumento.

JANET E. SHIBATA Coloco mi firma y sello oficial
Notario Público

62
State of California

**SECRETARY OF STATE
APOSTILLE**

(Convention de La Haye du 5 octobre 1961)

1. **Country: United States of America**
This public document
2. ***has been signed by Janet E. Shibata***
3. ***acting in the capacity of Notary Public, State of California***
4. ***bears the seal/stamp of Janet E. Shibata, Notary Public,
State of California***

CERTIFIED

5. ***At Sacramento, California***
6. ***the 8th day of August 2001***
7. ***by Deputy Secretary of State, State of California***
8. ***No. 104042***
9. ***Seal/Stamp:***



10. **Signature**

Bill Jones

**BILL JONES
Secretary of State**

BY *William C. ...*



Power with Assignment

Insert here
Full name
And address
Assignor

The undersigned
STEVE M. SOLOFF, domiciled at 5715 North West 47 Lane, Tamarac,
Florida, United States of America and ANGELA M. TRUJILLO, domiciled
at 650 Spinnaker Road, Weston, Florida, United States of America
hereby appoints Jerónimo Castillo Bonilla and/or Ximena Bonilla Pereira
and/or Alvaro Castillo Grau domiciled at Calle 93A N° 14-17 of Bogotá,
Colombia, conjointly, alternatively or indistinctly as attorneys with special
and sufficient powers to apply and obtain from the competent offices and
authorities of Colombia Patent of Invention
LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND
INFORMATION

Name and
Address of
Assignee

to be issued in the name of HUGHES ELECTRONICS CORPORATION,
domiciled at 200 North Sepulveda Boulevard, El Segundo, California, United
States of America to whom assignment has been made of all right and title of
said patent for the territory of Colombia without any restriction.

The assignor also signs these presents in token of acceptance of the said
assignment and hereby authorizes the said attorneys to take all necessary
steps before the said offices and authorities for the purpose above stated.

Signatures

STEVE M. SOLOFF
STEVE M. SOLOFF

ANGELA M. TRUJILLO
ANGELA M. TRUJILLO

State of Florida
County of BROWARD

On AUGUST 9, 2001 before me, MARIA LUISA FALLA Notary Public, personally appeared STEVE M.
SOLOFF and ANGELA M. TRUJILLO personally known to me -or- proved to me to be the persons whose names
are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized
capacity, and that by their signature on the instrument the persons, or the entity upon behalf of which the persons
acted, executed the instrument.



WITNESS my hand and official seal.

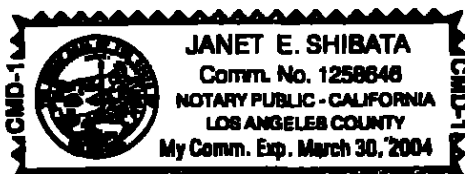
Notary Public

ASSIGNEE
HUGHES ELECTRONICS CORPORATION

MICHAEL W. SALES
Assistant Secretary

State of California
County of Los Angeles

On August 6, 2001 before me, Janet E. Shibata, Notary Public, personally appeared Michael W. Sales,
personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to
me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or
the entity upon behalf of which the person acted, executed the instrument.



WITNESS my hand and official seal.

Notary Public

64
~~64~~

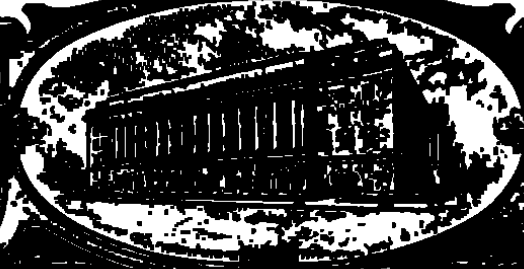
LOS ESTADOS UNIDOS DE AMERICA
A TODOS A QUIENES ESTE DOCUMENTO PUEDA IMPORTAR
DEPARTAMENTO DE COMERCIO DE ESTADOS UNIDOS
Oficina de Patentes y Marcas de Los Estados Unidos

LO SIGUIENTE ES PARA CERTIFICAR QUE LO QUE AQUÍ SE ANEXA ES UNA COPIA VERDADERA DE LOS ARCHIVOS DE LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS, SOBRE AQUELLOS DOCUMENTOS ABAJO IDENTIFICADOS COMO UNA SOLICITUD DE PATENTE, Y QUE LOS MISMOS REUNEN LOS REQUISITOS PARA QUE SE LES OTORQUE UNA FECHA DE PRESENTACION BAJO EL 35 USC 111.

NUMERO DE SOLICITUD: 60/200.473
FECHA DE PRESENTACION: Abril 28, 2000

Por la Autoridad del
COMISIONADO PARA PATENTES Y MARCAS
Edo. N. WOODSON
Oficial Certificador

PA 308370



THE UNITED STATES OF AMERICA

~~TO ALL TO WHOM THESE PRESENTS SHALL COME:~~

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

April 03, 2001

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 60/200,473

FILING DATE: April 28, 2000



By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

N. WOODSON
Certifying Officer

05-01-00

A:PROV

66

Please type a plus sign (+) inside the box → ☒PTO/BB/16 (2-98)
Approved for use through 01/31/2001. OMB 0681-0037
Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.63 (c).

INVENTOR(S)		
Given Name (last and middle (if any))	Family Name or Surname	Residence (City and either State or Foreign Country)
Angela M.	Trujillo	Ft. Lauderdale, FL
☐ Additional inventors are being named on the _____ separately numbered sheets attached hereto		
TITLE OF THE INVENTION (250 characters max)		
LOW SPEED DATA PORT FOR DATA TRANSACTIONS		
Direct all correspondence to: CORRESPONDENCE ADDRESS		
☒ Customer Number	020991	Place Customer Number Bar Code Label here
OR	Type Customer Number here	
☒ Firm or Individual Name	Hughes Electronics Corporation Corporate Patents & Licensing	
Address	P.O. Box 956, Bldg. 001, M.S. A109	
Address	200 North Sepulveda Boulevard	
City	El Segundo	State CA ZIP 90245-0956
Country	USA	Telephone (310) 662-9919 Fax (310) 322-0729
ENCLOSED APPLICATION PARTS (check all that apply)		
☒ Specification Number of Pages	8	☐ Small Entity Statement
☒ Drawing(s) Number of Sheets	9	☒ Other (specify) Certificate of Filing
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)		
☐ A check or money order is enclosed to cover the filing fees		FILING FEE AMOUNT (\$)
☒ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 50-0383		\$150.00
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.		
☒ No.		
☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____		

Respectfully submitted,

Date 04,28,00

SIGNATURE

TYPED or PRINTED NAME

BRADLEY E. LORTZ

TELEPHONE (310) 662-9920

REGISTRATION NO. 45,472

(If appropriate)

Docket Number:

PD-200154

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

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PROVISI NAL PATENT APPLICATION
PD-200154

60200473-042800

**LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND INFORMATION
SERVICES**

Angela M. Trujillo

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**LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND INFORMATION
SERVICES**

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention generally relates to methods and systems for communicating data and more particularly to methods and systems for communicating data in interactive television applications.

Description of the Related Art

Use of the slow data port in the past was limited to debugging software downloaded to a communications laboratory or to send commands to peripherals.

In conventional delivery of "web" information an Internet Service Provider (ISP) is required, as well as a communications hardware, such as a modem. In areas where a conventional ISP is not available, web content and web-like information is generally unavailable.

There is a need for a system and method for providing data transactions, such as web content and information services to users integrated with conventional television program viewing, such as provided by a Direct Satellite Service (DSS).

It is therefore one object of the present invention to provide data transactions and web information and services to a user integrated with conventional television program viewing, such as provided by a DSS, and without requiring additional communications hardware.

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In addition, present web browsers do not have features which allow advanced information delivery management functions to manage and automate data delivery from a dynamic

There is also a need to automate delivery of such information and provide it to users who may not have access to a conventional ISP.

It is another objection of the present invention to automate delivery of such data transactions and web information and services and to users who may not have access to a conventional ISP.

SUMMARY OF THE INVENTION

The present invention ties a channel in a television viewing system such as a DSS, with data delivery such that the channel can transmit data related to a selected program, e.g. a program outline or related information. Delivery of the information requires no extra channel allocation because the data is attached to existing channels. The additional data and information changes as the user changes channels.

The data and information is delivered in HTML format so that it may be viewed with any web browser. In application to a DSS system, the information is transferred to a viewing device, such as a computer system or personal data assistant (PDA) through a cable connection or other simple link, such as a standard RS-232 serial connection.

Delivery and processing of the received information is managed through the use of a software application in the viewing device. The software tool automatically downloads the information and content and saves it.

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BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagram of the data transactions and information services system architecture.

FIG. 2 is a diagram data port connection to the viewing device.

FIG. 3 is a diagram of the installed specialized client software.

FIG. 4 is a diagram of the upstream subsystem.

FIG. 5 is a diagram the implemented preferred upstream server hardware.

FIG. 6 is a diagram uplink carousel builder.

FIG. 7 is a diagram operating uplink carousel builder.

FIG. 8 is a diagram of the uplink carousel manager.

FIG. 9 is a diagram of carousel manager framing.

DETAILED DESCRIPTION OF THE INVENTION

One embodiment of the present invention is a one way broadcast system offering broadcaster selected web-like content to a user's PC through a low-speed serial port. Integrated Receivers/Decoders (IRDs) for DSS currently include a low-speed serial port. Figure 1 is a diagram of the data transactions and information services system architecture.

The Web content is acquired and processed at the upstream subsystem that includes a DSC Server. The Web content is then transmitted, preferably over a terrestrial T1 link, to the broadcast center or broadcast data subsystem, where the content is integrated into the broadcast system and uplinked over the satellite. The user then receives the data stream via the existing dish antenna into the IRD. The IRD is connected to the user's viewing device, such as a PC or PDA, through a serial port. See figure 2. The user must tune the IRD to the data channel and leave both the IRD and viewing device on for a specified period (approximately two (2) hours is estimated) to receive a complete content update. Data then flows through the IRD

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directly to the storage element of the viewing device, a hard drive in the case of a PC. Specialized user software is installed on the subscriber's viewing device to enable the reception, processing, and viewing of the data. See figure 3.

The Agent is installed at the user's viewing device. This application monitors a communication port for data coming from the IRD and parses and stores it. The Agent runs as a standard application. This application will be running in the background, i.e. the program has no user interface. Its only visible presence on the desktop may be an icon on the System Tray, for example.

When the program executes, it will open a connection to a standard serial port connected by a modem cable to the Low Speed Port of the IRD. It will then enable the IRD to send continuous data with the proper command and monitor data sent from the IRD. The Agent will be installed to launch automatically at the system startup.

The Data received from the port will be stored in files on the user's viewing device for later retrieval by the user. The data received from the IRD will be in the form of framed files. Data received will be first stored in a temporary file. The Cyclic Redundancy Code (CRC) of each file is checked to verify that the contents are correct. If the CRC is incorrect, the data will be discarded.

The Agent extracts from the header of each file the path and file name, the date stamp and file type. The path and file name will define a location relative to the "base" directory path on the user's machine. The user's base directory path (where he decided to install software) will be saved at installation time.

The date and time stamp will be used to determine if the file has already been received that day and need not be replaced. If the file does not already exist, then any required post-processing indicated by the file type (e.g., fix up links, file deletion) will be performed and the file will be moved to its proper location.

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To the user, the content appears as a seamless, fast Web site. The user may use his/her own installed browser or a browser may be delivered as part of the installation process. The browser may be pre-configured to open on a predetermined Home Page which can be updated daily. Each time the user starts the browser, a Contents Page may be set to appear, containing headline links to news stories and links to news sections, e.g. international, local, sports, weather, etc.

The serial port data services employs daily downloading and saving of information, such as a newspaper's front page and links to all the stories. A software tool is used to automatically download content from specified sites and intelligently identify the links to second level pages and store them. The tool is used to automate the process of downloading information such as newspapers with specified links. Although an ISP is not required with the present invention, the downloading information indicated by the identified links will be facilitated by alternate Internet access.

Detail of the upstream subsystem is shown in figure 4 and the preferred upstream subsystem hardware is shown in figure 5.

Upstream Server Software is comprised of a number of elements. An editor builds the Service contents on the DSC Editor's Content Server. Mainstream Web Site development software tools may be used. The DSC Application Development and Source Control Server operates a Visual Studio program, at least one compiler, and a database program.

The DSC server software consists of three entities: (A) the Uplink Parser, (B) the Uplink Carousel Builder Agent and (C) the Uplink Carousel Manager Agent. All applications have a graphical user interface (GUI) and run on the DSC Server. The Uplink Parser allows the editor to search and replace the text strings on selected files or subdirectories. The Uplink Carousel Builder Agent is the content editor's interface into the system. It allows him to specify which files should be entered into the carousel, when they should be transmitted and when they should no longer be

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transmitted. It also allows the editor to add properties to the files such as: (a) file type (e.g. html, index, newspaper, picture), (b) Start date; start transmission date, (c) End date; end transmission date, (d) Iterations; frequency of transmission, (e) Priority. With respect to priority, the Carousel Database will be sorted based on the files priority level.

The Editor will use the Uplink Carousel Builder to view files in the Carousel, add files to the Carousel Database, edit/modify the properties of existing files and remove files in the Carousel Database. See figure 6.

When Uplink Carousel Builder Agent is run the editor can VIEW the current properties of files in the carousel. The Remove button will permanently remove the file from the Carousel Database. The close button will terminate the application. See figure 7. Using the Add button the editor can select the file that he wants to view.

The Uplink Carousel Manager agent is responsible for scanning the Carousel Database list of files, framing and transmitting the files. This application continuously queries the Carousel Database to determine which files need to be transmitted based upon the start and end dates. The order of transmission is based on the priority number associated with the file. See figure 8. Using the setup button, the communication setting may be modified. Default communication configuration settings with the DIU unit are COM1, 4800 baud rate, parity non, data bit 8, and stop bit 1. The Base Folder field is the directory where content files are located. The Database connection field has database input parameters. Transmission of the Carousel can be started and stopped at will. Progress of the file transfer is graphically indicated by a progress bar.

The Carousel Manager is responsible for framing the files in the carousel. Framing the files means adding a message header, encoding the file so that binary transmission is possible and adding a Cyclic Redundancy Code to the file so that the

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contents can be verified to be correct by the client software. The message header of each file will have, among other information, the properties for that file. See figure 9.

The system discussed herein is exemplary and the scope of the invention should not be limited to the specific embodiments described herein. It should be understood that the foregoing description relates to certain preferred embodiments of the invention and that numerous variations and alternate embodiments will occur to those skilled in the art which may be made without departing from the spirit and scope of the invention.

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~~scribbles~~

LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND INFORMATION SERVICES

ABSTRACT OF THE DISCLOSURE

A system and method for providing data transactions and web information and services to a user integrated with conventional television program viewing, such as provided by a DSS is taught. The system requires no additional communication hardware, such as a modem. The system also employs the user's existing browser to view information. An application to automate delivery of such data transactions and web information and services and to users who may not have access to a conventional ISP is also taught.

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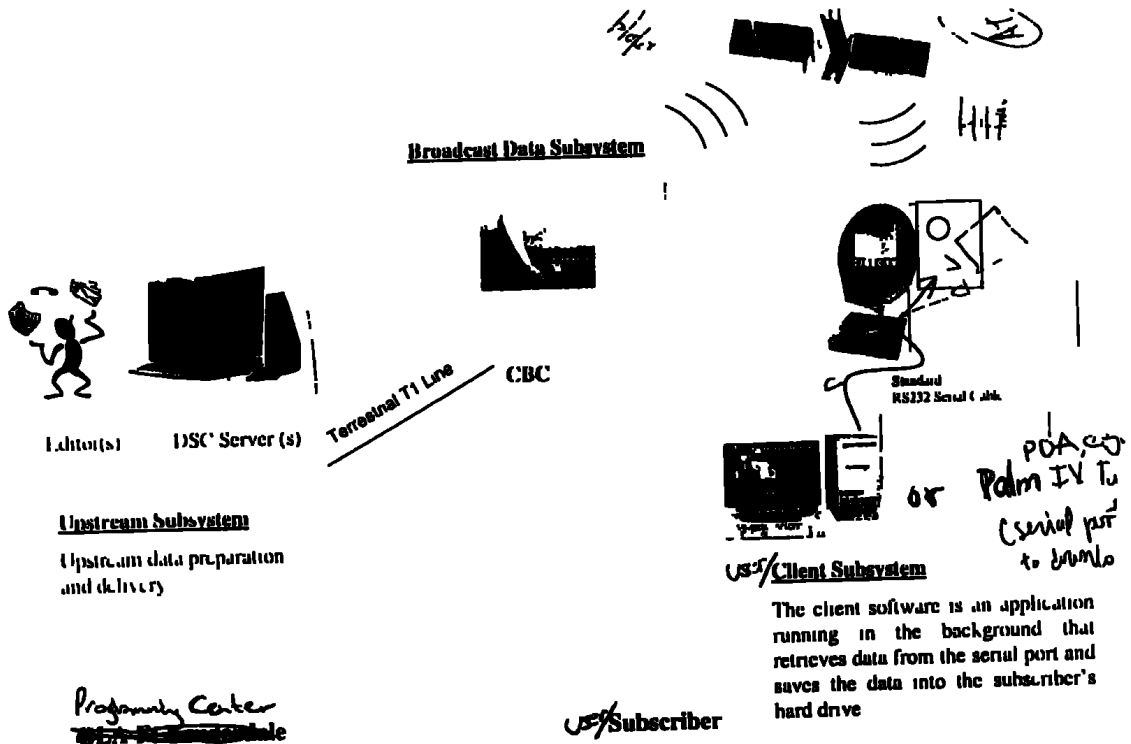


FIG 1

[Handwritten scribbles]

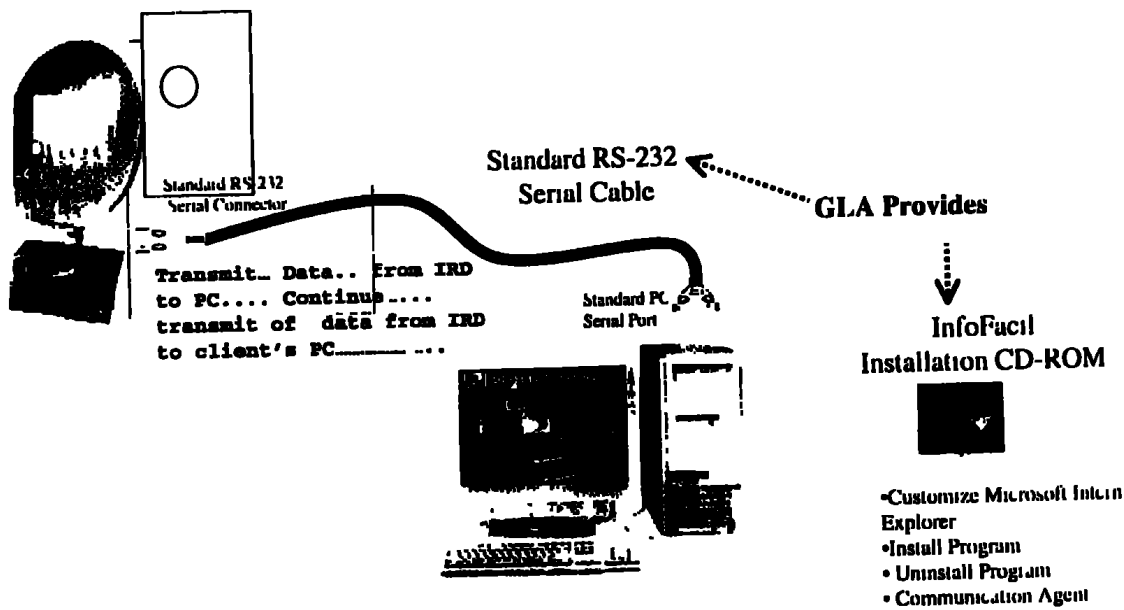


FIG 2

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Installation will create a Program Folder, Desktop Icon, and a System Tray Icon.



FIG 3

[Handwritten signature]

Upstream Subsystem

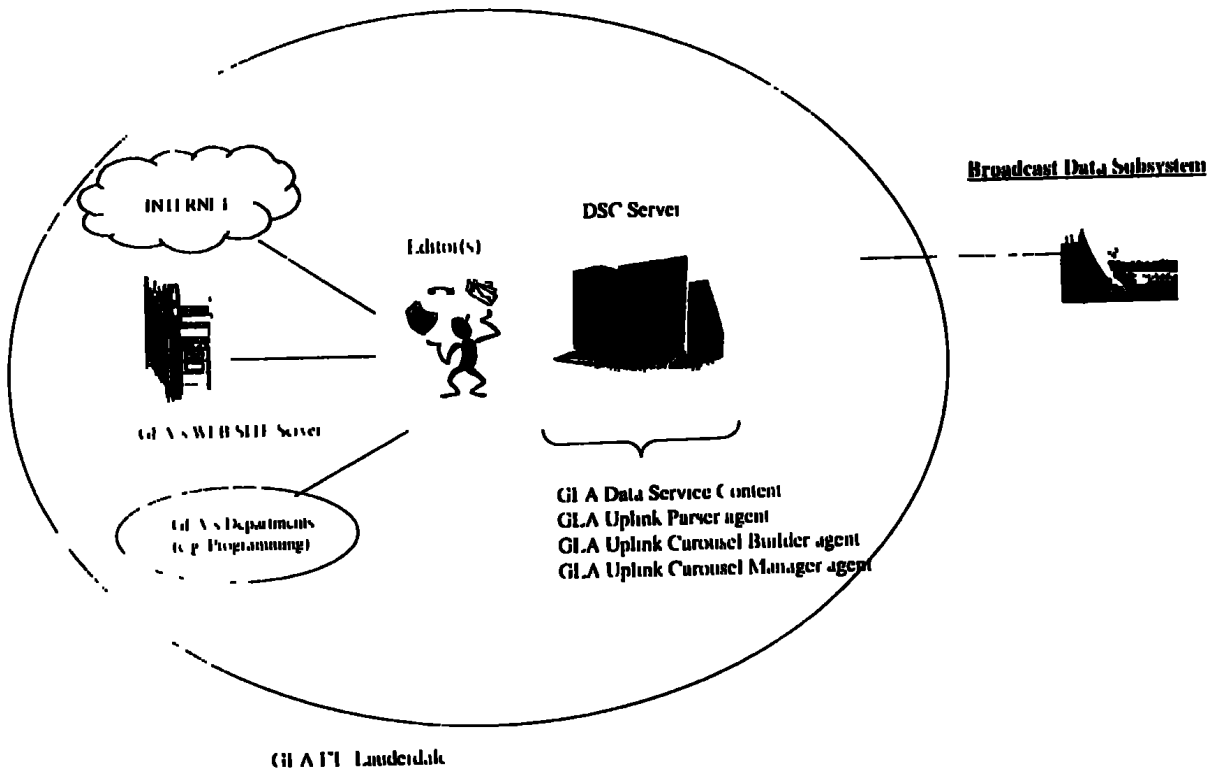


FIG. 4

[Handwritten signature]

DSC Server

N1 machine 400 MHz # NIC

DSC Editor's Content Server

N1 machine 150 MHz # NIC 21" monitor This machine must have T1 connection to the Internet

DSC Application Development and Source Control Server

N1 machine 150 MHz 128 MB RAM # NIC

Scanner

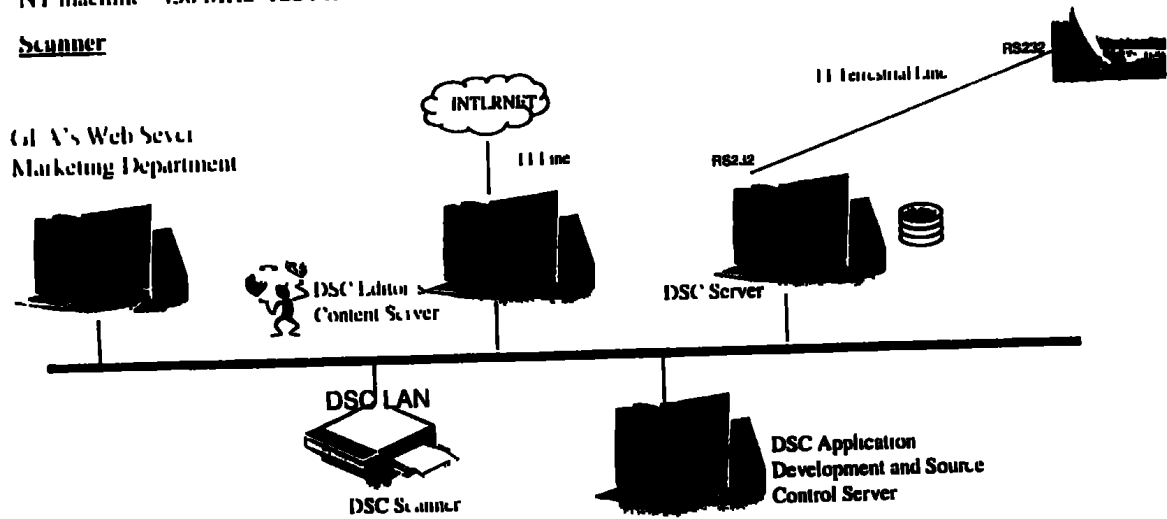


FIG 5

[Handwritten signature]

When Uplink Carousel Builder Agent is run the following screen will be displayed. On this screen, the editor can VIEW the current properties of files in the carousel. The Remove button will permanently remove the file from the Carousel Database. The close button will terminate the application.

