



Alternative Networks in EU Member States

Synoptic Tables

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Introduction

The following pages present a synthetic view of the telecom ventures initiated by alternative network providers, as identified by the ESIS national contractors.

The information is indexed by Member-State and for each initiative, the following data are provided :

- Company involved and its core business activity
- Name of the venture
- Other companies involved in the co-operation
- Description of the infrastructure
- Indication of the telecom services provided
- Possible involvement in the contents
- Targeted customer groups

Codes are as follows : Y for Yes, N for No, P for planned

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Austria

Company/Entity Sector		Mannesmann Telecommunications		Swisscom Telecommunications		Mannesmann Telecommunications	Kabelsignal Cable TV	TeleKabel Cable TV
Name of the telecom venture		Tele.ring		UTA		CityKom Austria	-	-
Major other companies involved	<i>Name</i>	Verbund	OBB	9 regional energy utilities		7 town utilities	Siemens (owner of Kabelsignal)	UIH (95%-owner of TeleKabel)
	<i>Activity</i>	Energy utility	Railway company	Energy		Energy	Electronics industry	Electronics industry
Infrastructure provided	<i>Coverage</i>	Nationwide		Nationwide		7 regions	Vienna-based	Vienna-based
	<i>Media characteristics</i>	Backbone (2700km opto-fiber)		Backbone (2000 km opto-fiber)	Regional networks	Town networks	Connected to end-users	Connected to end-users
	<i>Bandwidth</i>	-		2.4 Gbit/s	155Mbit/s	-	-	-
Services provided	<i>Voice services</i>	Y		Y		Y	P	P
	<i>Data services</i>	Y		Y		Y	-	-
	<i>Image services</i>	-		-		-	Y	Y
	<i>Management services</i>	-		-		-	-	-
	<i>Value-added services</i>	P : Internet		P : Internet		P : Internet	Y : Internet	Y : Internet
Contents provided		-		-		-	-	-
Customer targets	<i>Companies</i>	Y		Y		Y	-	-
	<i>Institutions</i>	Y		Y		Y	-	-
	<i>General public</i>	Y : voice services		Y : voice services		Y : voice services	P : voice services	P : voice services
Comments		Verbund and OBB both have their own telecom entity (V-Tel, OBB Tel)		-		Intends to become a full network provider	-	-

Belgium

Company/Entity Sector		AIESH CATV Operator	ALE-Teledis Cable TV operator	ALE-Teledis Cable TV operator	ALE-Teledis CATV operator
Name of the telecom venture				EPL-Net	ONR
Major other companies involved	Name	JV of municipalities ("Intercommunale pure")	TEC	Higher education Institutes and provincial administration	TPS (MoU)
	Activity	Public administration	Urban transportation	Education - Public Administration	Satellite TV
Infrastructure provided	Coverage	Subregional (Province of Hainaut)	Province of Liège	Province of Liège	Walloon region
	Media characteristics	Upgraded CATV to 450 MHz.	CATV operated Intranet	CATV operated Intranet	Fiber-optic ring, connected to end-users
	Bandwidth		-	-	-
Services provided	Voice services		Y	Y	-
	Data services		-	-	-
	Image services	Y			Y
	Management services				
	Value-added services		Y	Y	-
Contents provided					
Customer targets	Companies		-	-	-
	Institutions		P: administrations	P: administrations	-
	General public	Y			Y
Comments		Initiative limited to potential broadcasting of around 300 digital programmes	-	-	

Belgium

Company/Entity Sector		BRUTELE CATV operator	CODITEL Cable TV operator	IDEATEL CATV Operator
Name of the telecom venture		-	-	
Major other companies involved	Name	Joint venture of municipalities ("Intercommunale pure");	Has created a 50%-50% JV with WORLDCOM since mid-1997	Joint venture of municipalities ("Intercommunale pure")
	Activity	Public administration	CATV operator close to the TRACTEBEL Group	Public administration
Infrastructure provided	Coverage	32 cities (Province of Hainaut and Brabant)	Brussels	Subregional (Province of Hainaut)
	Media characteristics	100 km fibre-optic cable	32 km in length, connected to end-users	Upgraded CATV to 450 MHz.
	Bandwidth	-	-	
Services provided	Voice services	-	Y	
	Data services	Y	-	
	Image services	Y	Y	Y
	Management services	-		
	Value-added services	Y : Internet, videoconferencing, multimedia	-	
Contents provided				
Customer targets	Companies	-	Y	
	Institutions	P: administrations & healthcare	-	
	General public	Y	Y	Y
Comments		<i>Has obtained an individual licence end 1997; Develops projects with Charleroi and its cultural institutions; Participates to CEDITI project</i>	<i>CODITEL is one out of 3 private companies running a CATV infrastructure. It has created a joint venture with WORLDCOM</i>	<i>Initiative limited to potential broadcasting of around 300 digital programmes</i>