Uplink Carousel Builder Agent									
File #	File Name	File Type	File Size	File Date	File Time	File Path	File Status	File Action	File Comment
167									
168	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
169	C:\DataServ\DIRECTV\English\news_s\news1\boletmba.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
170	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
171	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
172	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
173	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
174	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
175	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
176	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
177	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
178	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
179	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
180	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				
181	C:\DataServ\DIRECTV\English\news_s\news1\bolet.gi	picture	1	12/22/98	12/31/98 11:53:51 AM				

FIG 7

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C) GIL A Uplink Carousel Manager agent

This application is responsible for scanning the Carousel Database list of files, training and transmitting the files. This application will continuously query the Carousel Database to determine which files need to be transmitted base on the start and end dates. The order of transmission is based on the priority number associated with the file.

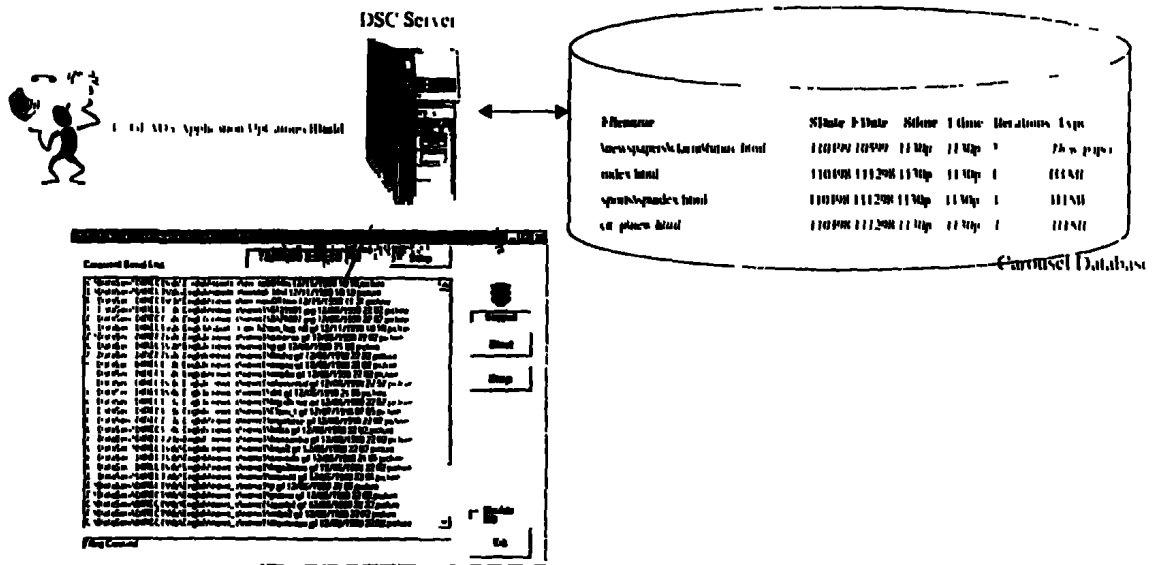
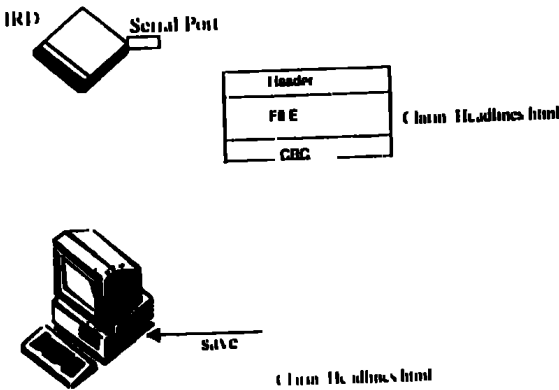


FIG 8.

[Handwritten signature/initials]

The Carousel Manager is responsible for framing the files in the carousel. Framing the files means adding a message header, encoding the file so that binary transmission is possible and adding a Cyclic Redundancy Code to the file so that the contents can be verified to be correct by the client software. The message header of each file will have, among other information, the properties for that file.



note:
The Uplink Carousel Manager agent for release v 1.0 as describe before will only add a message header, encode the file and add a Cyclic Redundancy Code to the file. If the transmission medium is not as reliable as assumed and data lost are frequent the Uplink Carousel Manager agent for release v 1.1 will break files into 256 bytes packets prior to transmission. Software at the client side will also be upgraded to handle packets.

FIG 9

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INVENTOR(S)					
Given Name (first and middle (if any))		Family Name or Surname		Residence (City and other State or Foreign Country)	
Angela M.		Trujillo		Ft. Lauderdale, FL	
☐ Additional inventors are being named on the _____ separately numbered sheets attached hereto					
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Address		200 North Sapulveda Boulevard			
City		El Segundo	State	CA	ZIP 90245-0956
Country		USA	Telephone	(310) 662-9920	Fax (310) 322-0729
ENCLOSED APPLICATION PARTS (check all that apply)					
☒ Specification Number of Pages		61		☐ Small Entity Statement	
☐ Drawing(s) Number of Sheets				☐ Other (specify) Certificate of Mailing	
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				\$150.00	
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
☒ No.					
☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

SIGNATURE

Date 5/1/00

TYPED or PRINTED NAME: BRADLEY A. LORTZ

REGISTRATION NO. 45,472

(If appropriate)

TELEPHONE (310) 662-9920

Docket Number:

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In re Application of:
Angela P. Trujillo

Date: May 1, 2000

Serial No.: (FILED HEREWITH)
Filed: (FILED HEREWITH)

Group Art Unit: Unknown

Examiner: Unknown

For: LOW SPEED DATA PORT FOR
DATA TRANSACTIONS AND
INFORMATION SERVICES

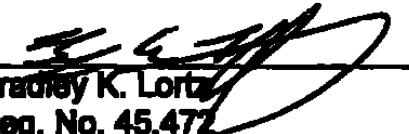
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Respectfully submitted,

By: 
Bradley K. Lortz
Reg. No. 45,472

HUGHES ELECTRONICS
Bldg. 001, M.S. A109
P.O. Box 958
200 N. Sepulveda Boulevard
El Segundo, CA 90245-0958
(310) 682-9920



**LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND INFORMATION
SERVICES**

Angela M. Trujillo

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**LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND INFORMATION
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It is therefore one object of the present invention to provide data transactions and web information and services to a user integrated with conventional television program viewing, such as provided by a DSS, and without requiring additional communications hardware.

In addition, present web browsers do not have features which allow advanced information delivery management functions to manage and automate data delivery from a dynamic

There is also a need to automate delivery of such information and provide it to users who may not have access to a conventional ISP.

It is another objection of the present invention to automate delivery of such data transactions and web information and services and to users who may not have access to a conventional ISP.

SUMMARY OF THE INVENTION

The present invention ties a channel in a television viewing system such as a DSS, with data delivery such that the channel can transmit data related to a selected program, e.g. a program outline or related information. Delivery of the information requires no extra channel allocation because the data is attached to existing channels. The additional data and information changes as the user changes channels.

The data and information is delivered in HTML format so that it may be viewed with any web browser. In application to a DSS system, the information is transferred to a viewing device, such as a computer system or personal data assistant (PDA) through a cable connection or other simple link, such as a standard RS-232 serial connection.

Delivery and processing of the received information is managed through the use of a software application in the viewing device. The software tool automatically downloads the information and content and saves it.

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DETAILED DESCRIPTION OF THE INVENTION

See Attached Sheets.

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B. SUMMARY OF THE INVENTION

A. GIVE A BRIEF DESCRIPTION OF YOUR INVENTION PARTICULARLY POINTING OUT WHAT IS BELIEVED TO BE NOVEL (THE "HEART" OF WHAT IS NEW)

*No need for extra hardware out of server.
Use of the low speed port on the STB to send information like
to the subscriber's PC.
The data can be view with any browser because it is in
"html" format.*

B. EXPLAIN THE PURPOSE AND ADVANTAGES OF YOUR INVENTION (WHAT WILL THE INVENTION DO BETTER THAN DONE PREVIOUSLY?)

- 2 servers with software added the upload center to format the data +
data can be call + CD content data*
- Use of the slow data port in the past was limited to debugging,
software download at Glax premises (STB lab) or to send commands to
peripherals.*
- In the past it would require having a separate in ISP
service to get this information. In cases where ISP
services are not available (no phone lines) this information
would be unavailable without the invention.*
- Ties channel with data delivery e.g. channel "class" can send
with video/audio data related to program as class outline or
High speed port on STB requires additional hardware related topics.*
- No need for extra channel allocation. The data is attached
to existing channel. Can be view simultaneously with the TV.*
- The data content changes as the viewer changes channel to watch
the video*

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WITNESS (NAME/TITLE)

WITNESS (NAME/TITLE) SIGNATURE DATE

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116 CXX MAY 1999 (EACH PAGE UPON WHICH INFORMATION IS ENTERED SHOULD BE SIGNED AND WITNESSED)

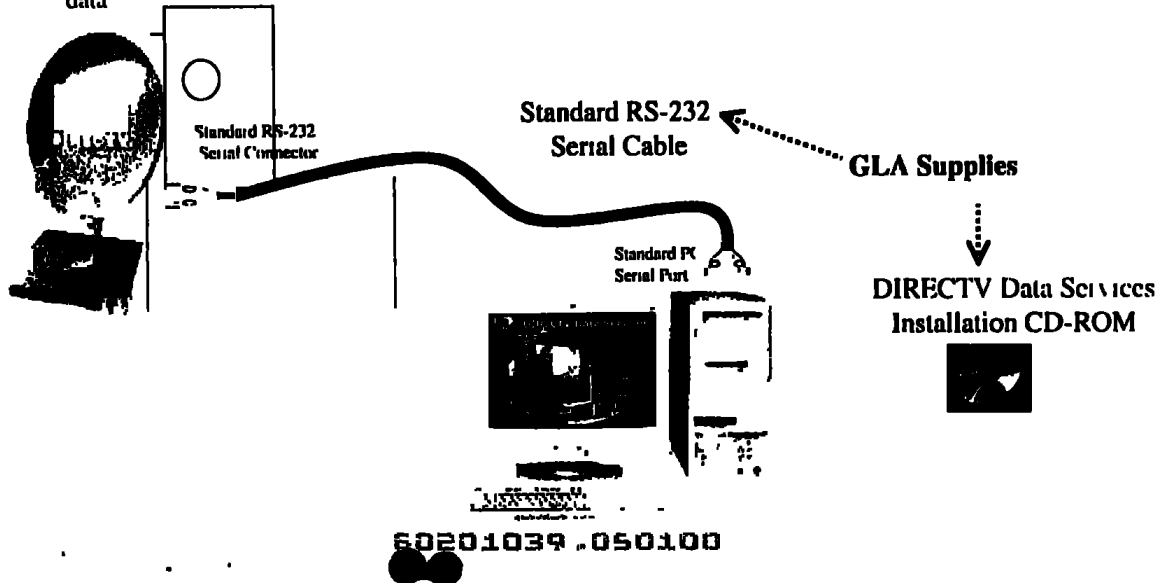


Architecture Overview



GLA-SPDS is a one way broadcast system offering "GLA-chosen Web content" to the subscribers' PC's through the low-speed serial port in all current IRDs.

The subscriber in-country receives the data stream via his/her existing GLA dish antenna into his IRD. The IRD is then connected to the subscriber's PC via serial port. The subscriber must tune the IRD to the data channel (TBD) and leave both the IRD and PC on for at least TBD (estimate time for a complete content update). Data then flows through the IRD directly to the hard drive on the PC. Specialized GLA's client software will be installed on the PC to enable the reception, processing and viewing of the data.





Client Hardware

Serial Port

The customers computer must have an available serial port, able to run reliably at 4 6 kbps

Pre-made 50 feet serial cable. This will be shipped to the customer with his installation package

CD-ROM drive

HTML browser

HTML browsers - Microsoft Internet Explorer 4.0 or Netscape 3.0 (or higher)

Hard Drive requirements

Communication Agent

Browser

Space for GIP agents
service)

1MB

10MB (Win95 machines (1998) come with browser)

7 MB (GLA's Web Site) + (depends on the content of the

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CLIENT Subsystem Software



The client subsystem software will consist of two entities

- A) GLA Install Program
- B) GLA Uninstall Program
- C) GLA's Client Agent

A) GLA's Install

The install program will start automatically when the subscriber inserts the GLA's Data Services CD-ROM into the drive. The install program will setup and installed all required files for GLA data service. The first screen will allow the selection of the installation language. The languages supported are English, Spanish and Portuguese.

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Registry Entries

The installation program will add the following entries to the subscriber's system registry.

[HKEY_LOCAL_MACHINE\SOFTWARE\DIRECTV\DIRECTV Data Services v1.0]
[HKEY_LOCAL_MACHINE\SOFTWARE\DIRECTV\DIRECTV Data Services v1.0\1.00.000]

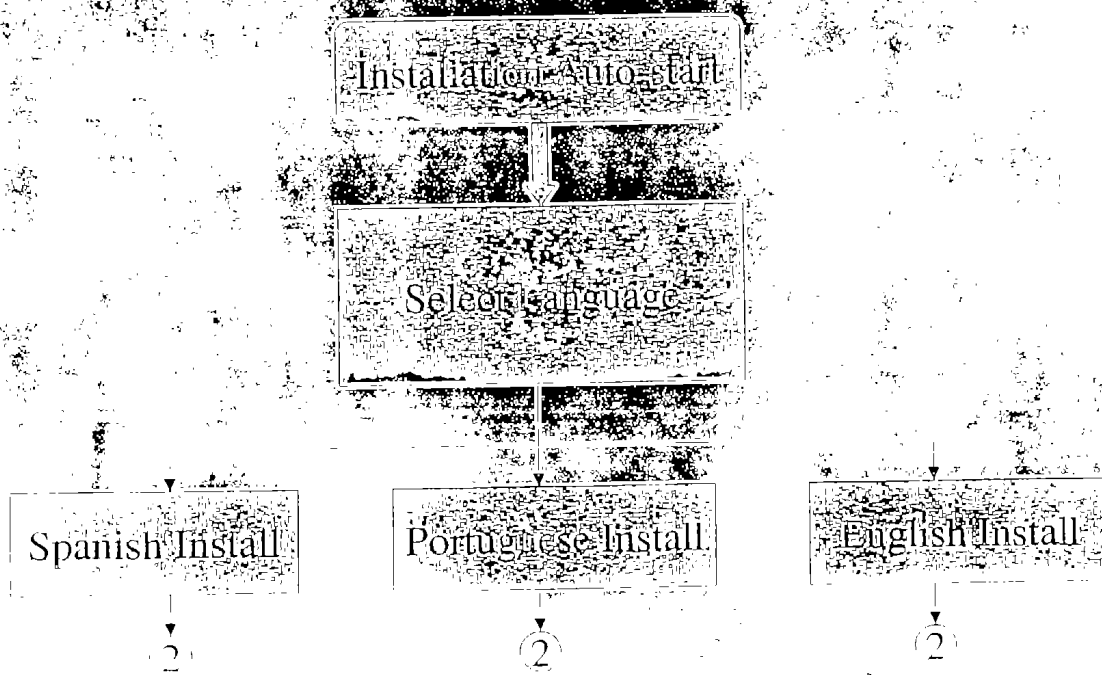
[HKEY_LOCAL_MACHINE\SOFTWARE\Galaxy]
[HKEY_LOCAL_MACHINE\SOFTWARE\Galaxy\Parver]
"Port"="1"
"LocalBase"="C:\Program Files\DIRECTV Data Services v1.0"
"Version"="1.00.000"

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run]
"System Tray"="SysTray.Exe"
"ActiveMovie File Extensions"="ActMovie.exe /Check"
"DIRECTV Data Services"="C:\Program Files\DIRECTV Data Services v1.0\glacheck.exe"

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DirectTV Data Services Installation Flowchart





2
↓
Dialog
Welcome

GLA App
Running?

Msg:
Please uninstall GLA

Exit

Browser
Installed?

No

Msg:
Continue
Setup?

No

Exit

4
↓
Only
Netscape ver
< 3.0?

Yes

Msg:
Continue
Setup?

No

Exit

3
↓





4

Is IE &
Netscape?

Msg:
Recommend IE



100

No

Dialog
Disconnect Port

3

Ports
Available?

No

Msg:
Can't Continue!

Exit

Yes

Dialog
License

Agree
to License
Terms?

No

Exit

5 Yes



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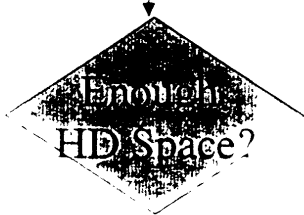


5



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Dialog
Select Directory



No

Yes

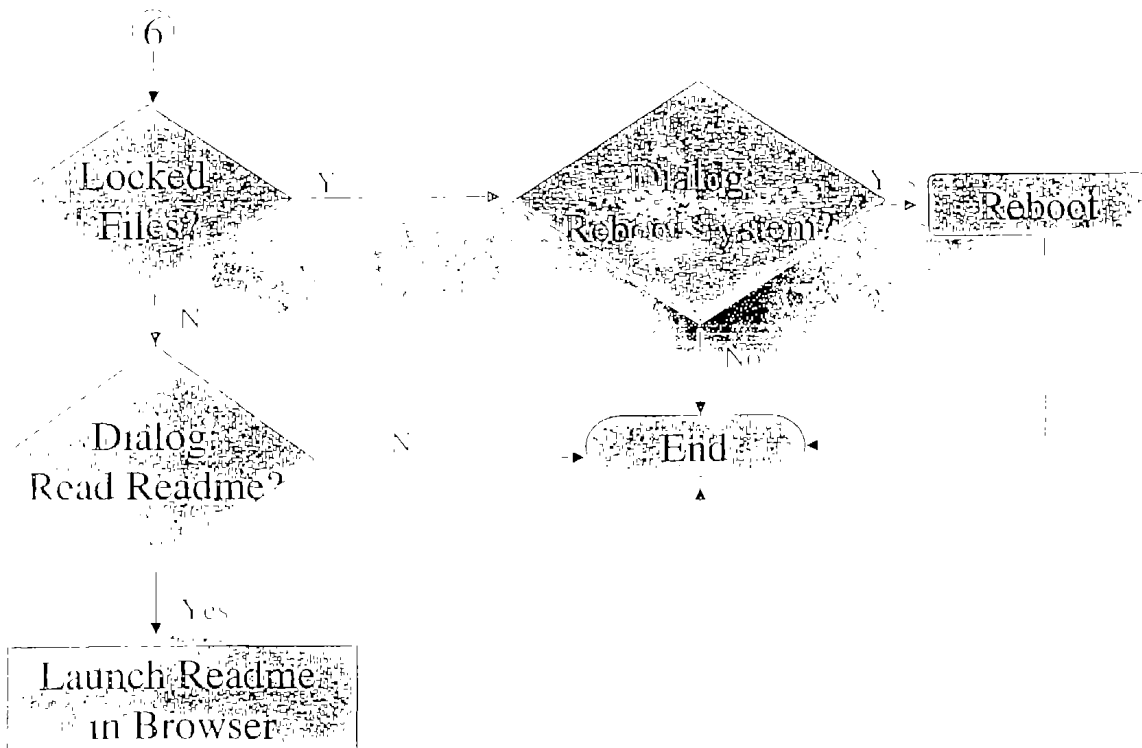
Dialog
Desktop Folder

Dialog
Select Comm Port

Dialog
Confirmation

Copy Files
Create Registry Entries

6





DIRECTV Data Services



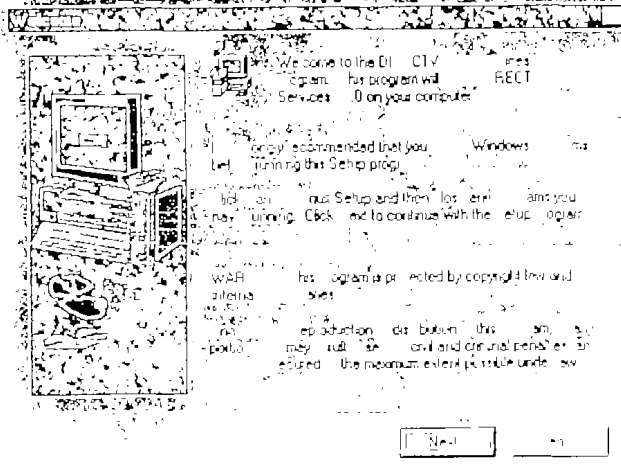
DIRECTV

WELCOME TO DIRECTV DATA SERVICES

BEWELDOS DIRECTV DATA SERVICES

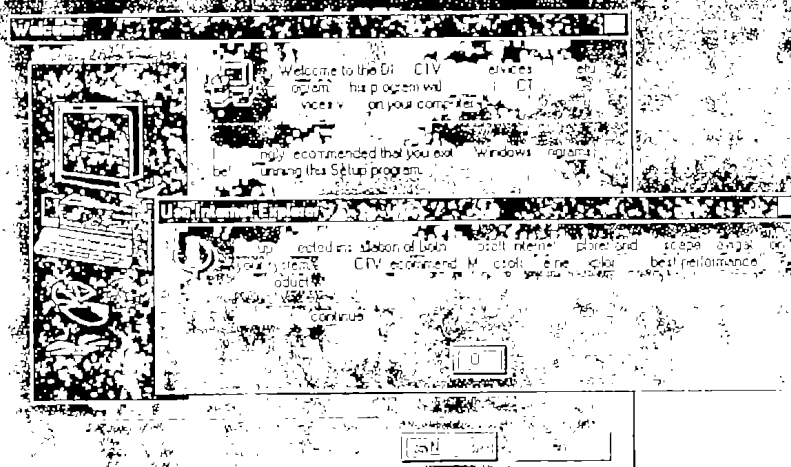
BEWELDOS DIRECTV DATA SERVICES

E.T.



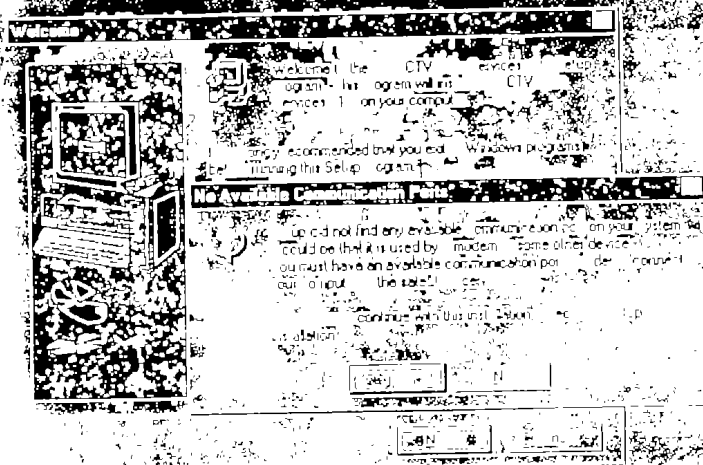


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Choose Destination Location

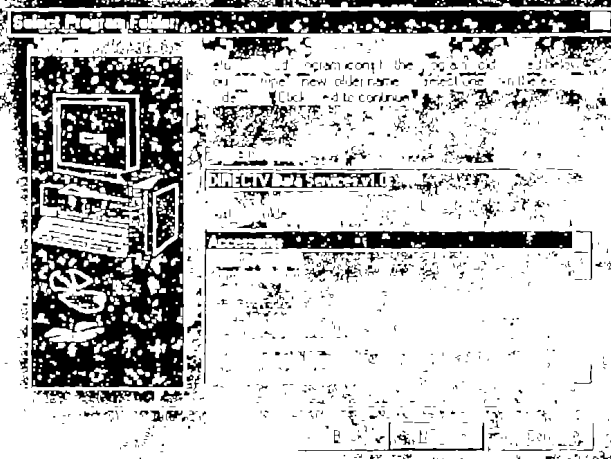
Setup Wizard
 ECTV Data Services
 This wizard will help you set up your ECTV Data Services. It will ask you to choose a destination location for your data. You can choose from a list of locations or you can enter a new location. If you choose a new location, you will need to enter the location name and the location address. You will also need to enter the location phone number and the location fax number. You will also need to enter the location email address. You will also need to enter the location website address. You will also need to enter the location contact name and the location contact title. You will also need to enter the location contact phone number and the location contact fax number. You will also need to enter the location contact email address and the location contact website address. You will also need to enter the location contact name and the location contact title. You will also need to enter the location contact phone number and the location contact fax number. You will also need to enter the location contact email address and the location contact website address.

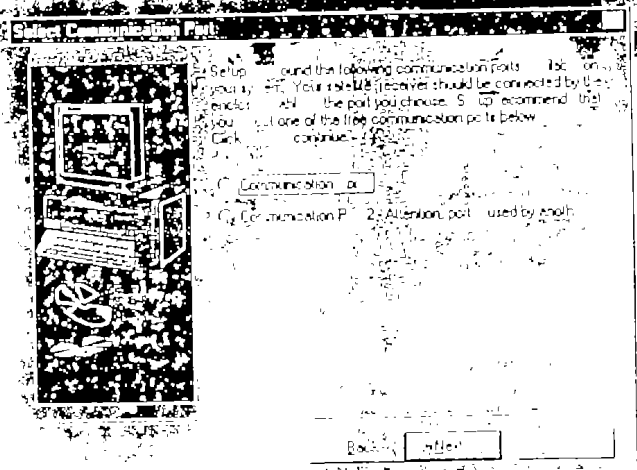
Next >

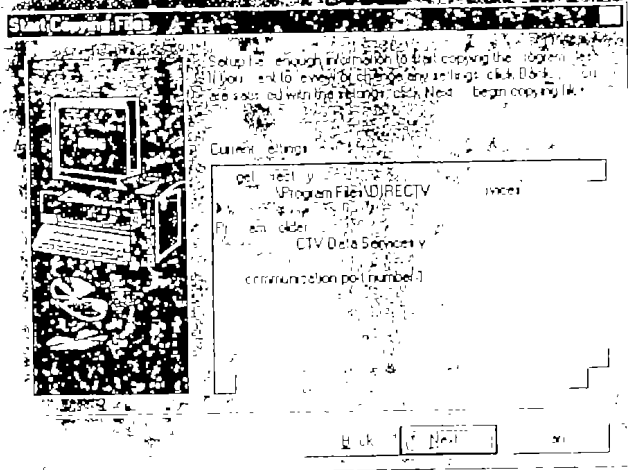
Choose Path

and choose the path for your data. You can choose from a list of paths or you can enter a new path. If you choose a new path, you will need to enter the path name and the path address. You will also need to enter the path phone number and the path fax number. You will also need to enter the path email address. You will also need to enter the path website address. You will also need to enter the path contact name and the path contact title. You will also need to enter the path contact phone number and the path contact fax number. You will also need to enter the path contact email address and the path contact website address. You will also need to enter the path contact name and the path contact title. You will also need to enter the path contact phone number and the path contact fax number. You will also need to enter the path contact email address and the path contact website address.

Next >



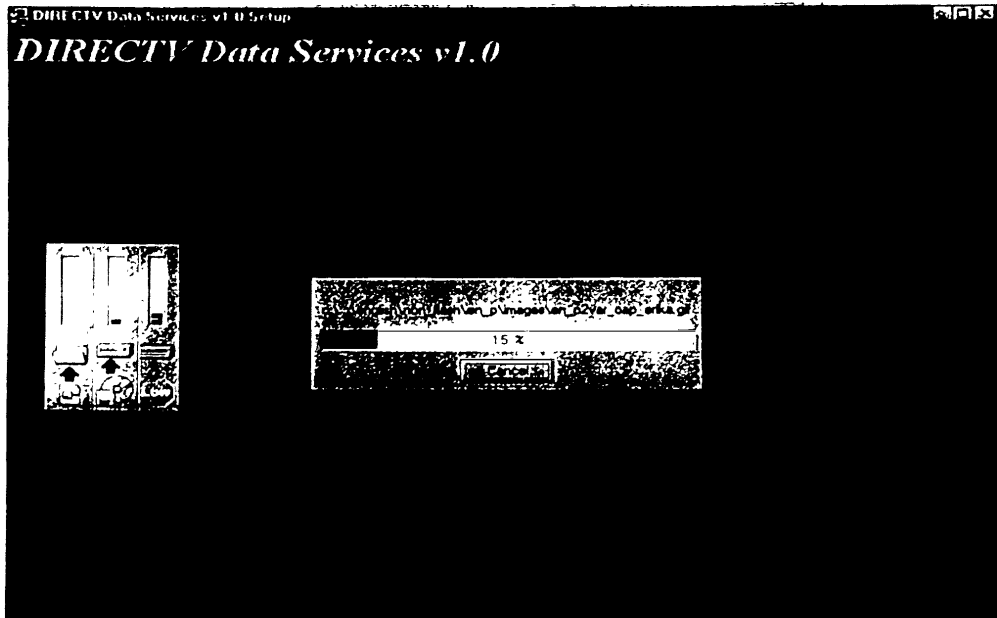






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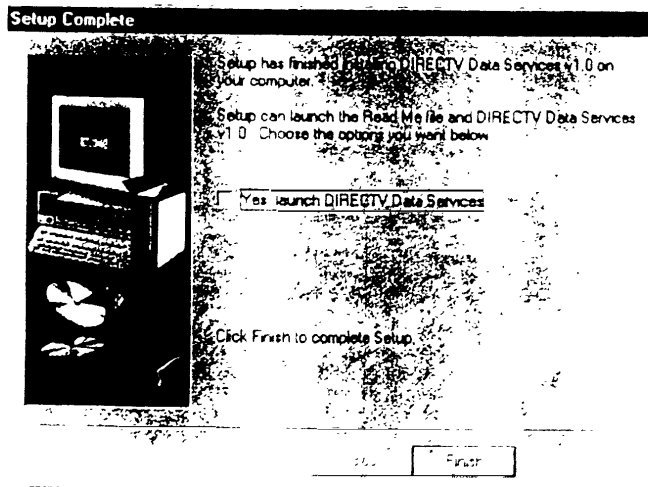
In progress Copying files





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Launch readme file

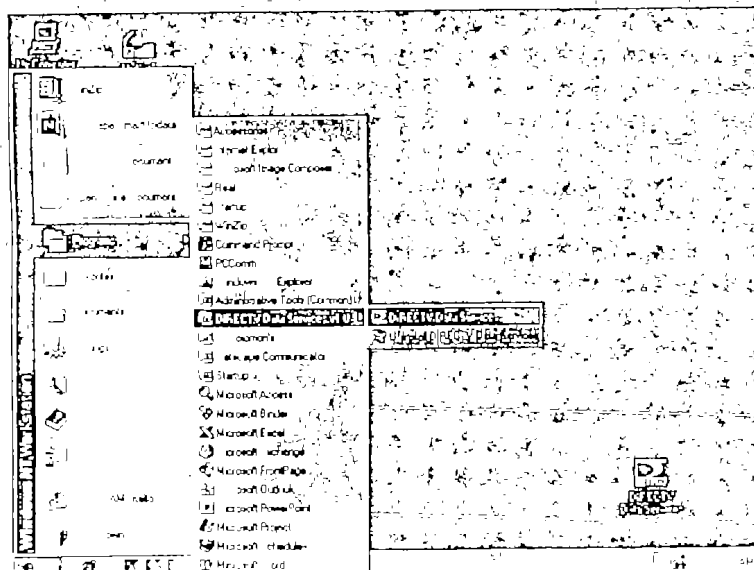




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11 Hp g will p d H d H q d f f h GLA d

11 will p g H d k p d f f h GLA d f f h



P q m f f

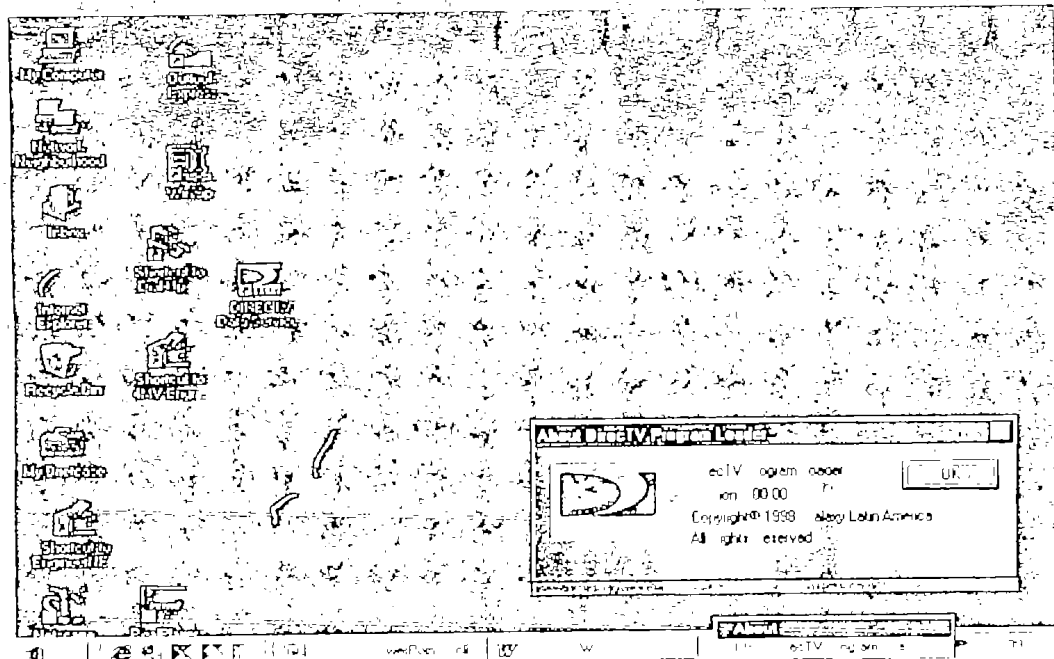
D k t p l

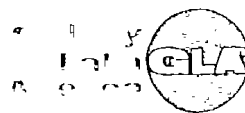
S y m t z l



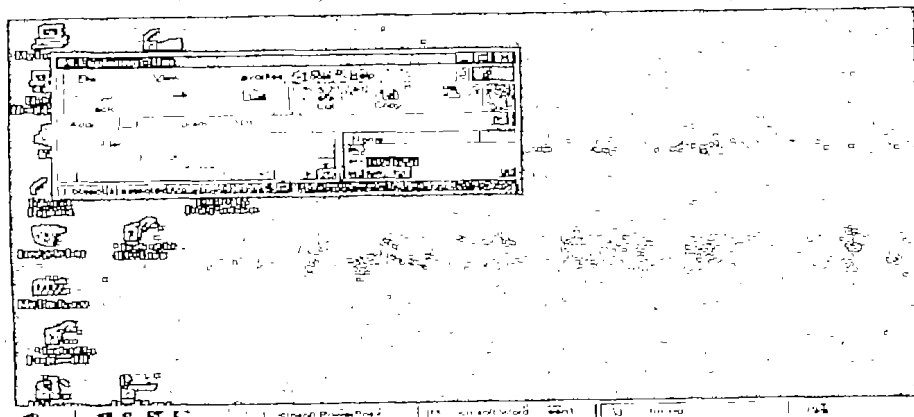
115

Rel: k h m GLA CA I I m b GLA I I



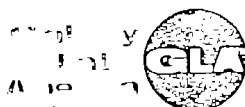


116

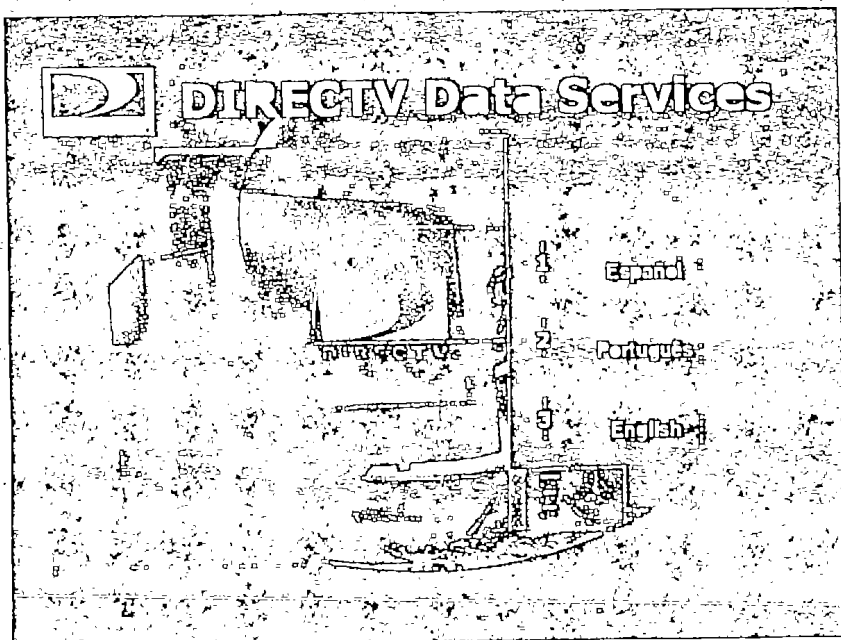


System T y l o
tu Bl wh
d la d





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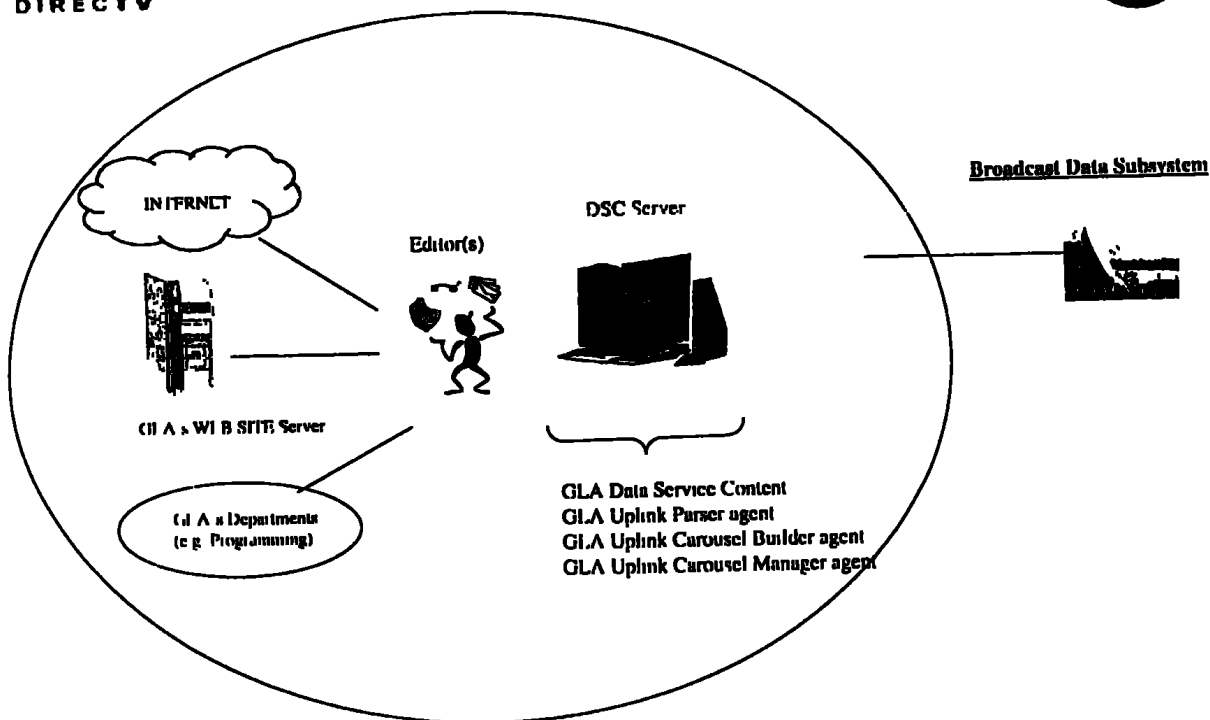




Upstream Subsystem



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GLA FT Lauderdale

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Upstream Server Hardware



DSC Server

N1 machine 400 MHz # NIC

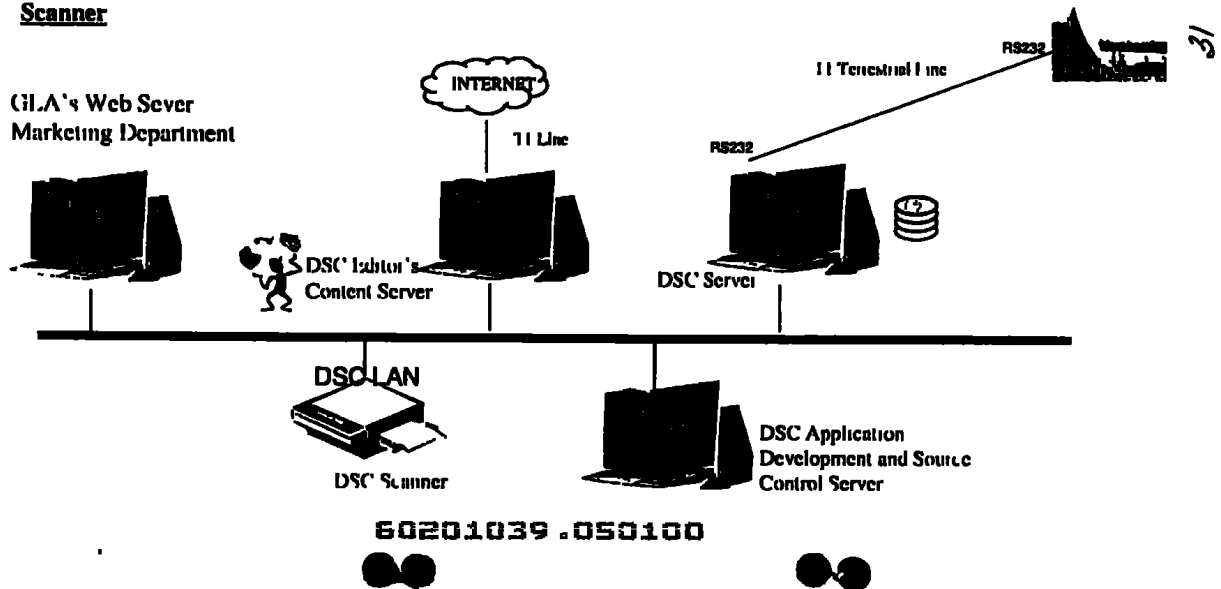
DSC Editor's Content Server

N1 machine 450 MHz # NIC 21" monitor This machine must have T1 connection to the Internet

DSC Application Development and Source Control Server

N1 machine 450 MHz 128 MB RAM # NIC.

Scanner





Upstream Server Software



DSC Editor's Content Server On this machine the editor will built the Service contents. Web Site development software tool (e.g. FRONTPAGE.)