Belgium

Company/Entity Sector		IGEHO CATV Operator	IVERLEK CATV Operator	SEDITEL CATV Operator
Name of the telecom venture				
Major other companies involved	Name	ELECTRABEL ("Intercommunale mixte")	ELECTRABEL ("Intercommunale mixte")	ELECTRABEL ("Intercommunale mixte")
	Activity	Utilities: gaz & electricity company	Utilities: gaz & electricity company	Utilities: gaz & electricity company
Infrastructure provided	Coverage	Subregional (Province of Antwerp)	Subregional (Leuven and surroundings)	Subregional (Province of Brabant Wallon & Hainaut)
	Media characteristics	Upgraded CATV to 450 MHz.	Leases lines at TVD and builds its own fiber network	Upgraded CATV to 450MHz.
	Bandwidth			
Services provided	Voice services			
	Data services		Y: Internet	
	Image services	Y		Y
	Management services			
	Value-added services		Y: Internet	
Contents provided				
Customer targets	Companies			
	Institutions			
	General public	Y	Residential users	Y
Comments		<i>Initiative limited to potential broadcasting of around 300 digital programmes</i>	<i>First competitor on CATV grounds ever</i>	<i>Initiative limited to potential broadcasting of around 300 digital programmes; Since 1995, broadcasts also radio programmes</i>

Belgium

Company/Entity Sector		SEDITEL CATV Operator	TVD-Radio Public Cable TV operator
Name of the telecom venture		Campus-Net	-
Major other companies involved	Name	ELECTRABEL ("Intercommunale mixte")	-
	Activity	Utilities: gaz & electricity company	-
Infrastructure provided	Coverage	Louvain-la-Neuve	7 cities in Brussels and the city of Leuven
	Media characteristics	Upgraded CATV to 450MHz.	Connected to end-users
	Bandwidth		-
Services provided	Voice services		-
	Data services		-
	Image services	Y	Y
	Management services		-
	Value-added services	Y: Internet access for UCL members only	Y : Internet trials since 1.9.97
Contents provided			
Customer targets	Companies		-
	Institutions		-
	General public	Y	Y
Comments		<i>Initiative limited to potential broadcasting of around 300 digital programmes; Since 1995, broadcasts also radio programmes</i>	
		<i>One out of 3 private companies running a CATV infrastructure; Since 1995, broadcasts also radio prog.; Demand introduced for an individual licence in 1997; vocal telephony for 1.1.98</i>	

Belgium

Company/Entity Sector		WOLU-TV CATV Operator	ACM Cable TV operators	City of Antwerp Public administration
Name of the telecom venture			ACM - Application Cable Multimédia	Digital Metropol Antwerp (DMA)
Major other companies involved	Name		10 CATV Companies + Crédit Communal (Bank), SMAP (Insurance), SRIW (Public Investor)	Telepolis, OCMW (Social Welfare), CIPAL
	Activity		Various	Various
Infrastructure provided	Coverage	Subregional (Brussels)	Walloon region	City of Antwerp, harbour and Province
	Media characteristics	CATV	900 Km of CATV infrastructure; Connected to end-users	65 km fiber-optic network
	Bandwidth		-	-
Services provided	Voice services		-	Y
	Data services		Y	Y
	Image services		Y	-
	Management services		-	-
	Value-added services		Y	Y
Contents provided				
Customer targets	Companies		-	-
	Institutions		-	Y : Administrations
	General public		Y	Citizens
Comments		WOLU-TV is one out of 3 private companies running a CATV infrastructure	Is finalising an agreement with Canal + Belgique to offer a full digital TV bouquet in November 1998	An awarded "cyber-town"; has concluded a MOU with TELENET & launched a new major project "VISTA"

Belgium

Company/Entity Sector		ASTRID	CODENET	HERMES RAILTEL
		Radiocommunication operator	Data transmission	Carrier's carrier
Name of the telecom venture		ASTRID	CODENET & TRASYS	HERMES RAILTEL
Major other companies involved	Name	KNT Consortium: Kreutler - Nokia - Telindus	Part of the ELECTRABEL Group	11 european railway companies including the belgian SNCB
	Activity	Telecom sector	Gas, Electricity, Environment, Engineering, etc	Railways
Infrastructure provided	Coverage	National	Belgium and Luxembourg	Europe
	Media characteristics	National TETRA ntwork	National Network (32 nodes)	Fiber backbones between major cities. By mid 97: Amsterdam-Brussels backbone at 2.4 Gb
	Bandwidth	-	34 Mb	2.4 Gb
Services provided	Voice services	Y	Y	
	Data services	Y	Y	
	Image services	Y	Y	
	Management services	Y	Y	
	Value-added services	Y	Y	
Contents provided				
Customer targets	Companies		Y	Y
	Institutions	Y: Emergency and security services	Y	Y
	General public			
Comments				Has passed carrier agreements with COLT Telecom