DSC Application Development and Source Control Server

- 1- MS Visual Studio Enterprise Edition version 6.0 - includes C++ and VB compiler, SourceSafe
- 2- Borland C++ Compiler version 4.5
- 3- InstallShield version 5.5 International West Edition
- 4- MS ACCESS

DSC Server. The DSC server software will consist of three entities: A) the GLA Uplink Parser, B) the GLA Uplink Carousel Builder Agent and C) the GLA Uplink Carousel Manager Agent. All are Windows applications with a graphical user interface (GUI) running on the DSC Server

A) GLA Uplink Parser

This application allows the editor to search and replace text strings on selected files or subdirectories

B) GLA Uplink Carousel Builder Agent

This application is the content editor's interface into the system. It allows him to specify which files should be entered into the carousel, when they should be transmitted and when they should no longer be transmitted. It also allows the editor to add properties to the file such as:

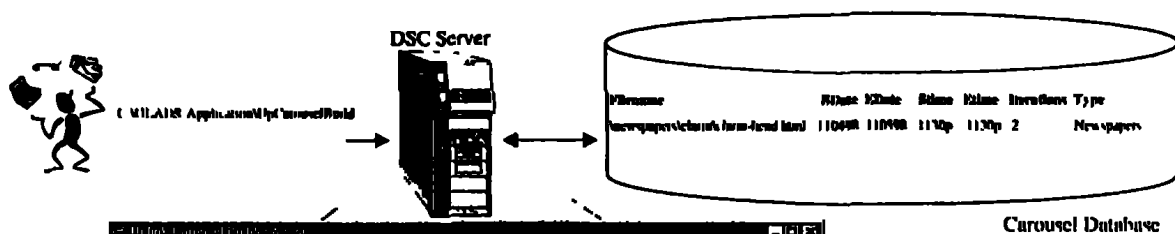
- a) file type (html, index, newspaper, picture)
- b) Start date - start transmission date
- c) End date - end transmission date
- d) Iterations - frequency of transmission
- e) Priority - the Carousel Database will be sorted based on the files priority level

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The Editor will use GLA Uplink Carousel Builder to view files in the Carousel Database, add files to the Carousel Database, edit/modified the properties of existing files and remove files in the Carousel Database



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The screenshot shows the "Uplink Carousel Builder" window. It contains a table with the following columns: "id", "filename", "file size", "file name", "file size", "iterations", and "type". The table lists 16 items, all of which are "picture" type files. Below the table are buttons for "Add", "Edit", "Remove", and "Done".

id	filename	file size	file name	file size	iterations	type
167	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
168	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
169	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
170	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
171	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
172	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
173	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
174	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
175	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
176	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
177	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
178	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
179	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
180	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		
181	C:\Data\DIRECTV\Uplink\Newspapers\Newspaper of 12/22/98	12/21/98 11:53:51 AM	picture	1		

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The editor will start the Uplink Carousel Builder agent from the Start Program Files



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When Uplink Carousel Builder Agent is run the following screen will be displayed On this screen the editor can VIEW the current properties of files in the carousel The Remove button will permanently remove the file from the Carousel Database The close button will terminate the application

seq	path	date	time	type	size	status
167						OK
168	C:\DataServ\DIRECTV\de\English\news_e\news1\uba2.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
169	C:\DataServ\DIRECTV\de\English\news_e\news1\bamamba.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
170	C:\DataServ\DIRECTV\de\English\news_e\news1\boles.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
171	C:\DataServ\DIRECTV\de\English\news_e\news1\caracas.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
172	C:\DataServ\DIRECTV\de\English\news_e\news1\clm.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
173	C:\DataServ\DIRECTV\de\English\news_e\news1\curvule.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
174	C:\DataServ\DIRECTV\de\English\news_e\news1\dot.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
175	C:\DataServ\DIRECTV\de\English\news_e\news1\karnival.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
176	C:\DataServ\DIRECTV\de\English\news_e\news1\leqder.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
177	C:\DataServ\DIRECTV\de\English\news_e\news1\leqder.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
178	C:\DataServ\DIRECTV\de\English\news_e\news1\leqder.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
179	C:\DataServ\DIRECTV\de\English\news_e\news1\leqder.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
180	C:\DataServ\DIRECTV\de\English\news_e\news1\logo2trans.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK
181	C:\DataServ\DIRECTV\de\English\news_e\news1\logo2trans.gif	12/22/98	12/31/99 11:53:51 AM	picture	1	OK

Edit

Remove

Close

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[illegible]

/ 60201039.050100

add



Using the Add button the editor can select the file that he wants to view From the Add screen the editor can add a new file to the carousel

Upload Carousel Builder - Add

seq	path/name
167	
169	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
169	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
170	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
171	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
172	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
173	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
174	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
175	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
176	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
177	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
178	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
179	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
180	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif
181	C:\DataServ\DIRECTV\de\English\news_s\news1\logo2.gif

12/22/1999 11:53 AM

12/31/1999 11:53 AM

1

90 0 100, low, (values range from 0 to 100)

Save

Cancel

Edit

Add

Remove

37

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26



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The editor will start the GLA Uplink Carousel Manager agent from the Start Program Files



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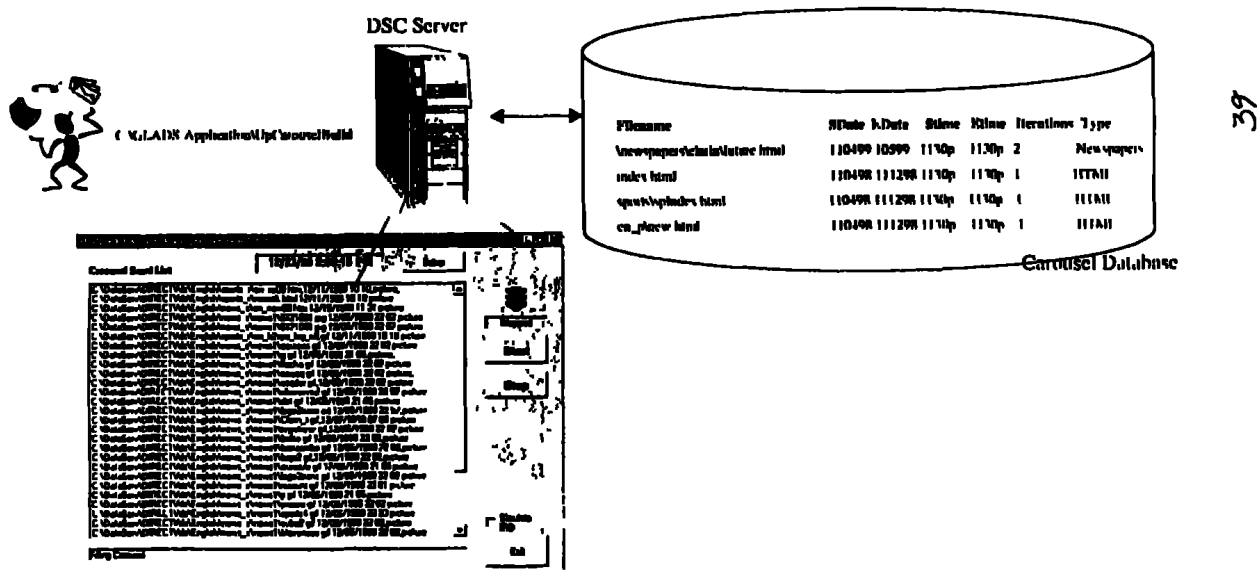
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C) GLA Uplink Carousel Manager agent

This application is responsible for scanning the Carousel Database list of files, framing and transmitting the files
This application will continuously query the Carousel Database to determine which files need to be transmitted
base on the start and end dates The order of transmission is based on the priority number associated with the file



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Using the Setup button the communication setting can be modified. Default communication configuration setting with the DIU unit are comm 1, 4800 baud rate, parity none, data bit 8, stop bit 1. The Base Folder field is the directory where content files are located. The DataBase connection field has database input parameters.

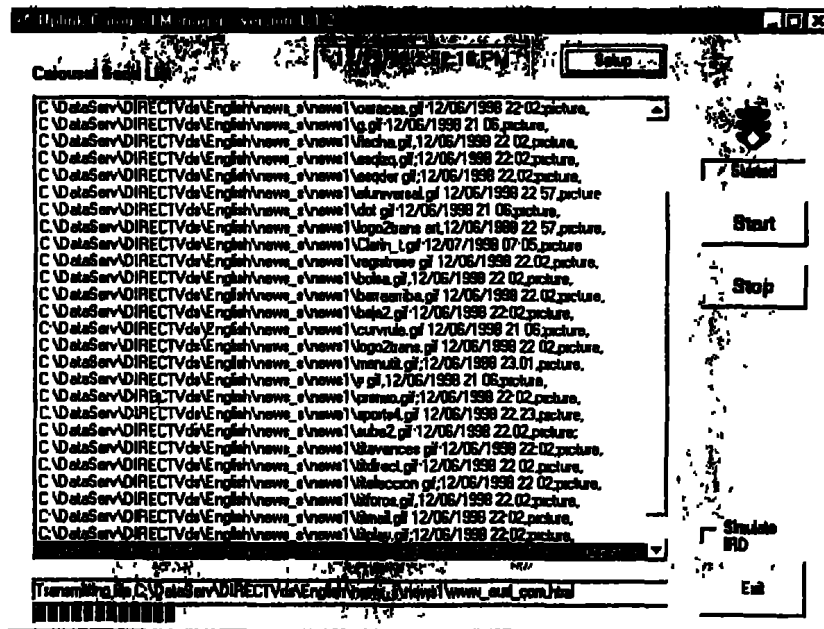
[illegible]

40

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The Start and Stop buttons will start and stop transmission of the Carousel. Progress bar indicates current status of the file transfer Semaphore green light indicates that files are being transfer.

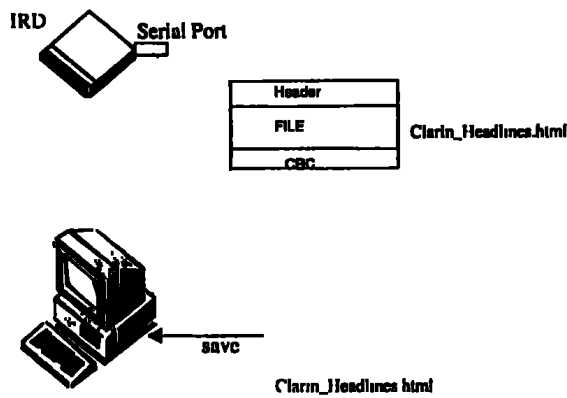


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The Carousel Manager is responsible for framing the files in the carousel. Framing the files means adding a message header, encoding the file so that binary transmission is possible and adding a Cyclic Redundancy Code to the file so that the contents can be verified to be correct by the client software. The message header of each file will have, among other information, the properties for that file.



note:
The Uplink Carousel Manager agent for release v 1.0 as described before will only add a message header, encode the file and add a Cyclic Redundancy Code to the file. If the transmission medium is not as reliable as assumed and data loss are frequent the Uplink Carousel Manager agent for release v 2.0 will break files into 256 bytes packets prior to transmission. Software at the client side will also be upgraded to handle packets.

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Windows Registry Entries



The GLA Uplink Carousel Manager and GLA Uplink Builder agent programs will add the following entries to the system registry.

[HKEY_CURRENT_USER\Software\VB and VBA Program Settings\GalaxyCarousel\settings]
"dhconnect"="Provider=Microsoft.Jet.OLEDB.3.51;Persist Security Info=False;Data Source=C:\DataServ\carousel.mdb"
"commport"="1"
"commsettings"="4800,n,8,1"
"BaseFolder"="C:\DataServ\"

[HKEY_CURRENT_USER\Software\VB and VBA Program Settings\UpBuild\settings]
"col0"="465"
"col1"="4725"
"col2"="900"
"col3"="1815"
"col4"="660"
"col5"="765"
"col6"="555"
"height"="5640"
"width"="10515"
"top"="2250"
"left"="840"
"start_dt"="12/22/98 11:53:51 AM"
"end_dt"="12/31/99 11:53:51 AM"

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[HKEY_CURRENT_USER\Software\VB and VBA Program Settings\UpCarouselMgr\settings]
"top"="1005"
"left"="1005"
"height"="7185"
"width"="9600"

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132
[Signature]

GLA-CRAWLER

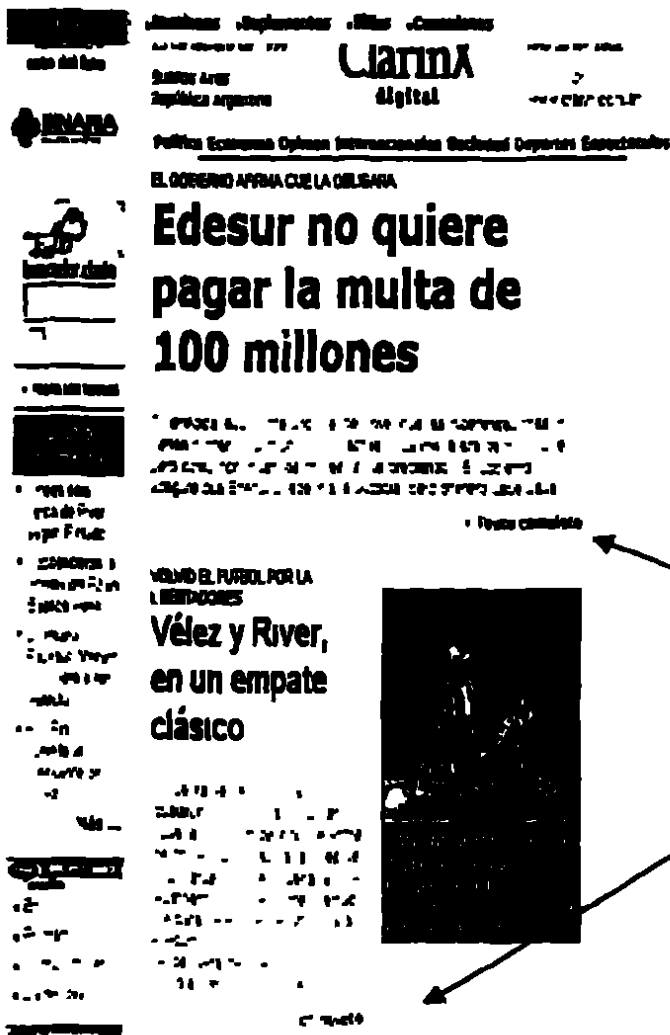
Introduction

The Serial Port Data Services requires the daily download/save of newspapers' 1st page and the links to the main stories on it. Currently we are using Microsoft's Internet Explorer 5.0 browser to "save as" the 1st page (its saves all html, pag, gifs in local directory). However, IE 5.0 does not provide a scheduling mechanism and an "intelligent" identification for download/save of specific links on the page. I have not found any "off-the-shelf" tool that can meet our needs. On this document I explain in detail the requirements for this GLA-CRAWLER tool. Attached you will find two proposals from independent consultants. I strongly recommend Mr. Kevin Tan for the development of this project. His proposal is less expensive to GLA and he is technically very competent in this area.

Requirements

The GLA-CRAWLER must automatically download content from specified sites and "intelligent" identification of links to second level pages. Specifically, this tool will be used to automate the process of downloading newspapers' front pages with specified links. For example, the following page is the Clarin's newspaper 1st page. We must download the 1st page and all links with Hypertext "texto completo" into a local directory.

00701039-050400



Clarín

The tool must save the Clarin's 1st page (with graphics) and must search for "texto completo" string. It then will download/save the page linked by "texto completo".

tf

Another example is "EL Tiempo". On this paper the hypertext string is "Mas Informacion"

SECCION
ES

1. Noticias
2. Deportes
3. Economía
4. Cultura
5. Opinión
6. Internacional
7. Medio Ambiente
8. Salud
9. Educación
10. Otros

11. Clasificados

12. Anuncios

13. Servicios

14. Otros

15. Otros

Primera página

Fiscalía investiga a Gustavo
Castro Guerrero

A prisión ex
ministro por
caso Caja
Agraria



Una pareja de esposos
En Fuzes, Condado de, la
pues de primer
propiedad por la condena
dificultades de la
en los últimos meses de la
que se ha iniciado con
Bogotá el caso de este
caso se abrió en
Caso a cargo de la
la condena se abrió
caso con los señores

E.U. otorgará certificación
plena por lucha antidroga,
pero reñirá a Colombia en
derechos humanos

Día de zanahoria y
garrote

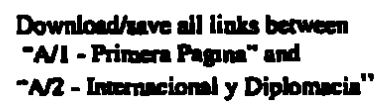
La administración Clinton le dice
hay al mundo que Colombia
hace parte de los países más comprometidos en la
guerra contra las drogas, pero que también es uno de
los principales violadores de los derechos humanos. Lo
que hizo el país para marcar las dos calificaciones de
Estados Unidos. La fiscal Janet Reno dijo que viene a
Colombia a escuchar y a aprender. Respuesta de
Madame Albarrán al presidente Pastrana.

Rene Guerrero / EL TIEMPO

OTROS TITULARES

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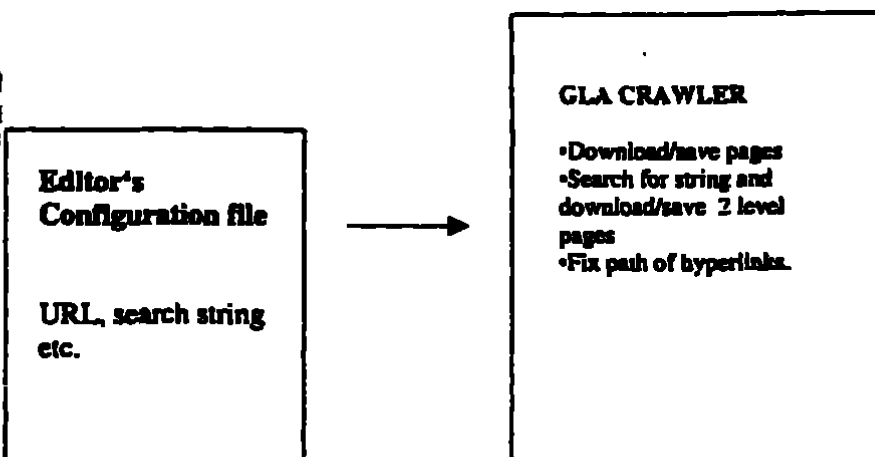


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As shown before, the GLA-CRAWLER must allow the editor to :

- select the URL (1st page) to download,
- select the hypertext string on the 1st page
- select section (begin/end section marker) of links on 1st page
- schedule downloads

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6/13



04/26/00

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- InfoFacil is the first product that GLA is launching as part of its Data Service strategy
- InfoFacil is a one way broadcast system offering "GLA-chosen Web like content" to the subscribers' PCs through the low-speed serial port in all current Integrated Receiver/Decoders (IRDs)
- The Web content is acquired and processed at GLA in Ft Lauderdale, Florida. The WEB contents is sent over a terrestrial link to the CBC in Long Beach, California, where they are integrated to our normal broadcast system and uplinked over the satellite. The subscriber in-country then receives the data stream via the existing GLA dish antenna into the IRD. The IRD is then connected to the subscriber's PC through serial port. The subscriber must tune the IRD to the data channel and leave both the IRD and PC on for 2 hours to receive a complete content update. Data then flows through the IRD directly to the hard drive on the PC. Specialized client software will be installed on the subscriber's PC to enable the reception, processing, and viewing of the data.

04/27/00

WITNESSED

St. Solt

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7/13

What does the customer see

To the customer, the GLA content appears as a seamless, fast Web site. The user can use his/her own installed browser or we can deliver a browser as part of the installation process. The browser will be pre-configured to open on the GLA News Home Page which can be updated daily. Each time the user starts the GLA News browser, a Contents Page appears, containing headlines, links to news stories and links to news sections, e.g. International, local, sports, weather, DirectTV, etc.

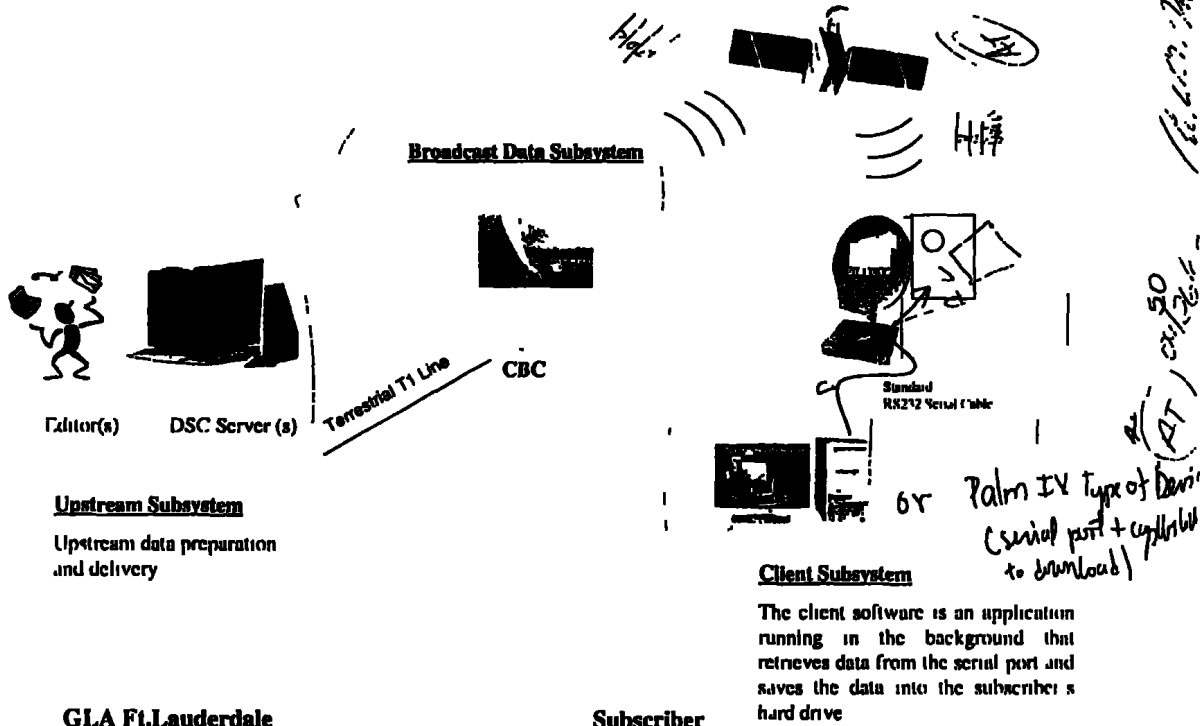
24/2/2000
17:11:11
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Inf Facil's Architecture



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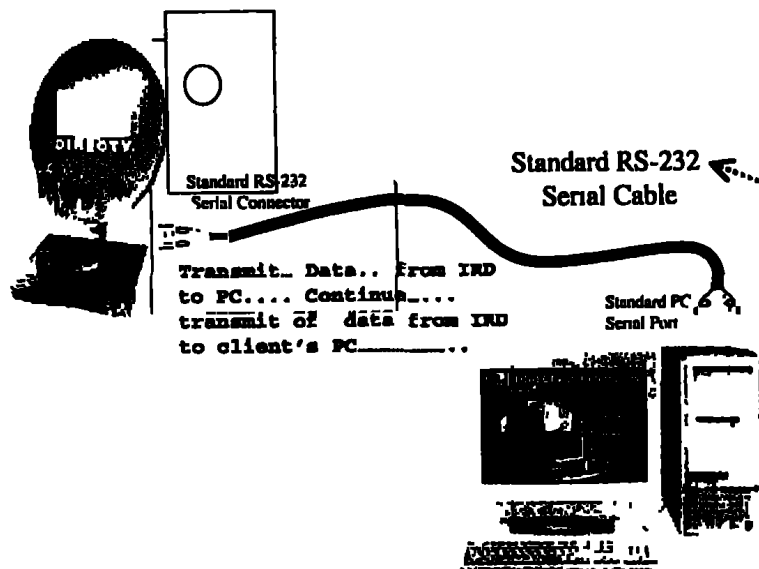
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Client Architecture Overview



File Path: \\csl\...



GLA Provides

InfoFacil
Installation CD-ROM

- Customize Microsoft Internet Explorer
- Install Program
- Uninstall Program
- Communication Agent

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52 11/16/13 10:10 AM

Installation will create a Program Folder, Desktop Icon, and a System Tray Icon.



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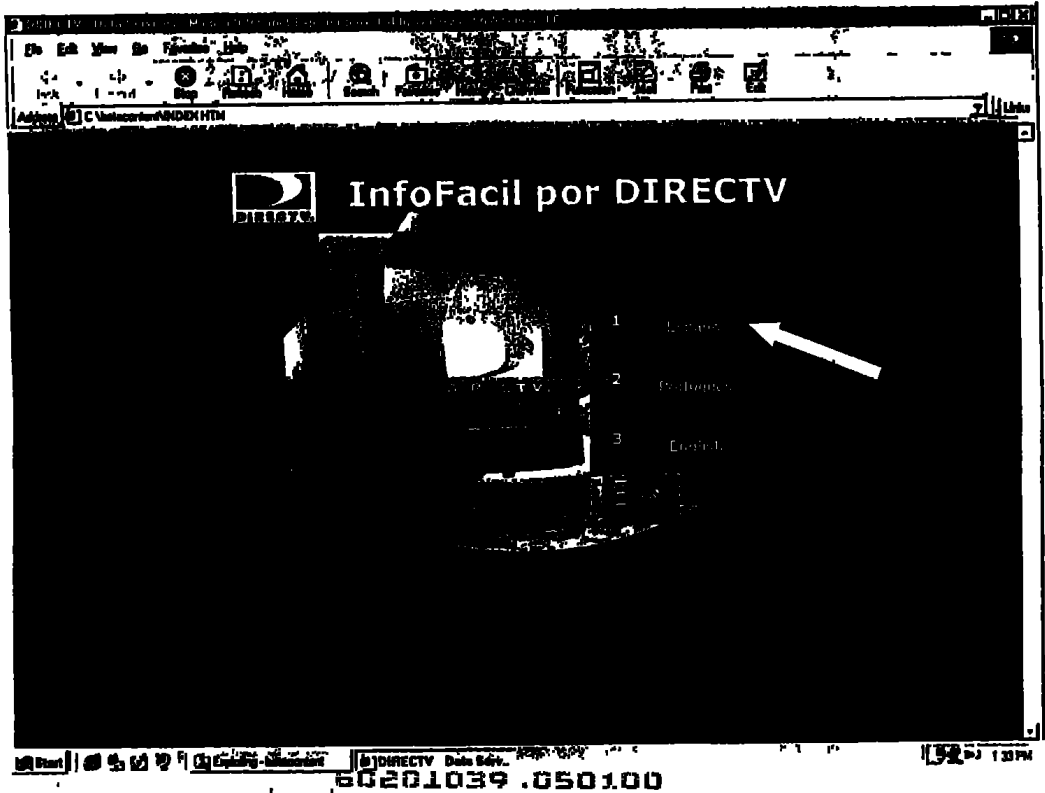


CLICK on ESPAÑOL to see the content



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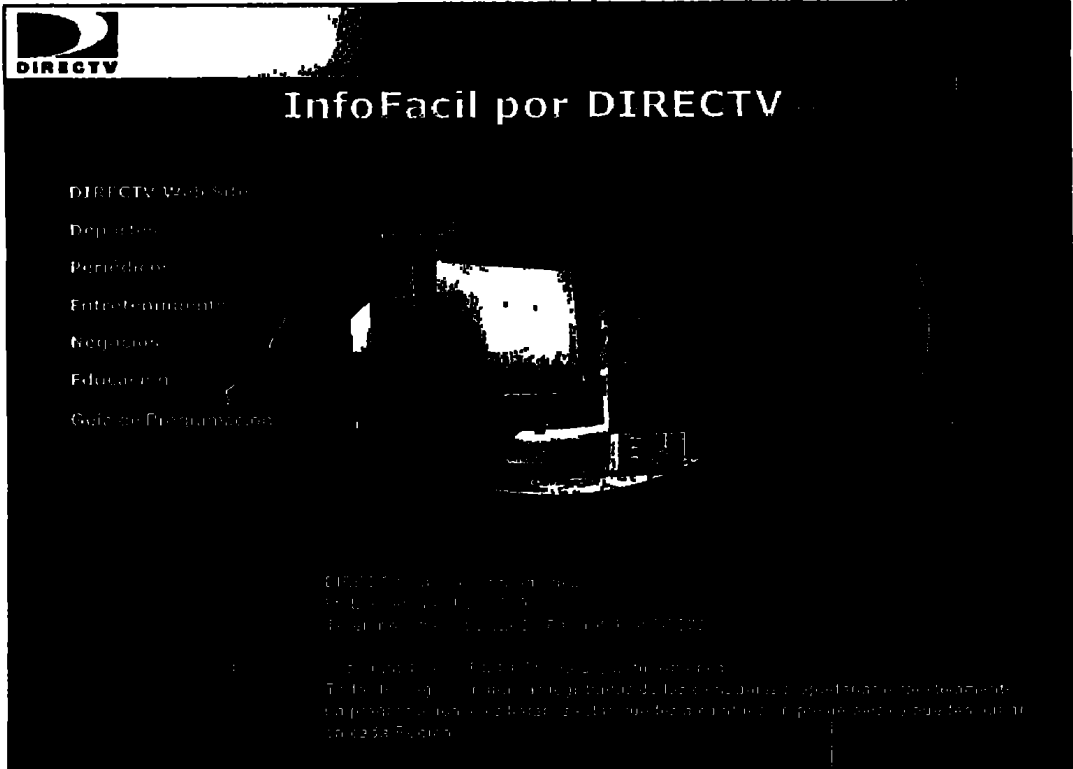
Content: DIRECTV Web Site, Sports, Newspapers, Entertainment, Business, Education, Program Guide



Call 654.1.67

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InfoFacil BetaTest Status Report

- Beta Test started on May.
- GLA is broadcasting 2.5 MB of selected Web content and a 10-days program guide on channel 400.
- Currently we only transmit Spanish content. No Portuguese content.
- Looking into the possibility of having a 115000 bits per second serial port in our next generation of IRDs (3MB in approximated 4.3 minutes).

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Registry Entries

The installation program will add the following entries to the subscriber's system registry

```
[HKEY_LOCAL_MACHINE\SOFTWARE\DIRECTV\DIRECTV Data Services v1 0]  
[HKEY_LOCAL_MACHINE\SOFTWARE\DIRECTV\DIRECTV Data Services v1 0\1.00.000]
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Galaxy]  
[HKEY_LOCAL_MACHINE\SOFTWARE\Galaxy\Parser]  
"Port"="1"  
"LocalBase"="C:\Program Files\DIRECTV Data Services v1 0"  
"Version"="1.00.000"
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run]  
"SystemTray"="SysTray.Exe"  
"ActiveMovie File Extensions"="ActMovie.exe /Check"  
"DIRECTV Data Services"="C:\Program Files\DIRECTV Data Services v1 0\gladsca.exe"
```

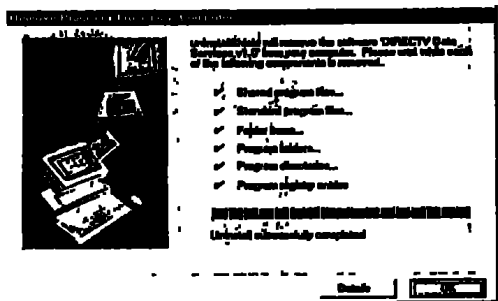
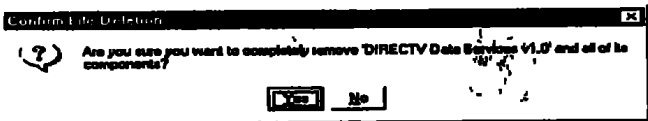
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B) GLA's Uninstall

The uninstall program will remove all GLA's files from the subscriber's system and all GLA related registry entries



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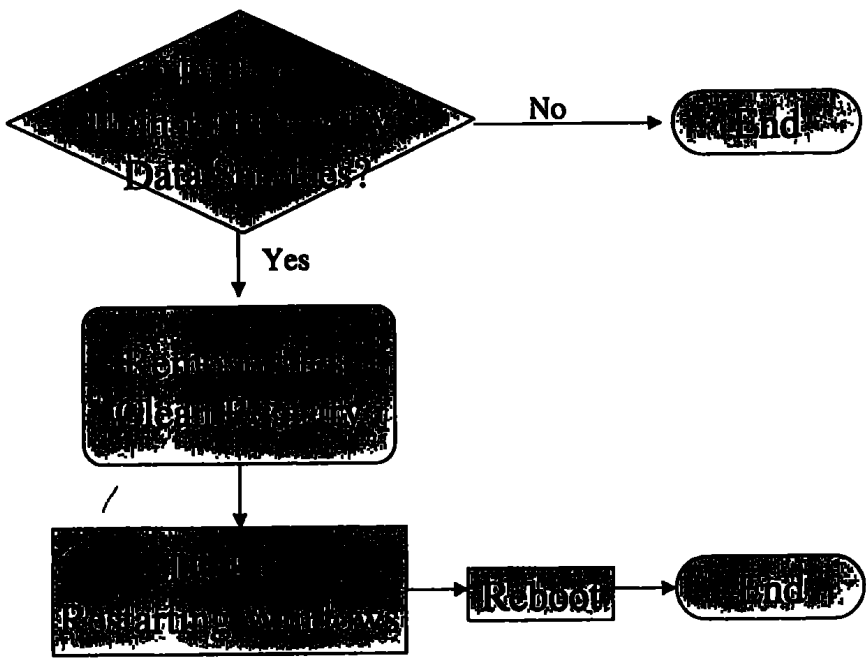


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DirecTV Data Services
Uninstall Flowchart



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C) GLA's Client Agent

The GLA's Client Agent will be installed at the subscriber's PC. This application will monitor a standard serial PC communication port for data coming from the IRD and parse and store it on the user's hard drive. The GLA's Client Agent runs as a standard Windows application. This application will be running in the background, which means that the program has no user interface. Its only visible presence on the desktop is a DIRECTV icon on the System Tray.

When the program executes, it will open a connection to a standard serial port connected by a modem cable to the Low Speed Port of the IRD. It will then enable the IRD to send continuous data with the OpenPRDI's SerialPort command and monitor data sent from the IRD. GLA's Communication Software Agent will be installed to launch at Windows startup.

The data received from the port will be stored in files on the user's hard drive for later retrieval by the user. The data received from the IRD will be in the form of framed files. Data received will be first stored in a temporary file. The Cyclic Redundancy Code (CRC) of each file will be checked to verify that the contents is correct. If the CRC is incorrect, the data will be discarded.

GLA's Client Agent extracts from the header of each file the path and file name, the date stamp and file type. The path and filename will define a location relative to the "base" directory path on the user's machine. The user's base directory path (where he decided to install GLA software) will be saved in the Windows Registry at installation time.

The date and time stamp will be used to determine if the file has already been received that day and need not be replaced. If the file does not already exist, then any required post-processing indicated by the file type (e.g., fix up links, file deletion) will be performed and the file will be moved to its proper location.

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**DirectTV Data Services
GLA's Client Agent
Flowchart**



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LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND INFORMATION SERVICES

ABSTRACT OF THE DISCLOSURE

A system and method for providing data transactions and web information and services to a user integrated with conventional television program viewing, such as provided by a DSS is taught. The system requires no additional communication hardware, such as a modem. The system also employs the user's existing browser to view information. An application to automate delivery of such data transactions and web information and services and to users who may not have access to a conventional ISP is also taught.

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A TODOS A QUIENES ESTE DOCUMENTO PUEDA IMPORTAR
DEPARTAMENTO DE COMERCIO DE ESTADOS UNIDOS
Oficina de Patentes y Marcas de Los Estados Unidos

LO SIGUIENTE ES PARA CERTIFICAR QUE LO QUE AQUÍ SE ANEXA ES UNA COPIA VERDADERA DE LOS ARCHIVOS DE LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS, SOBRE AQUELLOS DOCUMENTOS ABAJO IDENTIFICADOS COMO UNA SOLICITUD DE PATENTE, Y QUE LOS MISMOS REUNEN LOS REQUISITOS PARA QUE SE LES OTORQUE UNA FECHA DE PRESENTACION BAJO EL 35 USC 111.

NUMERO DE SOLICITUD: 09/733,229
FECHA DE PRESENTACION: Diciembre 7, 2000

Por la Autoridad del
COMISIONADO PARA PATENTES Y MARCAS



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

August 09, 2001

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 09/733,229

FILING DATE: December 07, 2000



By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

T. LAWRENCE
Certifying Officer

CUSTOMER NO.: 020991

12-11-00

PATENT
Docket No. PD-200184B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
APPLICATION TRANSMITTAL LETTER

Certification under 37 CFR 1.10 (if applicable)

EF7408782369US

EXPRESS MAIL mailing number

December 7, 2000

Date of Deposit

I hereby certify that this application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

VICKIE CHUFF

(Type or printed name of person mailing application)

(Signature of person mailing application)

DATE: December 7, 2000

Anticipated Classification of

Class

Subclass

Prior Application: 60,201,039

Examiner: unknown

Art Unit: unknown

Assistant Commissioner for Patents
Washington, D. C. 20231

Applicant hereby claims the benefit under 35 U.S.C. 5118(e) of the following United States provisional application: 60/201,039, filed May 1, 2000.

Enclosed is a complete copy of the prior application, including the declaration as originally filed.

☒ The filing fee is calculated below.

CLAIMS AS FILED IN THE PRIOR APPLICATION
LESS ANY CLAIMS CANCELLED AND/OR PLUS ANY CLAIMS ADDED BY AMENDMENT BELOW

For:	Number Filed		Number Extra	Rate	
Basic Fee					\$ 710.00
Total Claims	47	-20 =	27	x \$ 18.00	\$ 486.00
Independent Claims	5	-3 =	2	x \$ 80.00	\$ 160.00
Multiple Dependent Claims				+ \$280.00	\$
TOTAL FILING FEE :					<u>\$1,356.00</u>

3. ☒ Please charge Deposit Account No. 50-0383 of Hughes Electronics Corporation, El Segundo, California, in the amount of \$1,356.00. The Commissioner is hereby authorized to charge any additional fees, which may be required, or credit any overpayment, to that account.

CUSTOMER NO.: 020991

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PATENT
Docket No. PD-200164B

4. ☒ The Commissioner is hereby authorized to charge any fees which may be required or to credit any overpayment to Deposit Account No. 50-0383. This letter is submitted in triplicate for charge purposes.
5. ☒ The Commissioner is further hereby authorized to charge to the said above Deposit Account No. 50-0383, pursuant to 37 CFR 1.25(b), any fees whatsoever which may properly become due or payable, as set forth in 37 CFR 1.16 to 1.17 inclusive, for the entire pendency of this application without specific additional authorization.
6. ☐ Cancel in this application original claims _____ of the prior application before calculating the filing fee.
7. ☒ Amend the specification by inserting before the first line the sentence:
- This Application claims the benefit under 35 U.S.C. §119(e) of the following United States provisional application: 60/201,039, filed May 1, 2000. -
8. ☐ Transfer the drawings from the prior application to this application and abandon said prior application as of the filing date accorded this application. A duplicate copy of this letter is enclosed for filing in the prior application file.
9. ☒ New drawings are enclosed.
10. ☐ The prior application is assigned to _____.
11. ☐ The power of attorney in the prior application is to _____, Registration No. _____.
- a. ☐ The power appears in the original papers in the prior application.
- b. ☐ Since the power does not appear in the original papers, a copy of the power in the prior application is enclosed.
- c. ☐ A new power of attorney is enclosed.
- d. ☒ Address all future communications to: Customer Number 020991, Hughes Electronics Corporation, Patent Docket Administration, Bldg. 001, M/S A109, PO Box 958, El Segundo, CA 90245-0958.
12. ☐ A preliminary amendment is enclosed.
13. ☒ I hereby verify that the attached papers are true copy(ies) of prior provisional application Serial No. 60/201,039 as originally filed on May 1, 2000.

The undersigned declares further that all statements made herein of his or her own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

December 7, 2000
Date


Michael W. Sales, Registration No.: 30,213
Attorney for Applicant(s) and Assignee

CUSTOMER NUMBER 020991
HUGHES ELECTRONICS CORPORATION
Patent Docket Administration
Bldg. 001, M/S A109
PO Box 958
El Segundo, CA 90245-0958
Telephone: 310-682-9918
Date: December 7, 2000
08-508 (7/88)

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Customer No. 020991

FD-200154B

LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND INFORMATION

09733229-120700

Inventors: Steve Soloff
Angela M. Trujillo

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LOW SPEED DATA PORT FOR DATA TRANSACTIONS AND INFORMATION

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention generally relates to methods and systems for communicating data and more specifically to methods and systems for transmitting and receiving data in an interactive satellite-based broadcast system.

2. Description of the Prior Art

In today's world, the demand for information available on the Internet, the global network that connects a multitude of users, is unparalleled. The speed and volume of Internet information continues to grow and the ease at which this information can be obtained makes the Internet the fastest growing technology of our generation.

Typically, all the end-user needs to access the vast amounts of information made available on the Internet is viewing means such as a Personal Computer (PC) or a Personal Data Assistant (PDA), and means to connect to an Internet Service Provider (ISP), a company or organization that provides a local connection to the Internet, either through terrestrial land lines or through a digital cable connection.

Users typically use a terrestrial telephone line for their

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modem connection. However, a problem arises in areas of the world where phone or cable lines are impractical. This could be due to the high cost of running lines through difficult terrain or due to the prohibitive cost to the end user of a modem connection. In these cases, it is much more practical to make the information available to the user via satellite communications much like the satellite television industry.

The convergence of satellite and Internet technologies is one of the more exciting aspects of today's satellite revolution. Satellites are proving to be highly effective multimedia platforms because of their ability to deliver information at high data rates to virtually any location within a given signal coverage zone.

Typical satellite-Internet delivery systems are based on Asynchronous Transfer Mode (ATM) architecture that uses a low-speed modem connection for user information requests and a high-speed satellite channel to deliver to each user the requested information.

Satellites have had a significant impact on the television industry. With an orbital location so far from earth, satellites transmit a usable signal over a broad footprint. The large geographical coverage of satellite makes it possible to serve thousands, if not millions, with a single satellite.

The basic components of a satellite system are one or more transmitting earth stations, the uplink, the satellite, the

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downlink, and one or more receiving earth stations. The communications satellite is a radio relay operating in space for ten or more years without the need for on-site servicing or adjustment. Satellites contain transceivers that receive and transmit signals, including video programming, telephone calls and data. They operate in a vacuum at a location exposed to extreme temperature changes.

In conventional delivery of "web" information, an Internet ISP is required, as well as communications hardware, such as a modem. In areas where a conventional ISP is not available, web content and web-like information is generally unavailable.

In 1995, Hughes Network Systems ("HNS") introduced its DirecPC® satellite delivery system, which provides subscribers in North America with high-speed downloads from the Web.

In 1997, HNS released its DirecDuo® multimedia system, which gives subscribers in the USA access to both high-speed Internet connectivity and the DirectTV® bouquet of digital Direct-To-Home (DTH) TV services all from a single fixed satellite dish.

HNS also broadcasts multimedia content directly to its subscribers in what is called the "push mode". HNS is responsible for the selection of multimedia content; therefore, no return link is required. Subscribers can choose from a list of the most popular sites on the Internet and have those sites delivered automatically to their hard drives over high-speed satellite

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links.

Once again, the problem arises when the end-user cannot dedicate a telephone line or a cable to receive the information from the satellite.

Accordingly, what is needed in the art is a system and method for providing data, particularly web content and information services, to users, integrated with conventional television program viewing such as provided by Direct Satellite Service (DSS), without the requirement that the user possess a dedicated telephone line connection.

It is, therefore, to the effective resolution of the aforementioned problems and shortcomings of the prior art that the present invention is directed.

SUMMARY OF THE INVENTION

The present invention is a one way broadcast system offering information such as Web-content information, to the subscriber's PC through the low-speed serial port in all current Integrated Receiver/Decoders (IRDs). AN IRD is a device that receives satellite signals and decodes signals that have been encrypted. Typically, use of the low-speed serial data port on the user's IRD was limited to debugging the IRD and not for data transfer. Although limited by the low speed transfer of data through the serial port, and therefore limited to the amount of information

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that can sensibly be transferred to the user, the present invention utilizes serial data transfer technology and takes advantage of the end user's facilities, namely a PC and a browser, to deliver information to users.

5 Delivery and processing of the received information is managed through the use of a software application in the viewing device. The software tool automatically downloads the information and saves it.

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15 The information is first acquired and processed at a local information retrieving and editing center. The information is sent via terrestrial link to a Central Broadcasting Center where it is integrated into a conventional broadcast system and uplinked to a satellite. The subscriber, "in country", receives the data stream via their existing satellite dish antenna into their IRD. The IRD is then connected to the subscriber's PC via the serial port. The subscriber must tune the IRD to the data channel and leave both the IRD and the PC on for at least a predetermined amount of time. Data flows through the IRD directly to the hard drive on the PC. Specialized client software can be installed on
20 the subscriber's PC to enable reception, processing and viewing of the data.

 In the preferred embodiment, the information transmitted via the satellite network is HTML-formatted data retrieved from the Internet. To the customer, the received information appears as a

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seamless, fast Web site. The user can use his or her own installed browser, or a browser can be provided as part of the installation process. Each time the user starts the browser, a Contents Page appears, containing headlines, links to news stories and news sections, such as international, local sports, weather, Direct TV, etc.

The present invention ties a channel in a television viewing system such as a DSS, with data delivery such that the channel can transmit data related to a selected program, e.g. a program guide or related information. Delivery of the information requires no extra channel allocation because the data is attached to existing channels. The additional data and information changes as the user changes channels.