Belgium

Company/Entity Sector		ONR / TPS Broadcasting	SNCB Railway company	TELENET CATV + Optic fiber
Name of the telecom venture		ONR / TPS	(project)	TELENET
Major other companies involved	Name	ALE-TELEDIS; C&CB Network; MEUSINVEST; PHILIPS; Télévision Par Satellite (TPS)	BELGACOM (50%/50% joint-venture)	JV: US West (25%), CATV operators (35%), financial partners (20%), the GIMV (20%), under the auspices of the Regional Government
	Activity	TV broadcasting	Telecom operator	US former "Baby Bell", banks and others
Infrastructure provided	Coverage	Walloon Region	National	Flemish region
	Media characteristics	CATV / satellite	-	Fiber-optic ring, connected to end-users
	Bandwidth		-	-
Services provided	Voice services		Y	P
	Data services		-	-
	Image services	Y	-	Y
	Management services		-	-
	Value-added services		-	P : Multimedia, Internet since 1-4-98
Contents provided				
Customer targets	Companies		Y: corporate + carriers'carrier	Y: corporate
	Institutions		-	-
	General public	Y	-	Y: residential
Comments		<i>Pilot digital broadcasting trials since July 1997</i>	<i>Has obtained an individual licence and passed carrier agreement with ESPRIT TELECOM</i>	<i>Planned and budgeted until 2005; Major national competitor to BELGACOM; first vocal telephony trials on 10th of July 1997; Agreements with MOBISTAR and City of Antwerp</i>

Belgium

Company/Entity Sector		TITAN	UNISOURCE Belgium Telco	Walloon government Regional Government
Name of the telecom venture		TITAN		WIN
Major other companies involved	Name	PHILIPS, GILLAM, ALCATEL, EVS, SAIT, SEE, CANAL+, BELGACOM, RTBF, TVI, AUDIOPRESSE, etc...	Strong links with KPN	Has chosen its operator in May 98 : Belgacom within a large consortium of various partners
	Activity	Various	Telecom operator	Telecom Operator
Infrastructure provided	Coverage	French Community	National	Walloon region
	Media characteristics	Conditionnal access set top box for CATV oriented projects	Leases lines from other carriers and operators	Ministry's highway telecom fiber infrastructure
	Bandwidth			-
Services provided	Voice services		Y	Y
	Data services	-	Y	Y
	Image services		Y	-
	Management services		Y	-
	Value-added services		Y	Y
Contents provided				
Customer targets	Companies		Y: Corporate	Y
	Institutions			Y
	General public			Y
Comments			Develops Call centres; Agreements with TELENET and BRUTELE	On going bid for the operating of the infrastructure; 3 major consortia still in the game

Belgium

Company/Entity Sector		WORLDCOM Telecommunication
Name of the telecom venture		WORLDCOM SA
Major other companies involved	<i>Name</i>	50%-50% joint venture between CODITEL & WORLDCOM since July 1997; has direct links with the TRACTEBEL Group
	<i>Activity</i>	The 4th US long distance operator, resulting from the merger of MFS Communications and LDDS Worldcom in 1996; has also acquired Uunet, first world IAP, and the Compuserve/AOL Internet network.
Infrastructure provided	<i>Coverage</i>	Brussels, London, Paris, Franckfurt, Stockholm, Amsterdam + 50 other networks in USA and Asia
	<i>Media characteristics</i>	Develops a pan european fiber optic networks
	<i>Bandwidth</i>	Y
Services provided	<i>Voice services</i>	Y
	<i>Data services</i>	Y
	<i>Image services</i>	Y
	<i>Management services</i>	
	<i>Value-added services</i>	Y
Contents provided		
Customer targets	<i>Companies</i>	1rst Belgian client: the Brussels stock exchange
	<i>Institutions</i>	
	<i>General public</i>	N
Comments		<i>Has obtained an individual licence</i>

Denmark

Company/Entity		NESA/ELTRA	Banestyrelsen	Copenhagen local Council	Zone System Aps
Sector		Electricity utility	Railway company	All facilities	Carriers carrier
Name of the telecom venture		PowerCom	-	-	-
Major other companies involved	<i>Name</i>	-	-	-	-
	<i>Activity</i>	-	-	-	-
Infrastructure provided	<i>Coverage</i>	Denmark	All major Danish cities	Center Copenhagen	Copenhagen, Oresund
	<i>Media characteristics</i>	1000 km fiber cable (considerable extension planned - up to 3000 km.)	600 km fiber cable network (12 or 24 fibres)	250 km fiber cable, pipelines (currently 40 km of pipelines is used)	Radio link 600 km, Fibres on Funen along motorways
	<i>Bandwidth</i>	160 Gigabit/sec	-	-	34 and 155 Mbs
Services provided	<i>Voice services</i>	-	-	-	-
	<i>Data services</i>	-	-	-	-
	<i>Image services</i>	-	-	-	-
	<i>Management services</i>	-	-	-	-
	<i>Value-added services</i>	-	-	-	-
Contents provided		-	-	-	-
Customer targets	<i>Companies</i>	Y : Sonofon, Mobilix, Tele-2, Telia	Y : Mobilix	Y: Mobilix, Telia	Y: not known
	<i>Institutions</i>		-	-	-
	<i>General public</i>		-	-	-
Comments		-	-	-	-