In the preferred embodiment, the data and information is delivered in HTML format so that it may be viewed with any web browser. However, the information need not be in HTML format. For example, television program guide information can be added to the data stream to provide users with the ability to receive advance television program schedules.

In application to a DSS system, the information is transferred to a viewing device, such as a computer terminal or PDA through a cable connection or other simple link, such as a standard RS-232 serial connection.

Specifically, the present invention is a DSS terrestrial-

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satellite communications network for delivering information to a viewing device without the need for additional communications hardware such as a dedicated telephone line or cable. The invention comprises: means, situated at a first location, for selecting, acquiring and editing certain information, such as HTML-formatted information from the Internet; a first network computer having memory storage means for storing the information; a central network computer situated at a second location; means for transmitting the information from the first network computer to the central network computer; one or more communication satellites for receiving and transmitting broadcast signals; uplink means coupling the information from the server to the satellites in the form of broadcast signals; downlink means coupling the broadcast signals from the satellites to a receiving antenna situated at a third location within the satellite's coverage area, the receiving antenna receiving the downlink broadcast signals from the satellites; an IRD connected to the receiving antenna wherein the IRD descrambles the incoming signals; a viewing device, such as a PC or a PDA, situated at the third location and connected to the IRD via a low-speed serial data port, the viewing device containing a browser for displaying the signals received from the IRD on the viewing device, said signals representing, for example, HTML-formatted Internet information; and a memory storage device situated in the viewing

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device for storing the information, wherein software provided to the user allows for the information to be automatically stored on the user PC's hard drive.

In the preferred embodiment, the central network computer bundles the selected Internet information with audio and video DSS signals in the uplink to the satellite. At the user's IRD, the Internet information is then extracted from the audio and visual signals, where it is transmitted via serial link to the user's viewing device.

In an alternate embodiment, the information is not HTML information from the Internet, but is instead television program listings, which are sent in the manner described, i.e. transmitted to the central broadcasting center where it is bundled with television audio and video signals, uplinked to one or more satellites, downlinked to multiple users, descrambled at the user's IRD and transmitted via the serial port to the user PC's hard drive where it is viewed on the user's viewing device. Once again, the user does not require a modem to receive the information, only a serial cable connection from the serial port of the IRD to the user's PC. The program guide data presents the user with advanced television schedules, up to thirty days in advance.

The invention is applicable for any type of information, not only HTML-formatted information. Television program listings are

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merely one example. The common feature to all of the possible applications is that the user need not possess a modem, or, in the case of Web-content information, any access to an Internet Service Provider.

5 An important feature of the preferred embodiment of the present invention is that the information broadcast from the central network computer at a Central Broadcast Center is related in subject matter to the bundled audio and video broadcast signals. A server at the Central Broadcast Center couples information received from an Editor Content Server with channel broadcasts having similar subject matter content. In this way, the user receives information having subject matter the same as or similar to the subject matter of the video channel he or she is currently tuned into. When the user changes the channel of his or her television, new information, having similar subject matter as the new channel is automatically selected, bundled with the corresponding audio and video signals, and broadcast to the user.

20 The IRD incorporated into a DSS terrestrial-satellite Internet communications network receives the downlinked broadcast signals of bundled audio, video, and data information. The IRD includes a first port to provide linking means to a television and a second port to provide linking means to a computer, where the second port is a low-speed serial data port capable of transferring the data information to the viewing device via a

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serial cable without the need for a dedicated telephone line and access to an ISP. The IRD contains the intelligence to extract the information from the audio and video signals; the information is sent to the viewing device via the serial connection, and the audio and video signals are sent to the user's television.

It is therefore one object of the present invention to provide data to a user that is integrated with conventional television program viewing, such as provided by a DSS, and without requiring additional communications hardware.

It is another object of the present invention to send HTML-formatted information, retrieved from the Internet, to multiple users, wherein the user need not possess a modem or a dedicated telephone line.

It is another object of the present invention to send advanced television program listings to users via the serial connection on the user's IRD.

It is yet another object of the present invention to automate delivery of such data transactions and web information and services to users who may not have access to a conventional Internet Service Provider.

It is still yet another object of the present invention to utilize the serial port of the user's IRD, previously used only for debugging purposes, to provide serial data transmission to the user.

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It is to be understood that both the foregoing general description and the following detailed description are explanatory and are not restrictive of the invention as claimed. The accompanying drawings, which are incorporated in and
5 constitute part of the specification, illustrate embodiments of the present invention and together with the general description, serve to explain principles of the present invention.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with particular reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram illustrating the data services architecture of the present invention.

Figure 2 illustrates the architecture of the subscriber's hardware components of the present invention.

Figure 3 is a block diagram illustrating the data services installation flowchart of the present invention with language selection.

20 Figure 4 is a block diagram illustrating a continuation of the present invention's installation flow including browser verification.

Figure 5 is a block diagram illustrating a continuation of the present invention's installation flow including check for port

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availability.

Figure 6 illustrates the IRD-PC connection via the IRD's serial port.

Figure 7 illustrates the architecture of the upstream subsystem of the present invention.

Figure 8 illustrates the upstream subsystem of the present invention in greater detail.

Figure 9 illustrates the broadcasting subsystem architecture of the present invention.

Figure 10 is a block diagram illustrating the data services architecture of the program guide embodiment of the present invention.

Figure 11 is a block diagram illustrating the architecture of the upstream subsystem for the program guide embodiment of the present invention.

Figure 12 is a block diagram illustrating a continuation of the upstream subsystem for the program guide embodiment of the present invention.

Figure 13 is a block diagram illustrating the architecture of the user subsystem for the program guide embodiment of the present invention.

Figure 14 is a block diagram further illustrating the architecture of the user subsystem for the program guide embodiment of the present invention.

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Figure 15 shows a sample program guide that a user would see on their viewing screen.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

5 Referring to Figure 1, the system architecture of the present invention 100 is shown.

An editor 10 at a Data Service Center (DSC) 15, such as Florida, chooses web-content information, in the form of HTML data. The data is prepared and placed on a Data Service Center Editor 20. The DSC outputs the data contents via a terrestrial T1 link 30 to a remote Central Broadcast Center (CBC) 40, such as California, where it is uplinked to one or more communications satellites 50, such as G8i satellites.

A user, at a location 55 within the satellite's footprint, in South America for example, receives the data stream via his or her satellite dish antenna 60. The information is then forwarded along to an Integrated Receiver/Decoder (IRD) 70. Preferably, the data stream is bundled along with the conventional audio and video television signals that ultimately reach the user's television.

20 IRD 70 is connected to the user's PC, PDA or other data viewing device 80 via a standard serial cable 90 from the IRD's 16550 UART serial port. The user must tune IRD 70 to the data channel and leave both the IRD and the PC on for a predetermined amount of time to receive a complete data content update.

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Data flows through IRD 70 directly to the hard drive of PC 80 through the serial port. Specialized software is supplied to the user and can be installed on the user's PC to enable the reception, processing and viewing of data. The software captures the incoming data, breaks it into files, and converts it into HTML form. The browser on the user's PC allows easy viewing of the HTML-formatted data. Because the HTML data is transmitted in serial form via cable 90, no dedicated modem is necessary to receive the information. Further, no ISP is needed to access this Internet-extracted information.

Figure 2 illustrates the downstream or client architecture used by the user to receive the HTML data. Satellite dish antenna receives the downlinked broadcast from satellites 50. Antenna 60 is connected to the user's PC 80 via a standard RS-232 serial connector, which feeds the information received from satellite 50 to the PC's standard serial port.

The user must have a satellite dish antenna, an IRD connected to the antenna, and a viewing device such as a PDA or a PC. The subscriber's PC must have certain minimum requirements. It must include an available serial port, capable of reliably running at 4.6 kbs, a 486 or higher processor, 8 MB of RAM and Win95 or Win NT operating system. 55 MB of available hard drive space is required. 50 feet of serial cable is provided to the subscriber along with the hardware package.

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The subsystem software supplied to the subscriber includes an install program situated on a memory storage device such as a CD-ROM and will start immediately upon insertion in the drive. The install program setup and installs all required files.

5 The install program will start automatically when the subscriber inserts the installation software residing on the CD-ROM into the drive. The install program sets up and installs all required files and adds all required system registry entries.

Figure 3 illustrates the process of the installation software of the present invention. Referring to Figure 3, after the installation step 110, the subscriber can choose from a variety of languages 120 in which to view the received information including English, Spanish and Portuguese 130-150. The install program determines which browser has been installed, the available communications port and the available space on the user's hard drive. This is illustrated in Figures 4 and 5.

The subscriber must have a browser installed in his or her PC in order to view the HTML-formatted data. If not, one is supplied to the subscriber. Microsoft Internet Explorer 4.0 or
20 Netscape 3.0 or higher are both acceptable.

A Data Service Communications Agent (DSCA) is a small executable application program residing in the user's PC 80. The program informs the user when data is either being transmitted (an icon on desktop appears red) or that data has been received

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(an icon on desktop appears blue). The program is a C++ program running under the Microsoft windows 95/98 operating system. The program runs as a standard Windows application running in the background, so there is no user interface. The only visible
5 presence on the user's desktop is the appearance of the icons.

The DSCA program monitors the PC port for data coming from IRD 70 and parses and stores the data in the user's hard drive. Upon execution, the DSCA program opens a connection to a standard serial port connected by a cable modem to the low speed port of IRD 70. It will then enable IRD 70 to send and monitor continuous data sent from the IRD. The DSCA program is installed to launch at startup.

Referring to Figure 6, data received from the serial port 160 of IRD 70 is stored in files residing on the user's hard drive for later retrieval by the user. The data received from IRD 70 is in the form of framed files. Received data is first stored in a temporary file. Each file includes a Cyclic Redundancy Code (CRC) that is checked to verify that the contents are correct. If the CRC is incorrect, the data is discarded.

20 The DSCA program extracts the path, the file name, the date stamp and the file type from the header of each file. The path and file name define a location relative to the "base" directory path on the user's PC. The user's base directory path is saved in the Windows Registry at installation.

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The date and time stamp are used to determine if the file has already been received that day and need not be replaced. If the file does not already exist, then any required post-processing indicated by the file type such as directory deletion or link fix ups, will be performed and the file will be removed to its proper location.

Data received from the IRD data port is framed. Framing involves adding characters to the data to insure that the data is received accurately. Each file that is sent is framed individually, although the files may be broken into smaller frames to increase data transfer reliability. The general layout of a frame is:

<start sequence><file header><file data><end sequence><crc>

The <start sequence> is an ASCII control character sequence <DLE><STX>. <DLE> represents the ASCII Data Link escape character whose decimal value is 16. <STX> is the ASCII Start of Text character, decimal value 2.

The <file header> consists of the file name, timestamp and message type separated by semicolons.

The <file data> is the binary file data contents of the file being sent. Since the file data is binary, it is possible that the <DLE> character exists within the data, and if paired with the <STX> or <ETX>, could give a false framing signal. To

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prevent this, the binary data in the file is scanned and if a
 <DLE> is found, it is replaced with the sequence <DLE><DLE>.
 Only the original <DLE> is used in the CRC calculation.

The end sequence is the ASCII control character sequence
 <DLE><ETX>. <DLE> represents the ASCII Data Link escape
 character whose decimal value is 16. <ETX> is the ASCII end of
 Text character, decimal value 3.

<crc> is the cyclic Redundancy Code calculated at the
 transmitting end. It is a two-character sequence,
 <CRC_HIGH_BYTE><CRC_LOW_BYTE>. These are binary values. The
 receiving end calculates the CRC of the data and compares it with
 the value sent by the transmitting end. The crc is calculated
 across all of the characters between the <start sequence> and the
 <end sequence> after redundant <DLE> characters have been
 removed.

Figure 7 refers to the upstream subsystem of the present
 invention. Here, the editor 10 selects certain information from
 the Internet 170, which is to be sent to end-users. This
 information could include television program guides, overseas
 newspaper headlines or news stories. Editor 10 uploads the
 information to DSC Server 20 at Data Service Center (DSC) 15.
 DSC server 20 is preferably a 400 MHz, NT PC. The information is
 then sent via T1 terrestrial line 30 to CBC 40.

Figure 8 illustrates the upstream subsystem of the present

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invention in greater detail. Included in this subsystem are three servers. Information is obtained from the Internet 170 via a T1 line 190 to a DSC Editor Content Server (ECS) 200. Editor 10 builds the service contents on ECS 200. Web Site development software tools such as FRONTPAGE® and NETSCAPE EDITOR are installed on ECS 200. DSC Application Development and Source Control Server (ADSCS) 210, preferably a 450 MHz, 128 MB RAM NT machine, processes and formats the Internet information. ADSCS 210 includes off-the-shelf software applications such as MS Visual Studio Enterprise Edition (v6.0) with a C++ and VB compiler, and SourceSafe; Borland C Compiler version 4.5; InstallShield version 5.5; and Microsoft Access.

The information is then sent to DSC Server 20, which transmits the information via T1 terrestrial line 30 to CBC 40. DSC Server 20 includes several Windows applications each having a Graphical User Interface (GUI). An Uplink Parser application allows the editor to search and replace text strings on selected files or subdirectories. An Uplink Carousel Builder application (UpBuild) is the content editor's interface into the system. UpBuild is written in Visual Basic version 6.0 and utilizes ActiveX Data Objects for access to Microsoft Access compatible databases. The target platform is Windows NT 4.0.

The UpBuild application allows the editor to enter filenames and related file properties into a carousel database. Data

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entered into the fields of the carousel database determine which files will be transmitted. The carousel database is built by a Carousel Builder application and read by the Uplink Carousel Manager application.

5 The Uplink Carousel Manager application (UpCarouselMgr) is responsible for sending data files to the user's PC over the satellite data services port. UpCarouselMgr reads the carousel database for information about which fields should be sent over the satellite network and then adds header information and frames the data so that it can be reliably and accurately transferred. UpCarouselMgr is written in Visual Basic and utilizes Active Data Objects (ADO).

Figure 9 shows the broadcasting subsystem architecture of the present invention. Once the Internet information has been obtained, edited and processed, it is sent, via T1 terrestrial link 30, to the Central Broadcasting Center 40. The information is transmitted to a specific port of a DIU belonging to whatever transponder (USPS) is being used to broadcast data. The interface to the DIU is an RS-232 line.

20 On the USPS, a channel is allocated as follows:
RATE: 10,000
STATE: Active
APF: 10
25 PROTOCOL: RS-232
PARITY: None
START BITS: 1
WIDTH: 8
BAUD: 4800

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A viewer channel is created that "points" to the appropriate SCID and has the proper transponder number. The channel has an SPI of 0 with 2 explicit SCIDs; one with S typed of 13 (continuous data) and SCID#X and the other with an audio S type 5 with SCID# X+1. A PAD is sent for the appropriate SCID. A service ID is given to the channel that is correct for the CAM. PAD flag is set to "12".

Steps that must be undertaken in order to pair internet data with corresponding-content video channels include:

- selection of a SCID#
- selection of BOC/VC
- determine what existing video programming to use to attach the data onto; this will affect BOC and SCID assignments, as well as service IDs
- selection of CSS Bits/CSS number of data
- mapping of data BOCs to appropriate CAUS's that correspond to the transponders being used

The downstream subsystem of the present invention, as shown in Figure 2, includes the user's antenna receiver satellite dish 60, the IRD 70 connected to the satellite dish, and the user's viewing device, typically a PC or PDA 80. The present invention allows for Internet data to be transmitted via a satellite network and arrive at the user's IRD to be viewed at his or her PC, without the need for a modem connection. The information is

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automatically stored in the PC's hard drive.

The IRD typically has two connections in its back. One is a telephone jack, which the user can use to hook up to a telephone line. The other connection is a low speed serial port. The common practice has been to use the serial port of the IRD for debugging purposes only and not for data transfer. The present invention utilizes this serial port in a unique fashion. A PC or PDA can be connected to the IRD via this serial port. Internet-content can be viewed on the user's PC via this serial port connection.

Although typically limited to a data rate of approximately 4800 bits per second (4.8 kbps), the serial port does allow for a constant seamless stream of information in the form of newspaper headlines, news summaries, stock quotes and various links. IRDs may be designed to accommodate faster data transfer, as high as 115,200 bps.

In addition to the Web page being transferred to the user, the server code also transfers additional Web information in the form of hyperlinks. A plurality of links are sent along with the Web page, further giving the user the impression that they he or she is connected to an interactive Internet system.

In an alternate embodiment of the present invention, in lieu of internet data, program guide information, representing, advanced television listings, is selected, organized and injected

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into the satellite network data stream.

Figure 10 shows a slightly modified architectural structure from the network of Figure 1. Figure 10 includes Content Repositories 220, within one or more Repository Broadcast Centers (RBCs) 240, usually situated within the user's geographic region, and contain editors 230 which prepare program guide data information as many as thirty days in advance. CBC 40 can also formulate the program information. These schedules are transmitted to DSC server 20 at DSC 15 in Microsoft Access (MDB) format.

The process is repeated once per day as new program guide information is received from CBC 40 or RBCs 240. The formatted program guide information then travels through the network as described earlier for HTML-formatted information.

In Figure 11, a guide database 250 is created at DSC 15. A program guide editor 12 is responsible for verifying the content of the program guide information received from CBC 40 and RBCs 240. Software running on DSC server 20 converts the program guide information to a format used by the program guide client software, via a Program Guide Data Formatter Module 260. Module 260 converts the program guide information into guide program files 270. The files contain information about a program such as the time it is being broadcast, the channel it is broadcast on, and a detailed description of the program. Guide files 270 then

travel through the normal data stream to reach the user's viewing device.

Figure 12 includes module 280, a Guide-Delete File Formatter. Module 280 is an application that provides editor 12 with a convenient GUI to generate a "guide-delete" program guide file 290. A file of this type contains a single date that indicates which programs in database 250 should be considered outdated and subsequently removed. If a television program's end date is earlier than the specified date in guide-delete file 290, the television is removed from database 250.

Figure 13 shows the architecture for the program guide implementation, focusing upon the client subsystem, downstream from the satellite-network architecture, shown as 350. Two dynamic link libraries and a Client Display Component (CDC) 300, are seen in Figure 13. Referring to Figure 13, CDC 300 represents a collection of Dynamic HTML/JavaScript pages hosted within the Web browser to display the program guide. They provide the functionality for the user to select which time frame they wish to view the schedule over, and to get a detailed description of a particular program.

Guide module 310 is responsible for separating an unframed guide file 320 into a collection of programs and placing these programs in guide database 250. Guide Delete module 330 parses an unframed guide-delete file 340 and removes outdated programs

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from guide database 250. Information is considered outdated if the program's ending date is earlier than the date specified in guide-delete file 340. Module 330 also removes expired guide files 320 and guide-delete files 340 from the directory they reside in on the user's viewing device.

Figure 14 illustrates the overall subsystem architecture of the program guide implementation of the present invention. RBCs 240 transmit their existing program guide databases 250 to DSC 15 preferably once per day. There, the Program Guide Data Formatter program converts RBC-formatted program guide databases into content compatible with conventional Internet-formatted data. The program guide files 270 are transmitted to CBC 40 with other information such as downloaded Internet data, and uplinked to one or more satellites 50. The user therefore receives advanced television program listings on his viewing device 80, via the broadcast downlink to antenna 60, IRD 70 and serial connection 90.

Each guide file 270 contains approximately 6 hours worth of programming information. Several hundred guide files 270 are transmitted periodically to the user to provide up to one month of advanced television schedule information. Again, the user receives this information on his or her viewing device via serial transmission by utilizing the low speed serial data port of the IRD.

5 one hour back or one hour forward via button 390. Similarly, button 400 can offset the schedule by one day, and button 410 can be used to obtain schedule listings one week earlier or one week later than the current date.

The instant invention has been shown and described herein in what is considered to be the most practical and preferred embodiment. It is recognized, however, that departures may be made therefrom within the scope of the invention and that obvious modifications will occur to a person skilled in the art.

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CLAIMS

What Is Claimed Is:

1. A DSS terrestrial-satellite communications network for delivering information to a viewing device without the need for a user to possess additional communications hardware, the network comprising:

means for selecting, acquiring and editing certain information;

a first network computer having memory storage means for storing said information;

a central network computer;

means for transmitting the information from said first network computer to said central network computer;

one or more communication satellites for receiving and transmitting broadcast signals;

uplink means coupling the information from said central network computer to said satellites in the form of said broadcast signals;

downlink means coupling said broadcast signals from said satellites to a receiving antenna situated within said satellite's coverage area;

an IRD connected to said receiving antenna;

said viewing device connected to said IRD via a low-speed serial data port to receive the information, said viewing device

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containing means for displaying the information on said viewing device; and

a memory storage device situated within said viewing device.

5 2. The network of claim 1 wherein said viewing device is a personal computer.

3. The network of claim 1 wherein said viewing device is a PDA.

4. The network of claim 1 further comprising means for automatically storing said information in said memory storage device.

5 5. The network of claim 1 wherein said broadcast signals further comprise audio and video DSS signals bundled with the information, said audio and video signals corresponding to a selected television channel.

20 6. The network of claim 5 wherein said IRD further comprises means for extracting the information from said broadcast signals.

7. The network of claim 6 wherein the information is

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related to the subject matter of said selected television channel, thereby eliminating the need for separate channel allocation for broadcasting of the information.

5 8. The network of claim 1 further comprising a second network computer for processing, formatting and storing said information.

9. The network of claim 1 wherein the information comprises television program guide data.

10. The network of claim 9 wherein said program guide data is compiled at one or more repository broadcast centers situated at a location remote from said first network computer, and transmitted to said first network computer.

11. The network of claim 10 wherein said program guide data comprises television program information for an entire channel over the course of a predetermined number of hours.

12. A DSS terrestrial-satellite internet communications network for delivering HTML-formatted information retrieved from the internet to a viewing device without the need for a user to possess additional communications hardware, the network

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comprising:

means for selecting, acquiring and editing certain HTML-formatted information retrieved from the internet;

5 a first network computer having memory storage means for storing said information;

a central network computer;

means for transmitting the information from said first network computer to said central network computer;

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0 one or more communication satellites for receiving and transmitting broadcast signals;

uplink means coupling the information from said central network computer to said satellites in the form of said broadcast signals;

15 downlink means coupling said broadcast signals from said satellites to a receiving antenna situated within said satellite's coverage area;

an IRD connected to said receiving antenna;

20 said viewing device connected to said IRD via a low-speed serial data port to receive the information, said viewing device containing means for displaying the information on said viewing device; and

a memory storage device situated within said viewing device.

13. The network of claim 12 wherein said viewing device is

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a personal computer.

14. The network of claim 12 wherein said viewing device is a PDA.

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15. The network of claim 12 further comprising means for automatically storing the information on said viewing device's memory storage device.

16. The network of claim 12 wherein said means for displaying said information comprises a browser.

17. The network of claim 12 wherein said broadcast signals further comprise audio and video DSS signals bundled with the information, said audio and video signals corresponding to a selected television channel.

18. The network of claim 17 wherein said IRD further comprises means for extracting the HTML-formatted information from said broadcast signals.

19. The network of claim 18 wherein the information is related to the subject matter of said selected television channel, thereby eliminating the need for separate channel

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allocation for the broadcasting of the information.

20. The network of claim 12 further comprising a second network computer for processing, formatting and storing said information.

21. The network of claim 12 wherein the information further comprises television program guide data.

22. The network of claim 21 wherein said program guide data is compiled at one or more repository broadcast centers situated at a location remote from said first network computer, and transmitted to said first network computer.

23. The network of claim 22 wherein said program guide data comprises television program information for an entire channel over the course of a predetermined number of hours.

24. An IRD incorporated into a DSS terrestrial-satellite communications network, said IRD capable of transmitting received satellite-broadcast signals including data information, said IRD comprising:

- a first port to provide linking means to a television; and
- a second port to provide linking means to a viewing device,

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wherein said linking means is a low-speed serial data port capable of transferring the information to said viewing device without the need for a user to possess a dedicated telephone line or a modem.

5 25. The IRD of claim 24 wherein said broadcast signals comprise audio and video signals bundled with the information.

26. The IRD of claim 24 wherein said viewing device is a personal computer.

27. The IRD of claim 24 wherein said viewing device is a PDA.

28. A method for delivering information to a viewing device via a terrestrial-satellite communications network without the need for a user to possess additional communications hardware comprising the steps of:

selecting, retrieving and storing information on a first network computer;

20 transferring said information to a central network computer where said information is stored;

uplinking said information from said central network computer to one or more said satellites in the form of a broadcast signal;

downlinking said broadcast signals from said satellites to a

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receiving antenna connected to an IRD;

transmitting said information from said IRD to said viewing device, said viewing device connected to said IRD via a low speed serial data port, said viewing device further including a memory storage device; and

displaying said information on said viewing device via displaying means.

29. The method of claim 28 further comprising the step of automatically storing said information on a memory storage device situated within said viewing device.

30. The method of claim 28 wherein said broadcast signals comprise audio and video signals bundled with said information, said audio and video signals corresponding to a selected television channel.

31. The method of claim 30 further comprising the step of extracting the information from said broadcast signal.

32. The method of claim 31 wherein the information is related to the subject matter of said selected television channel, thereby eliminating the need for separate channel allocation for the broadcasting of said information.

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33. The method of claim 32 wherein the information comprises HTML-formatted data retrieved from the internet.

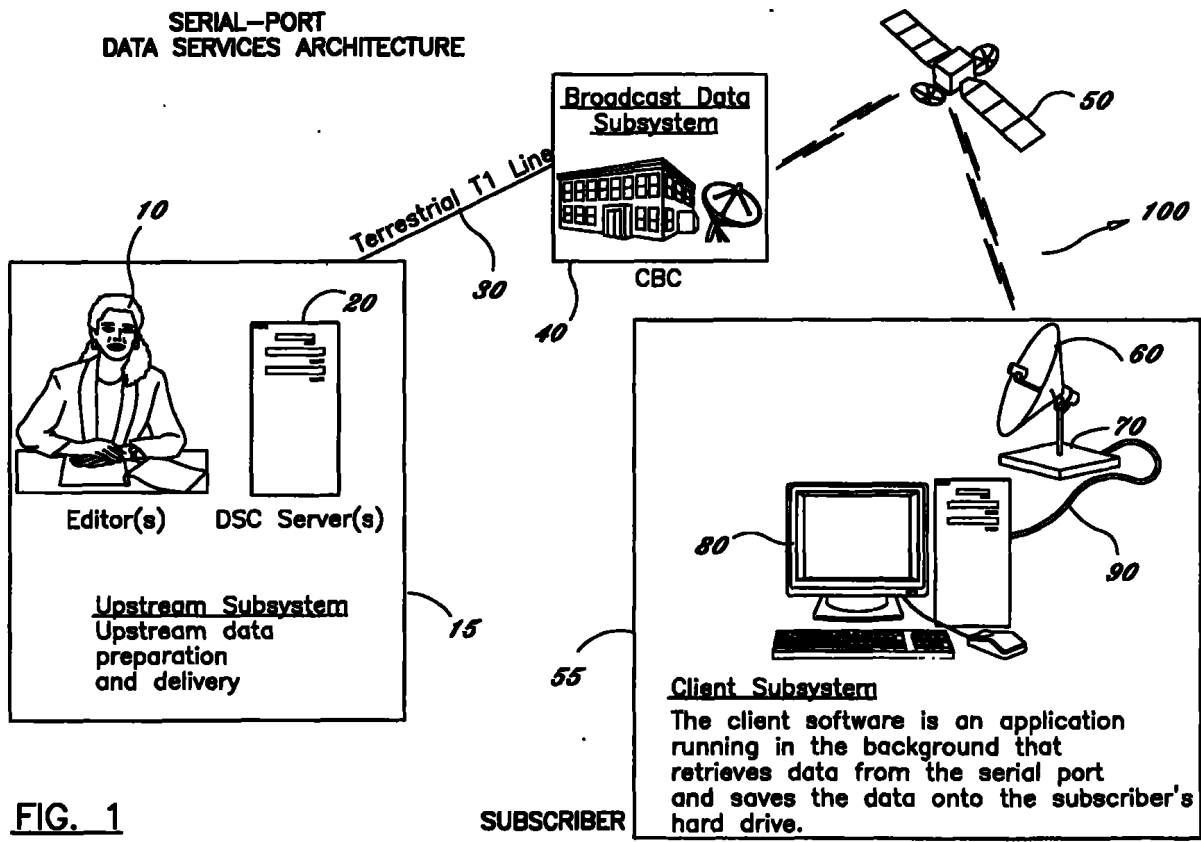
5 34. The method of claim 33 wherein said displaying means comprises a browser.

35. The method of claim 28 wherein the information comprises television program guide data.

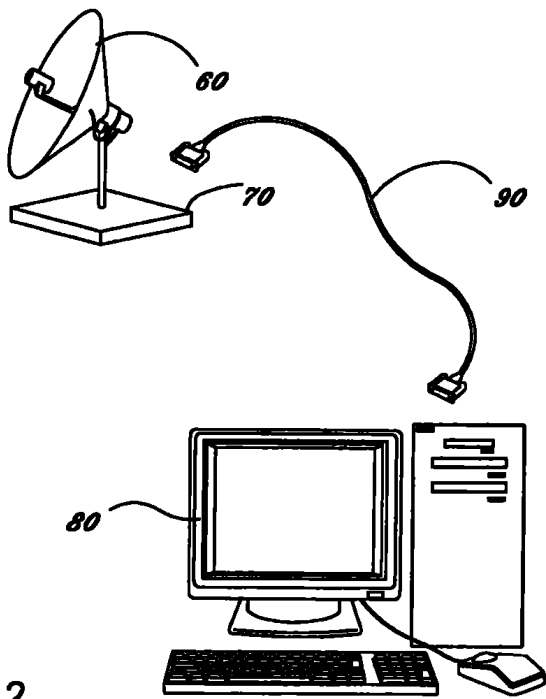
36. The method of claim 28 wherein the information comprises television program guide data and HTML-formatted information retrieved from the internet.

37. The method of 36 wherein said program guide data is compiled at one or more repository broadcast centers situated at a location remote from said first network comp

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CLIENT ARCHITECTURE OVERVIEW



Data Services
Installation CD-ROM



Install Program
Uninstall Program
Communication Agent

FIG. 2

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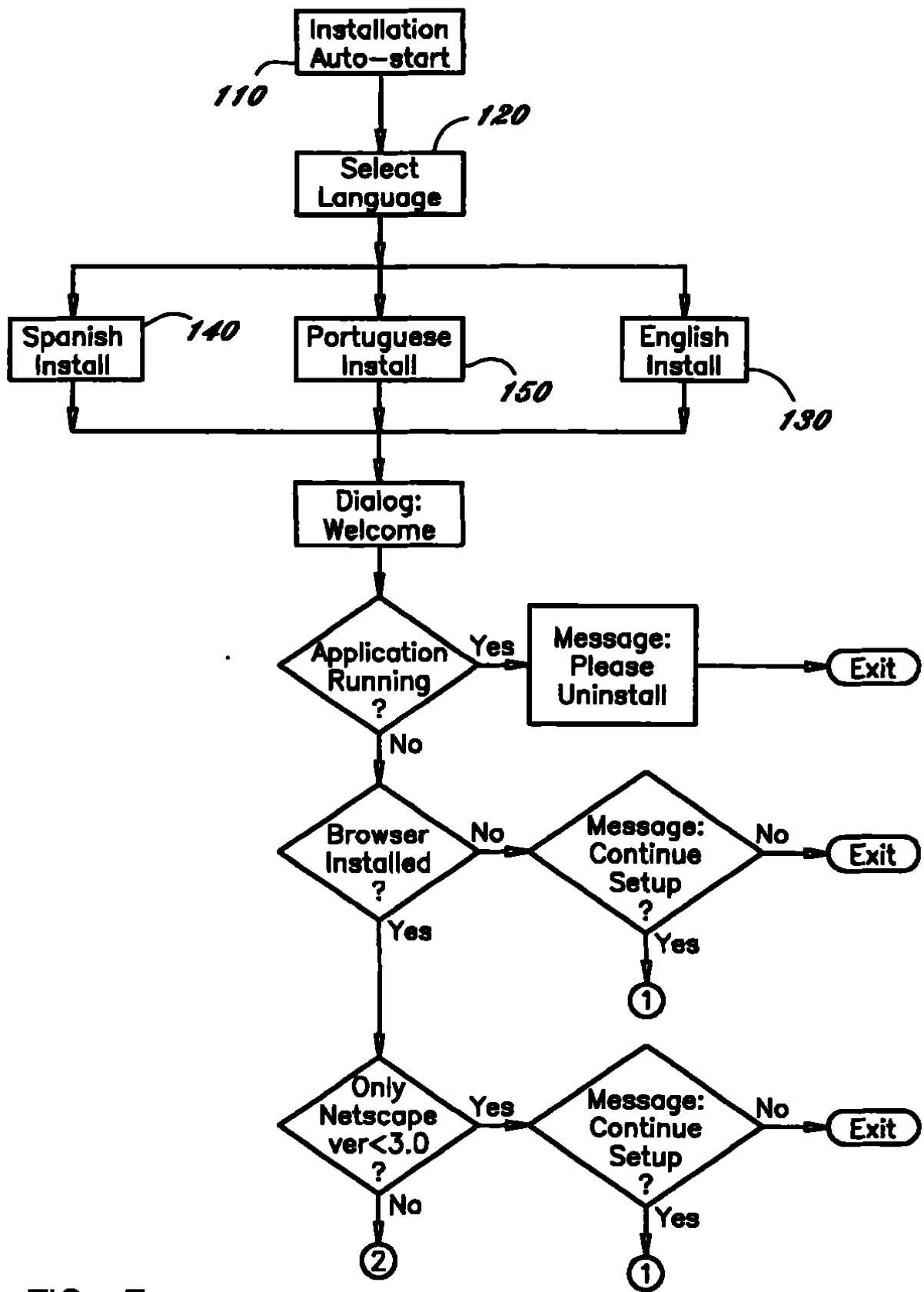


FIG. 3

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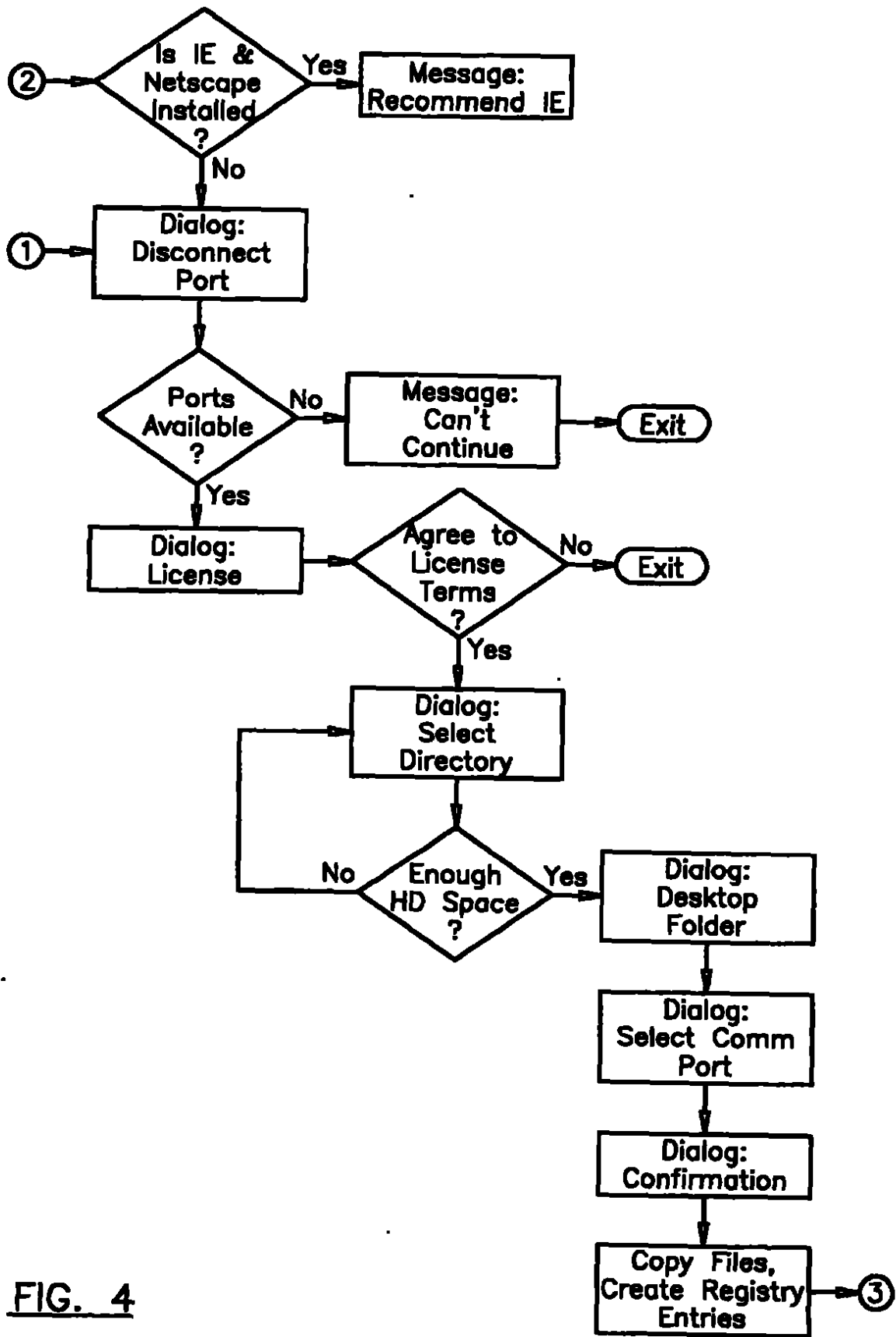


FIG. 4

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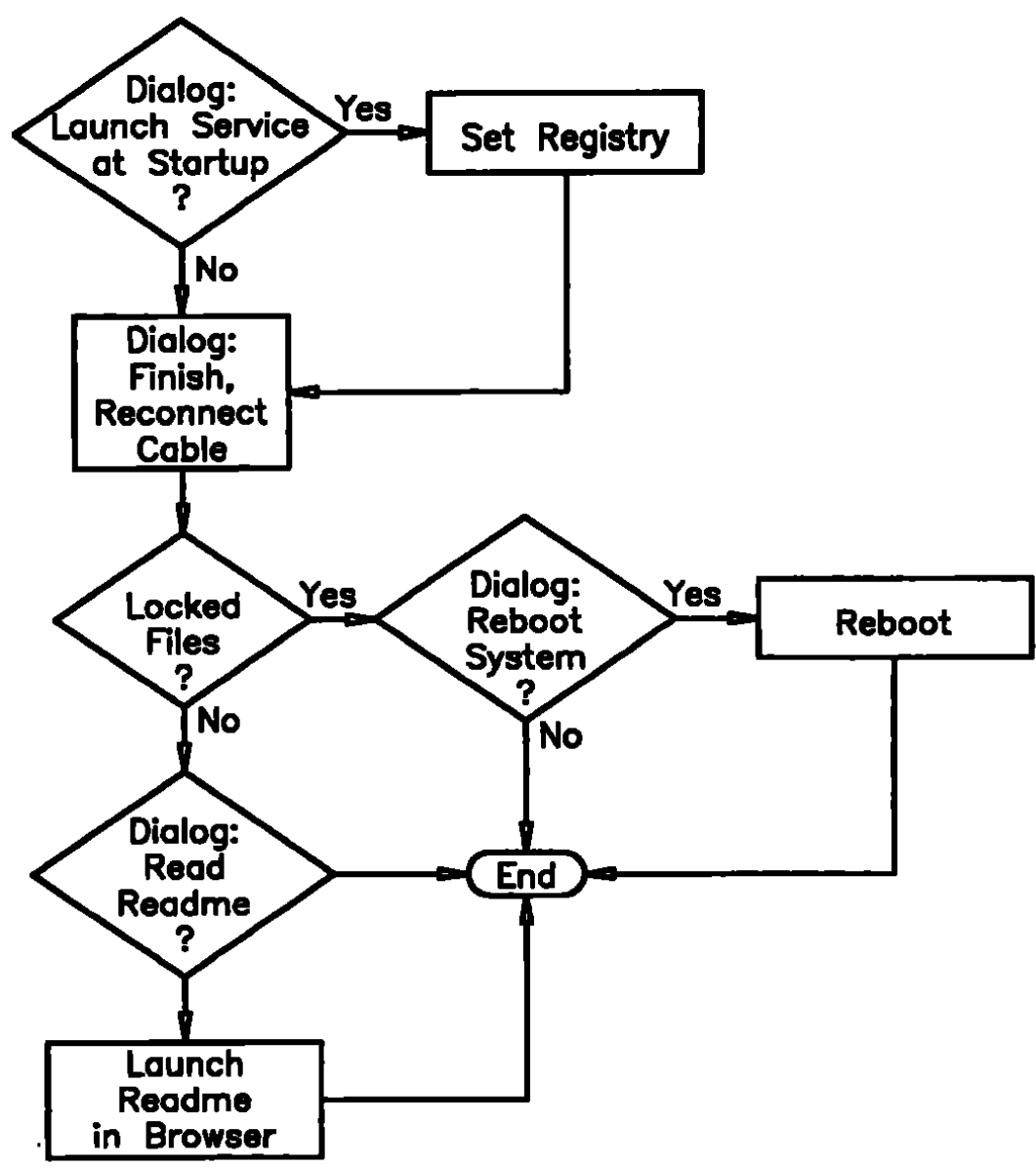


FIG. 5

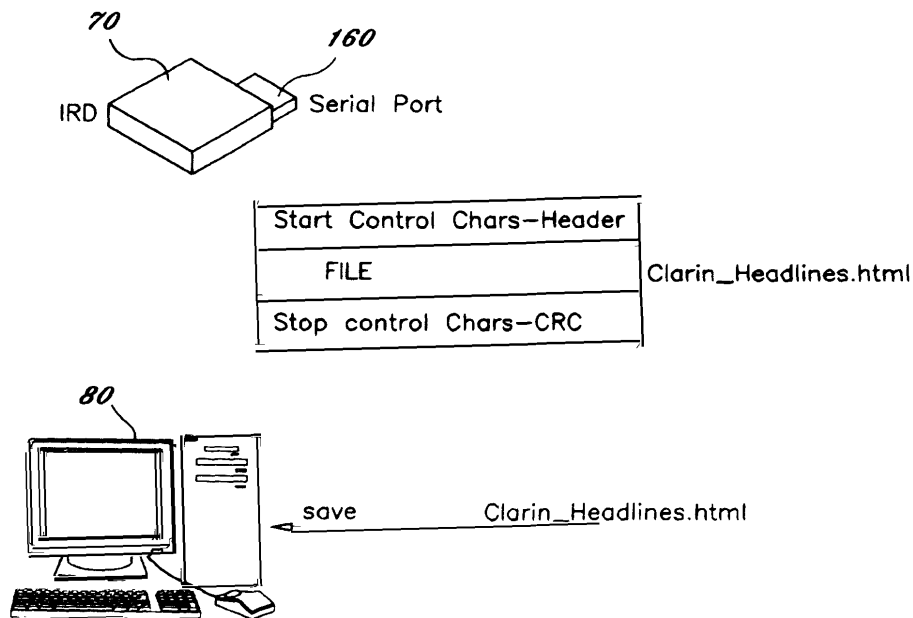
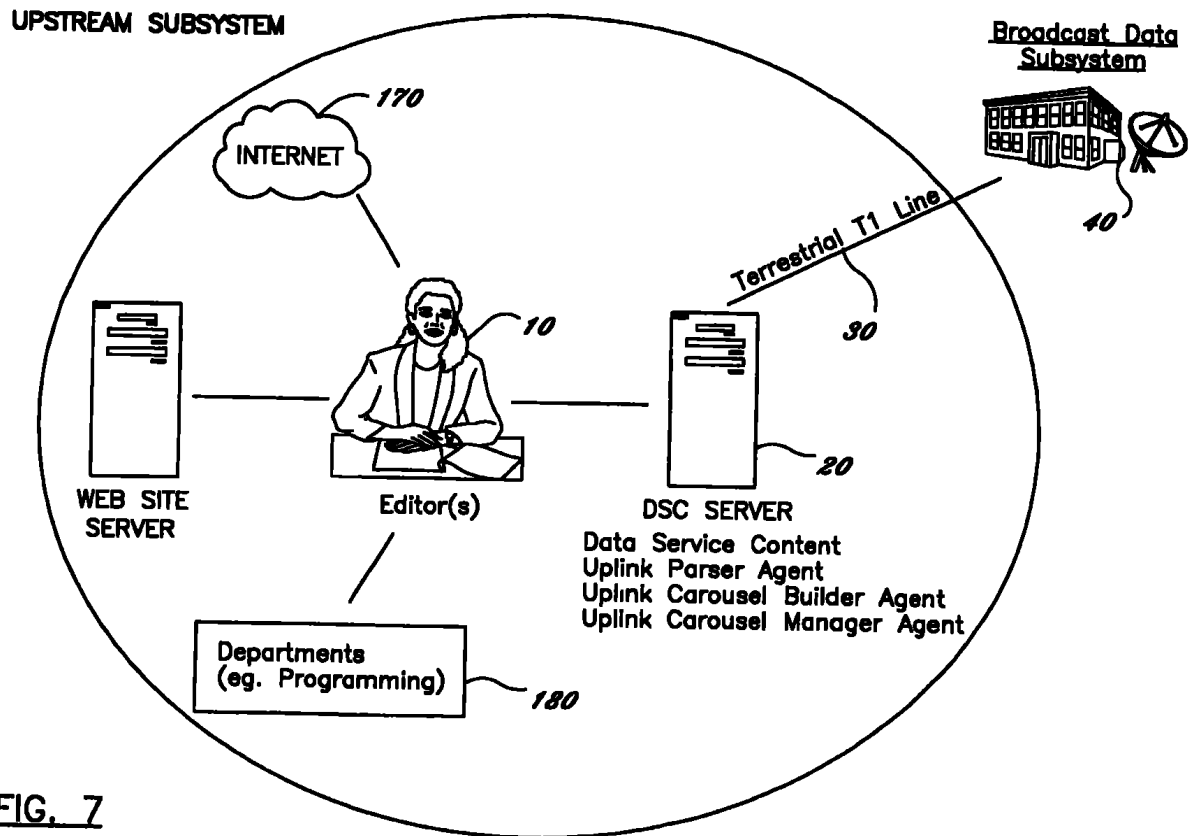