Denmark

Company/Entity		Road Directorate	DONG	Telia-Stofa A/S
Sector		Motorways	Natural Gas	Cable TV, radio broadcasting
Name of the telecom venture		-	-	-
Major other companies involved	<i>Name</i>	-	-	-
	<i>Activity</i>	-	-	-
Infrastructure provided	<i>Coverage</i>	Motorways in most of the country is available, but currently used 80 km on Funen	Gas pipes in major parts of country	17 cities
	<i>Media characteristics</i>	Physical space along motorways	Physical space along gaspipes	mainly coaxial cables, a few lines are equipped with fiber cables
	<i>Bandwidth</i>	-	-	-
Services provided	<i>Voice services</i>	-	-	Y
	<i>Data services</i>	-	-	-
	<i>Image services</i>	-	-	-
	<i>Management services</i>	-	-	-
	<i>Value-added services</i>	-	-	Y : Internet
Contents provided		-	-	-
Customer targets	<i>Companies</i>	Y: TeleDanmark Telia	Y	Y
	<i>Institutions</i>	-	-	Y
	<i>General public</i>	-	-	Y
Comments		-	-	-

Finland

Company/Entity Sector		Gasum Oy Gas utility	IVO Electricity utility	Railtelia Oy Network company	Helsinki Televisio Cable TV	Digita Oy TV and radio network company
Name of the telecom venture		-	-	-		-
Major other companies	<i>Name</i>	-	-	-		-
	<i>Activity</i>	-	-	-		-
Infrastructure provided	<i>Coverage</i>	Southern Finland	Nationwide	Nationwide	Helsinki Region	Nationwide
	<i>Media characteristics</i>	Radio Links	Fibre-optic network	5800 km in length		
	<i>Bandwidth</i>	-	-	-		-
Services provided	<i>Voice services</i>	Y	Y	Y	P	P
	<i>Data services</i>	Y	Y	Y	P	P
	<i>Image services</i>	-	-	-	Y	P : Digital TV broadcasting
	<i>Management services</i>	-	-	-		P
	<i>Value-added services</i>	-	-	-	P: Internet	P
Contents provided		-	-	-		Y
Customer targets	<i>Companies</i>	Y : Telecom operators	Y : Telia Finland (teleoperator)	Y : Telecom operators	P	P
	<i>Institutions</i>	-	-	-	P	P
	<i>General public</i>	-	-	-	Y	Y
Comments		<i>Gasum is subsidiary of Neste that is part of Fortum Group.</i>	<i>IVO is part of Fortum Group.</i>	<i>Railtelia Oy, established 1.6.1998, owned by VR (60%) and Telia (40%), teleoperator licence</i>	-	<i>Digital TV network will be built. New organization for distribution network will be established. Digita Oy is 100% owned subsidiary of Yleisradio, the Finnish broadcasting company.</i>

France

Company/Entity		BOUYGUES	BOUYGUES
Sector		Building works, real estate and communication (media & telecom)	Building works, real estate and communication (media & telecom)
Name of the telecom venture		9 Telecom SA	Bouygues Telecom
Major other companies involved	Name	Telecom Italia (80,3%), Bouygues (19,7%), Veba Telecom (20% in 9 Telecom)	BDT (55%), C&W (20%), Veba (17,5%). BDT : Telecom Italia (19,6%), Bouygues Group (59,5%), JC Decaux (21%)
	Activity	Telecom operators, Utility Company	Mobile telephony operators
Infrastructure provided	Coverage	31 interconnection nodes and 3,000 km fiber optics in 98, 61 nodes and 4,500 km fiber optics in 2000.	Mobile telephony : 90% of the population at the end of 1998
	Media characteristics	High Bandwidth SDH network	Mobile telephony network covering mainly large cities and urban areas
	Bandwidth		
Services provided	Voice services	Y: fixed telephony (+convergence with mobile telephony)	DCS 1800
	Data services	Y: Frame Relay, Intranet, ATM	
	Image services		
	Management services		
	Value-added services		Y: paging
Contents provided			
Customer targets	Companies	Y	Y
	Institutions	Y	Y
	General public	Y	Y
Comments		<i>Sheds its activities in the fixed telephony to let Telecom Italia take the lead of 9 Telecom SA. It keeps only 19.7% of 9 Telecom, Telecom Italia having now 80.3%.The 9 Telecom services (voice) is available to residential since December 1998</i>	<i>Operates in the mobile telephony sector; the mobile network is still expanding. Cable & Wireless wants to withdraw from Bouygues Telecom, but Bouygues has recently declared that the sell will not occur in 1998.</i>

France

Company/Entity		Vivendi (ex-Compagnie Générale des Eaux)	Vivendi (ex-Compagnie Générale des Eaux)
Sector		Water, energy, cleaning, building works, communications, urban planning and real estate, health	Water, energy, cleaning, building works, communications, urban planning and real estate, health
Name of the telecom venture		CegeTel	SFR
Major other companies involved	<i>Name</i>	Mannesmann (15%), BT (26%), Générale des Eaux (9%), Transtel (50%)	COFIRA (80%), Vodaphone (20%)
	<i>Activity</i>	Telecom operators, utility company	Telephony operators, holding
Infrastructure provided	<i>Coverage</i>	Nationwide since May 1998	Nationwide
	<i>Media characteristics</i>	10000 km fiber-optic network, La Defense network, a dozen local loop in 1998 and 200 in 2001	
	<i>Bandwidth</i>	up to 155 Mbps	
Services provided	<i>Voice services</i>	"Pleiade" : voice telephony for businesses. Le " 7" : voice telephony for households	Y: GSM
	<i>Data services</i>	Y: Frame Relay, LAN interconnection, VSAT, Internet, Intranet (including e-com services for businesses)	
	<i>Image services</i>	-	
	<i>Management services</i>	Y	
	<i>Value-added services</i>	Y : Concert services (VPN,,,,)	
Contents provided		-	
Customer targets	<i>Companies</i>	Y	Y
	<i>Institutions</i>	Y	Y
	<i>General public</i>	Y	Y
Comments		<i>Has purchased the communication group Havas and was renamed Vivendi. Intends to become the 2nd telecom operator & the main competitor of France Telecom. Major agreement signed with SNCF. Has set up a JV with Canal +, AOL and Berthelsmann to share their Internet services in "AOL par Cegetel" which intends to become the first ISP.</i>	<i>August 98 : roaming agreement with the worldwide satellite service Iridium. At the end of 1998, launched new Internet services accessible by mobile phone.</i>

France

Company/Entity		Suez-Lyonnaise des Eaux	SANEF
Sector		Design, building and management of urban infrastructures and services	Motorway company
Name of the telecom venture		Lyonnaise Câble	-
Major other companies involved	Name	Lyonnaise des Eaux (77%), France Telecom Câble (17%) and US West (6%).	
	Activity	Cable operator	
Infrastructure provided	Coverage	25 cable networks. Multiservice offer provided in Annecy since 12-97; Chambéry, Strasbourg, Orléans: 1998 ; Paris/region: 1999	North and East of France
	Media characteristics	Cable network	1800 km cable, 100 000 km dark fiber-optic
	Bandwidth	27 Mbps server to subscriber and 768 subscriber to server	-
Services provided	Voice services	Y (local, national and international)	-
	Data services	Y	-
	Image services	Digital TV	-
	Management services	-	-
	Value-added services	Internet	-
Contents provided		-	-
Customer targets	Companies	-	Y : GegeTel, MFS, Hermes, Esprit telecom
	Institutions	-	-
	General public	Y	-
Comments		Strategy based on the provision of a multiservice offer over cable networks. Internet service over the cable (CyberCâble service) is available in Paris, Annecy, Le Mans and Strasbourg, and in 25 cities during 1999	The SANEF's objective in the telecom sector is to rent dark fiber capacities to telecom operators, Agreement with Cegetel. Links have been set up with the networks of RATP, VNF, SAPRR

France

Company/Entity		SAPR	Cofiroute	SAPN	ASF
Sector		Motorway company	Motorway company	Motorway company	Motorway company
Name of the telecom venture		-	-	-	-
Major other companies involved	Name	-	-	-	-
	Activity	-	-	-	-
Infrastructure provided	Coverage	Paris-Rhin-Rhône areas		Ile-de-France & Normandie	South Lyon to East Bordeaux
	Media characteristics	4400 km fiber-optic	750 km of fiber optic cable - 24 fiber optic cables	-	24 monomode fiber optic cable
	Bandwidth	-	-	-	-
Services provided	Voice services	-	-	-	-
	Data services	-	-	-	-
	Image services	-	-	-	-
	Management services	-	-	-	-
	Value-added services	-	-	-	-
Contents provided		-	-	-	-
Customer targets	Companies	Y : Cegetel SFR	Y : Cegetel	-	-
	Institutions	-	-	-	-
	General public	-	-	-	-
Comments		<i>idem SANEF</i>	<i>Autorisation by the regulation authority to rent telecom capabilities, Agreement with Cegetel</i>	<i>No real activity in telecom sector as the infrastructure does not interest the telecom operators very much</i>	<i>The strategy of the company is the telcom sector is not yet clearly established</i>

France

Company/Entity		ADP	RATP
Sector		Airport authority	Metro company
Name of the telecom venture		-	Telcité
Major other companies involved	<i>Name</i>	-	-
	<i>Activity</i>	-	-
Infrastructure provided	<i>Coverage</i>	Ile-de-France region	Ile-de-France region
	<i>Media characteristics</i>	Centrex facility, connection to local loop	FDDI network connecting 150 sites, 9000 km fiber-optic
	<i>Bandwidth</i>	-	SDH networks up to 622 Mbps
Services provided	<i>Voice services</i>	Y: Centrex	-
	<i>Data services</i>	Y	-
	<i>Image services</i>	P: Video-on-demand - Videosurveillance	-
	<i>Management services</i>	Y	-
	<i>Value-added services</i>	Y : Internet, video-on-demand, videosurveillance	-
Contents provided		-	-
Customer targets	<i>Companies</i>	Airlines companies, car rental companies, any other companies in the ADP area	Y : Telecom operators
	<i>Institutions</i>	-	P : Universities, local authorities
	<i>General public</i>	-	-
Comments		ADP has awarded a telecom licence under the Information Highways Law	Strategy: to provide 2 kinds of telecom services : rental of dark fibers (agreements signed with Bouygues Telecom, Cegetel, MFS, Esprit Telecom) ; provision of network services based on SDH protocols. Is bidding for a new licence to operate a regional local local loop

France

Company/Entity		SNCF
Sector		Railway company
Name of the telecom venture		Télécom Développement (TD) / TD Services (TDS)
Major other companies involved	<i>Name</i>	CegeTel (40% in TD, 80% in TDS)
	<i>Activity</i>	Telecom operator
Infrastructure provided	<i>Coverage</i>	Nationwide
	<i>Media characteristics</i>	30,000 km telecom network including 8,600 km of fiber-optic
	<i>Bandwidth</i>	-
Services provided	<i>Voice services</i>	Y
	<i>Data services</i>	Y
	<i>Image services</i>	-
	<i>Management services</i>	Y
	<i>Value-added services</i>	-
Contents provided		-
Customer targets	<i>Companies</i>	-
	<i>Institutions</i>	-
	<i>General public</i>	-
Comments		SNCF, via TD is mainly involved in the provision of telecom infrastructures. The infrastructure is given by TD and the network is implemented by Cegetel. Participates, as a minor shareholder to the selling of telecom services. 2/3 of the fiber optic network capacity is devoted to Cegetel. The remaining is for internal uses. Cover voice and data communications.

France

Company/Entity		Voies navigables de France	Eurotunnel
Sector		Navigation canals	Channel's tunnel company
Name of the telecom venture		-	Eurotunnel Telecom
Major other companies involved	<i>Name</i>	-	Eurotunnel group 100%
	<i>Activity</i>	-	-
Infrastructure provided	<i>Coverage</i>	Bourgogne Region, North and East of France	Paris-London
	<i>Media characteristics</i>	110 km of fiber	-
	<i>Bandwidth</i>	-	up to 34 Mbps, SDH protocol
Services provided	<i>Voice services</i>	-	Y
	<i>Data services</i>	-	Y
	<i>Image services</i>	-	-
	<i>Management services</i>	-	Y
	<i>Value-added services</i>	-	-
Contents provided		-	-
Customer targets	<i>Companies</i>	Y : SANEF, SAPRR, TD, Worldcom, Hermes Europe Raitel	Y
	<i>Institutions</i>	-	Y
	<i>General public</i>	-	-
Comments		<i>No telecom infrastructure set up for the purpose of renting to telecom operators. However, it gives access to operators to its own domains. Agreements signed with SANEF, SAPRR, Telecom Developpement, Worldcom and Hermes Europe Raitel.</i>	<i>Has awarded a licence in France and UK to set up and operate a network between Paris and London. An extension to Belgium is planned.</i>

France

Company/Entity		EDF	France Télécom Câble	Numéricable
Sector		Electricity utility	Cable operator	Cable operator
Name of the telecom venture		-	-	
Major other companies involved	<i>Name</i>	-	State (77%), general public (21%), employees (2%)	Canal + (85%), CGE (15%)
	<i>Activity</i>	-		
Infrastructure provided	<i>Coverage</i>	Nationwide	137 cable networks, around 700,000 subscribers	32 cable networks, 590,684 subscribers
	<i>Media characteristics</i>	1000 km fiber-optic network		
	<i>Bandwidth</i>	-		
Services provided	<i>Voice services</i>	-	Y	
	<i>Data services</i>	-	Internet	P: Internet
	<i>Image services</i>	-	TV channels	TV channels
	<i>Management services</i>	-		
	<i>Value-added services</i>	-		
Contents provided		-		
Customer targets	<i>Companies</i>	-		
	<i>Institutions</i>	-		
	<i>General public</i>	-	700,000 subscribers	590,600 subscribers
Comments		<i>The Government prevented EDF to enter in the telecom market. Has recently put on sale its cable TV Network</i>		<i>High rate internet access service planned by the end of 1998, NC Numericable opened 37% of its capital to US company Exante in September 1998</i>

France

Company/Entity		Vidéopole	Cité Interactive	Colt Telecom
Sector		Cable operator	Local loop provider	Local loop provider
Name of the telecom venture				
Major other companies involved	<i>Name</i>	EDF	Laurent Abril; Cable Ventures of France	Colt Telecom Group
	<i>Activity</i>			
Infrastructure provided	<i>Coverage</i>	85 cable networks, 111,590 subscribers	1 network (Laon), other planned	Paris region and Lyon. 200 km of fiber optic at the end of 1998
	<i>Media characteristics</i>		Fiber Optic	Fiber optic
	<i>Bandwidth</i>			
Services provided	<i>Voice services</i>		Y: telephony over the cable network	Colt direct
	<i>Data services</i>		Internet and leased lines	Colt Link and Colt LAN Link
	<i>Image services</i>	TV channels	TV channels	TV channels
	<i>Management services</i>			Y
	<i>Value-added services</i>			
Contents provided				
Customer targets	<i>Companies</i>		Y	Y
	<i>Institutions</i>		Y	Y
	<i>General public</i>	111,590 subscribers	Y	
Comments		<i>EDF has recently put on sale its cable TV network</i>	<i>Start-up company that intends to set up local loops</i>	<i>Colt Telecom enlarges its customers to SMEs. Agreement signed with Hermes to interconnect European local loop networks. Provides telephony services via its 4-digit format prefix 1690. Intends to build local loops in various French cities. Lyon, Marseille and Lille are under consideration.</i>

France

Company/Entity		Worldcom
Sector		Local loop provider
Name of the telecom venture		
Major other companies involved	<i>Name</i>	
	<i>Activity</i>	
Infrastructure provided	<i>Coverage</i>	Paris area. 70 km of optic network (200 km expected by the end of 1998). Local loops in Lille, Strasbourg, Lyon and Marseille. Others regions for telecom network services : Alsace, Bourgogne, Champagne-Ardennes, Lorraine, Nord Pas de Calais, P.A.C.A, Rhone Alpes.
	<i>Media characteristics</i>	Fiber optic
	<i>Bandwidth</i>	
Services provided	<i>Voice services</i>	Y
	<i>Data services</i>	Y
	<i>Image services</i>	
	<i>Management services</i>	Y
	<i>Value-added services</i>	
Contents provided		
Customer targets	<i>Companies</i>	Y
	<i>Institutions</i>	
	<i>General public</i>	
Comments		<i>Intends to open its service for large companies and SMEs by the end of 1998 in Lille, Strasbourg, Lyon and Marseille. Other cities might follow in 1999 and 2000.</i>

Germany

Company/Entity		Deutsche Bahn			Badenwerk	EVS	Stadtwerke Düsseldorf
Sector		Railway company			Electricity & gas utility	Electricity & gas utility	Electricity, gas, water utility
Name of the telecom venture		Arcor AG & Co			Tesion (formely CNS)		ISIS Multimedia Net
Major other companies involved	Name	AT&T, Unisource	Deutsche Bank	Mannesmann	Swiss Telecom PTT		WestLB
	Activity	Telecom operators	Bank	Automotive industry	Telecom operator		Bank
Infrastructure provided	Coverage	Nation-wide			Regional : Baden Württemberg		City of Düsseldorf
	Media characteristics	40,000 km cable (5,000 km opto-fiber)			2,000 km fiber-optic		Fiber-optic city network
	Bandwidth	-			-		Basic 155 Mbit/s
Services provided	Voice services	Y			Y		Y
	Data services	Y			Y		Y
	Image services	Y			-		Y
	Management services	Y			-		-
	Value-added services	Y			Y		Y
Contents provided					Y		-
Customer targets	Companies	Y			Y		Y
	Institutions	Y			Y		-
	General public	Y			Y		Y
Comments		-			-		-

Germany

Company/Entity		GEW	Veba	RWE	Viag	Hamburgische Elektrizitätswerke AG
Sector		Electricity, gas, water utility	Electricity utility	Electricity, oil industry	main shareholder in many gas & electricity utilities	Electricity, distance heat utility
Name of the telecom venture		NetCologne	o.tel.o		Viag Interkom	HanseNet Telekommunikation GmbH
Major other companies involved	Name	Kreissparkasse, Stadtparkasse	-		BT	-
	Activity	Banks	-		Telecom operator	-
Infrastructure provided	Coverage	Cologne & surroundings	Nation-wide		Nation-wide	Regional
	Media characteristics	160 km fiber-optic, 2,500 km copper	11,000 km fiber-optic		4,000 km fiber-optic	600 km fiber-optic
	Bandwidth	Basic 34-155 Mbit/s	2.5 Gbit/s		34 Mbit/s	up to 622 Mbits/s
Services provided	Voice services	Y	Y		Y	Y
	Data services	Y	Y		Y	Y
	Image services	-	-		-	-
	Management services	-	Y		Y	-
	Value-added services	-	Y : Electronic commerce, business applications		Y	Y
Contents provided		-	-		-	-
Customer targets	Companies	Y	Y		Y	Y
	Institutions	-	Y		-	Y
	General public	Y	Y		Y	Y
Comments		-	-		-	-

Germany

Company/Entity		Viag Interkom	EWE AG, Oldenburg	Stadtwerke Kiel AG	Mobil Com AG
Sector		Telecom operator	Electricity & gas utility	Energy, gas, water, distance heating utility	Service provider, mobile radio
Name of the telecom venture		Bayernwerk Netkom	EWE TEL GmbH	KielNet GmbH	
Major other companies involved	Name	-	-		
	Activity	-	-		
Infrastructure provided	Coverage	Regional	Regional	Regional	
	Media characteristics	5,700 km fiber-optic 15,000 km copper	2,000 km fiber-optic 7,000 km copper	60 km fiber-optic, leased lines	
	Bandwidth	34 Mbits/s	64 Kbit/s - 622 Mbit/s	64 kBit/s - 2 MBit/s	
Services provided	Voice services	Y	Y	Y	
	Data services	Y	Y	Y	
	Image services	-		-	
	Management services	Y	-	-	
	Value-added services	Y	Y	-	
Contents provided				-	
Customer targets	Companies	Y	Y	Y	
	Institutions	Y	Y	Y	
	General public	-	Y	Y	
Comments		-	-	-	

Germany

Company/Entity		Hessische Elektrizitäts-AG	Stadtwerke Münster GmbH	AVU Dortmund
Sector		energy utility	energy utility	energy, water, waste disposal utility, services
Name of the telecom venture		HEAG MediaNet GmbH	CityKom Münster GmbH	ENKom Gesellschaft für Telekommunikation mbH
Major other companies involved	Name	-	-	-
	Activity	-	-	-
Infrastructure provided	Coverage	regional	regional	regional
	Media characteristics	650 km fiber-optic 3000 km copper		
	Bandwidth	-		
Services provided	Voice services	Y	Y	-
	Data services	Y	Y	Y
	Image services	-	Y	-
	Management services	-	-	Y
	Value-added services	Y	Y	-
Contents provided				
Customer targets	Companies	Y	Y	Y
	Institutions	-	Y	Y
	General public	-	Y	-
Comments				

Germany

Company/Entity		Stadtwerke Hannover AG	üstra AG	EWAG AG, Nürnberg	Erlanger Stadtwerke AG	Stadtwerke Fürth
Sector		energy utility	public transportation	energy, water utility		
Name of the telecom venture		Hannoversche Telekommunikations- und Netzgesellschaft mbH (HTN)		NEFkom Telekommunikation GmbH & Co.KG		
Major other companies involved	Name	Stadtsparkasse Hannover	State Capital Hannover	Bayernwerk Netkom GmbH	three regional financial institutions	
	Activity	bank	city administration	telecom operator	bank	
Infrastructure provided	Coverage	regional		regional		
	Media characteristics	200 km fiber-optic, 2600 km copper		120 km fiber-optic, 3 000 km copper		
	Bandwidth	up to 622 Mbit/s		-		
Services provided	Voice services	-		Y		
	Data services	Y		Y		
	Image services	-		-		
	Management services	Y		Y		
	Value-added services	Y		Y		
Contents provided						
Customer targets	Companies	Y		Y		
	Institutions	Y		Y		
	General public	-		-		
Comments		-		-		

Germany

Company/Entity		Stadtwerke Flensburg GmbH	VEW Energie AG	Stadtwerke Bielefeld GmbH
Sector		energy, water, utility	energy, gas, water	energy utility
Name of the telecom venture		KomTel GmbH	VEW TELNET GmbH	BITel Gesellschaft für kommunale Telekommunikation mbH
Major other companies involved	Name	-	Buchungszentrale der westfälisch-lippischen Sparkassen GmbH	-
	Activity	-		-
Infrastructure provided	Coverage	regional	regional	regional
	Media characteristics		1800 km backbone network; ATM/Frame Relay basis	1500 km copper lines
	Bandwidth		2.5 Gbit/s(155 Mbit/s at city level)	64 kBit/s - 2 Mbit/s
Services provided	Voice services	Y	Y	Y
	Data services			Y
	Image services			-
	Management services		-	-
	Value-added services		Y	Y
Contents provided				
Customer targets	Companies	Y	Y	Y
	Institutions	Y		Y
	General public	Y	Y	-
Comments				

Germany

Company/Entity		Dortmunder Stadtwerke AG				Pesag AG Stadtwerke Paderborn GmbH
Sector		public transport, disposal				energy utility
Name of the telecom venture		DoKom Gesellschaft für Telekommunikation mbH				Eggenet GmbH
Major other companies involved	<i>Name</i>	Dortmunder Energie- und Wasserversorgung GmbH	VEW TELNET Ges. für Telekommunikation und Netzdienste mbH	VEW TELNET Ges. für Telekommunikation und Netzdienste mbH	WFG Westfälische Ferngas-AG	-
	<i>Activity</i>	energy and water	telecommunication	telecommunication	remote gas	-
Infrastructure provided	<i>Coverage</i>	regional				regional
	<i>Media characteristics</i>	modern high speed network (SDH technology)				-
	<i>Bandwidth</i>					-
Services provided	<i>Voice services</i>	Y				N
	<i>Data services</i>	Y				Y
	<i>Image services</i>	-				N
	<i>Management services</i>	Y				Y
	<i>Value-added services</i>	Y				Y
Contents provided						
Customer targets	<i>Companies</i>	Y				Y
	<i>Institutions</i>	Y				Y
	<i>General public</i>	-				-
Comments						

Germany

Company/