FIG. 6

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UPSTREAM SERVER HARDWARE

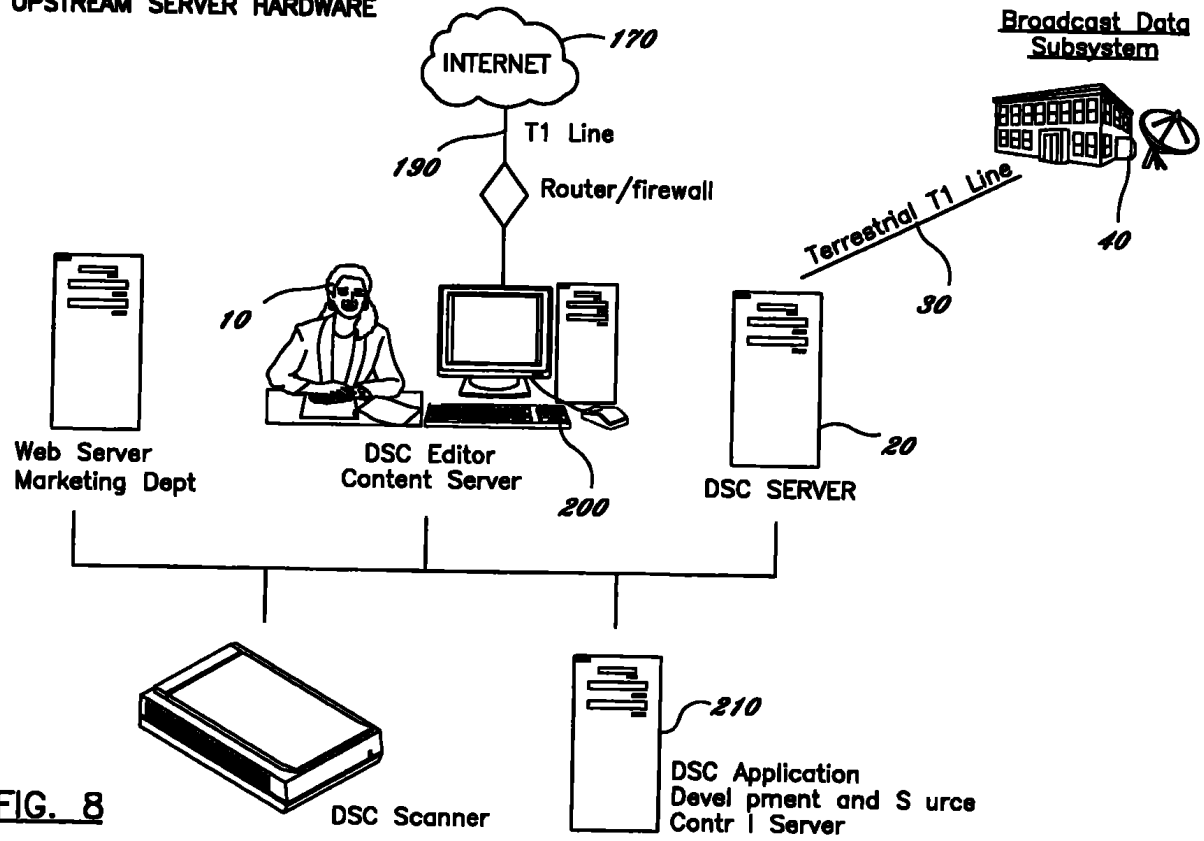


FIG. 8

BROADCASTING SUBSYSTEM ARCHITECTURE

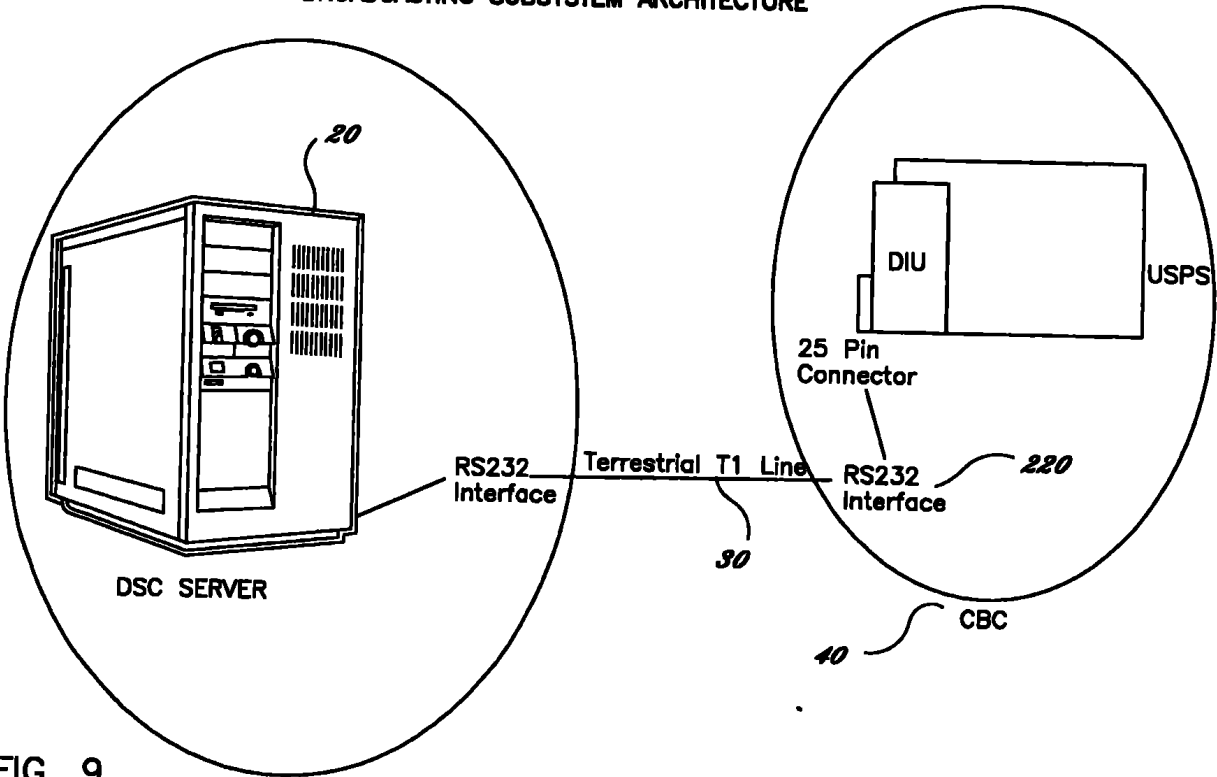
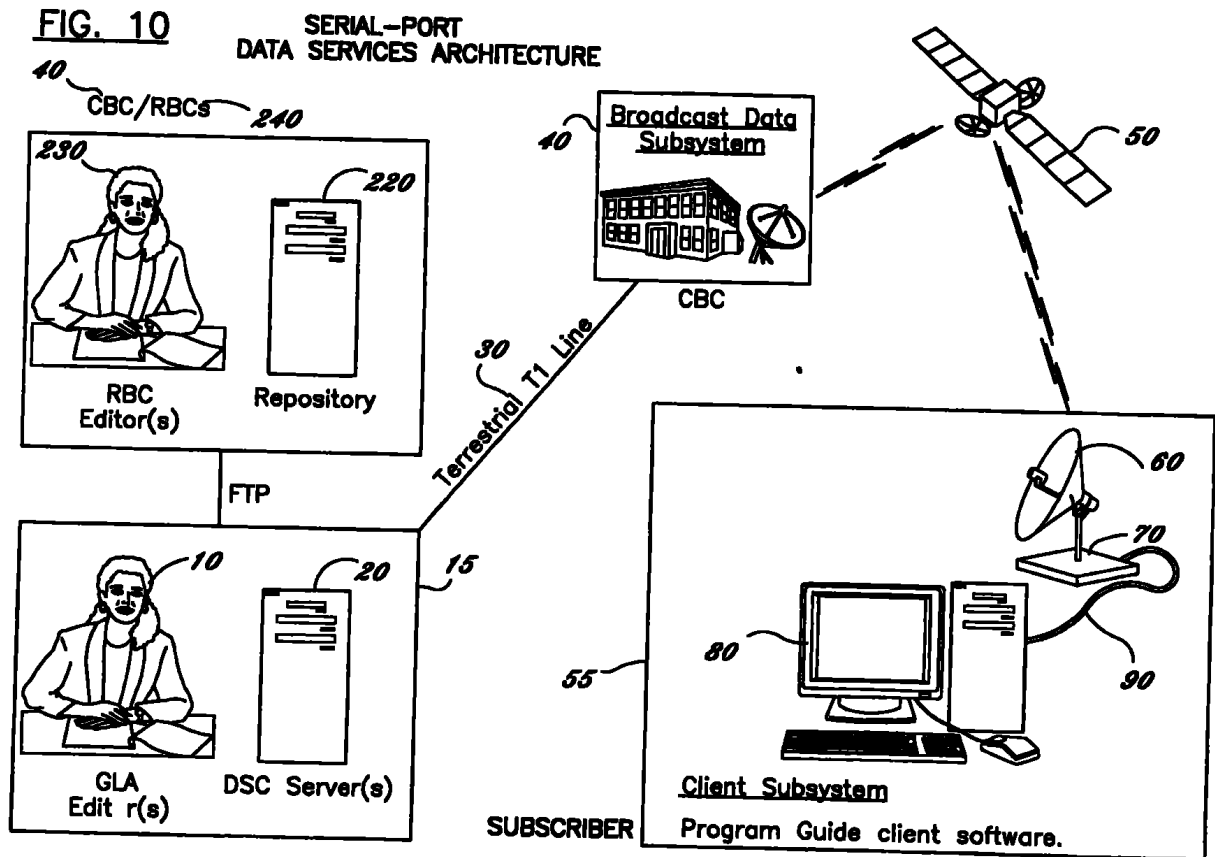


FIG. 9

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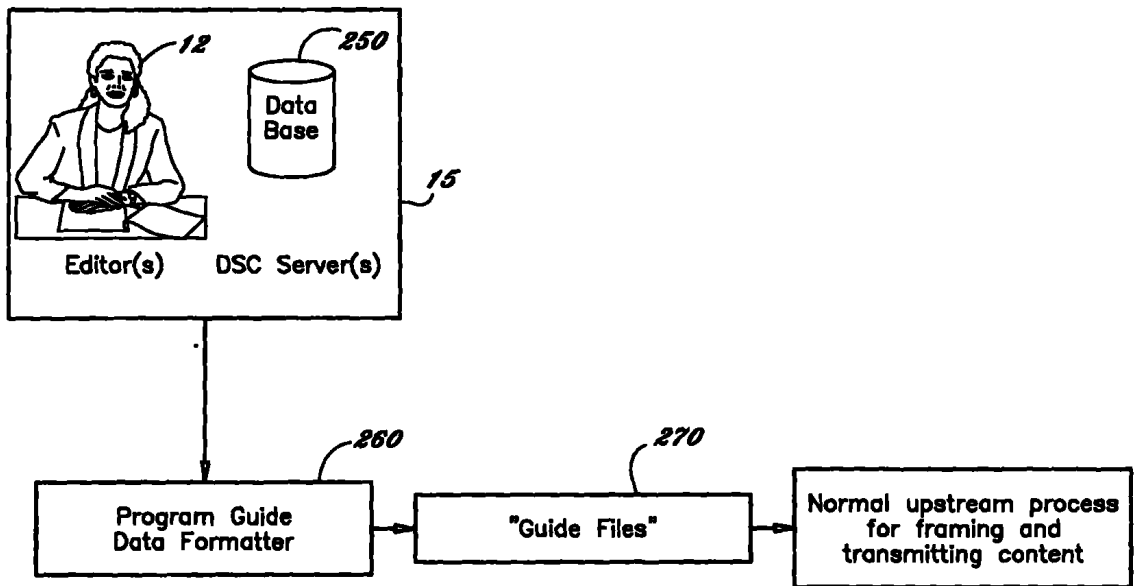


FIG. 11

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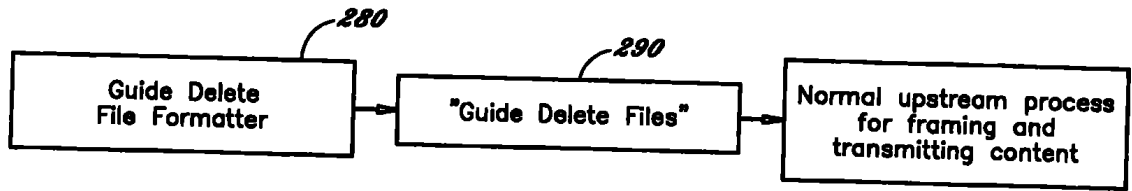


FIG. 12

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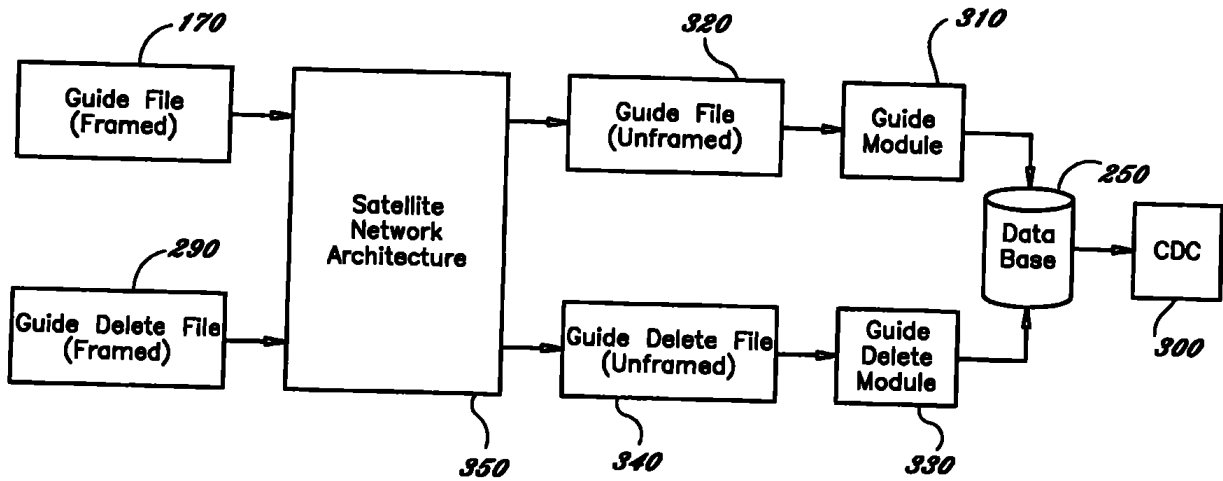
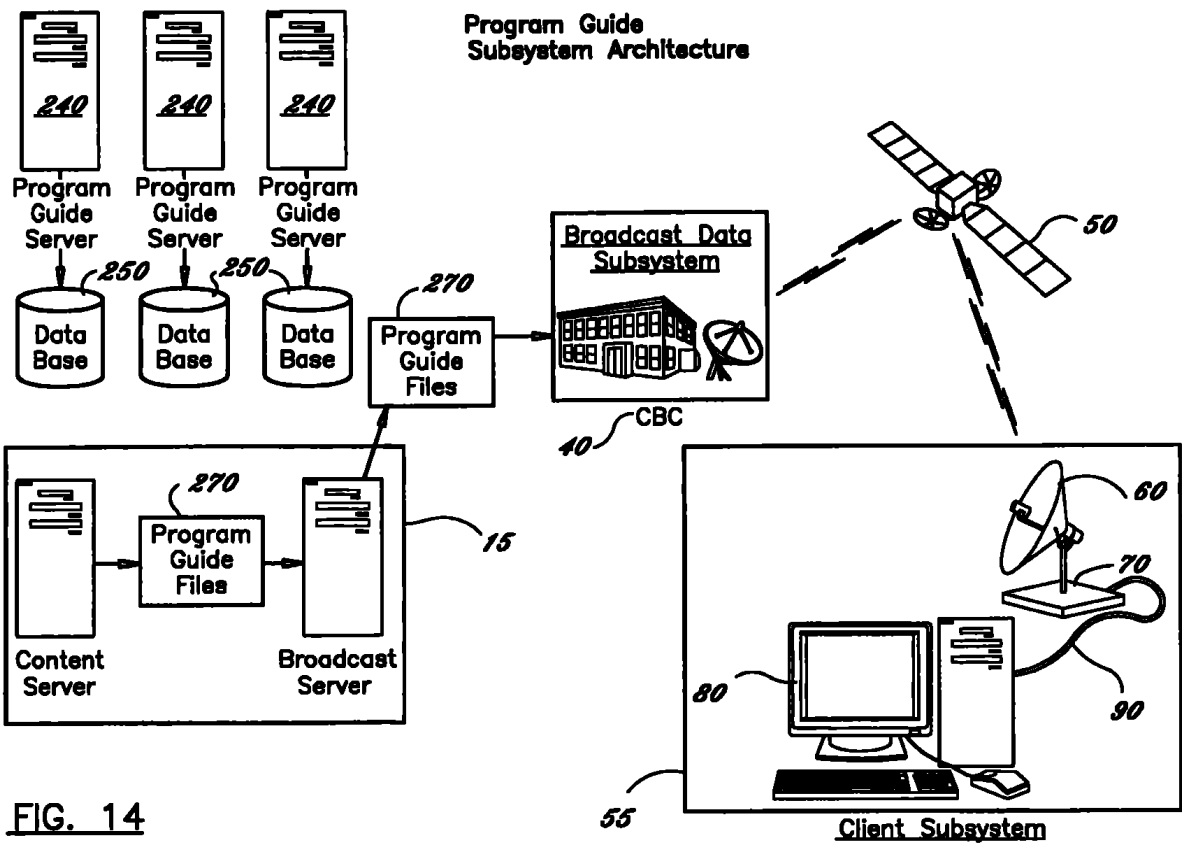


FIG. 13

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Δ Week	Δ Day	Δ Hour	10:00 AM	Sun, Aug 1	"Show Me"
	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 AM
110	Sports Night	3rd Rock from the Sun	That 70's Show	Friends	Baywatch ▷
113	Gems Jamz		TV Time	Show Business	Cine Cantinas ▷
122	Segunda Edicion	Tierra Adentro		Vida Silvestre	
144	◁ Style	Flashback	Cult	Perspective Weekly	International
156	Journal with Interview	Germany Today	Journal Mit Politbarometer	Anger in Paradise	Journal with the Week

FIG. 15

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2do. EXAMEN DE FORMA PATENTE DE INVENCION

Folio  205

Radicación no 01-33030

Concepto Técnico no 554 Clasificación Internacional de Patentes: G 06 F 13 / 00

Practicado el examen de acuerdo a lo establecido en el Art. 38 de la Decisión 486 se determinó que esta solicitud de Patente de Invención:

- | | | |
|--|--|---|
| SI ☒ | NO ☐ | Contiene un resumen de la invención (Art.26-e). |
| SI ☒ | NO ☐ | Contiene el título o nombre de la invención (Art.27-d). |
| SI ☒ | NO ☐ | Contiene la descripción de la invención (Art.26-b). |
| SI ☒ | NO ☐ | NO ES APLICABLE ☐ Contiene los dibujos necesarios para comprender la invención (Art.26-d) |
| SI ☒ | NO ☐ | Contiene una o más reivindicaciones. (Art.26-c). |
| SI ☐ | NO ☐ | NO ES APLICABLE ☒ Han sido desarrollados los productos y/o procedimientos a partir de recursos genéticos o de sus productos derivados de los que cualquiera de los Países Miembros es país de origen. (Art. 26- h). |
| SI ☐ | NO ☐ | NO ES APLICABLE ☒ Los productos y/o procedimientos han sido obtenidos o desarrollados a partir de los conocimientos tradicionales de las comunidades indígenas, afroamericanas, o locales de los países miembros, de acuerdo a lo establecido en la Decisión 391 y sus modificaciones y reglamentaciones vigentes.(Art.26-i). |
| SI ☐ | NO ☒ | La invención se refiere a un producto relativo a un material biológico. (Art.26-j). |
| SI ☒ | NO ☐ | La prioridad coincide con la materia reivindicada. |
| SI ☒ | NO ☐ | CUMPLE LOS REQUISITOS TÉCNICOS |

OBSERVACIONES Y OTROS: SI ☒ NO ☐ ver hoja(s) anexa(s).

1. Anexa documento en que consta la cesión del derecho a la patente otorgado por el inventor al solicitante, a partir del folio No. 55.
2. Anexa copias certificadas de las solicitudes estadounidenses No. 60/200,473 de Abril 28 de 2000, 60/201,039 de Mayo 1 de 2000 y 09/733,229 de Diciembre 7 de 2000 a partir del folio No. 64.
3. Anexa comprobantes de pago por invocación de dos (2) prioridades a partir del folio No. 52.

EXAMINADOR TÉCNICO
202047

Bogotá D. C. Marzo 27 de 2003

Carrera 13 No. 27-00 Piso 5 y 10
Conmutador: 334 12 21-2-3-4
Fax: 281 31 25 e-mail: info@sc.gov.co
Santa Fe de Bogotá D.C. - Colombia

2020
Bogotá DC

Doctor
JERONIMO CASTRO BONILLA
Apoderado

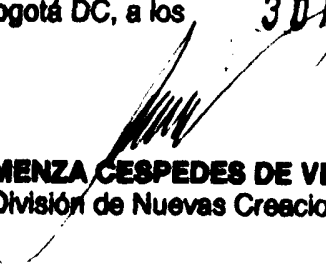
REFERENCIA:	Radicación No.	01-33030
	Trámite	002
	Evento	001
	Actuación	416
	Oficio No.	598
	Folios	001

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486 de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia, se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial, conforme lo establece el artículo 40 de la misma Decisión.

Cúmplase

Dado en Bogotá DC, a los

30 MAYO 2003


ALIX CARMENZA CESPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones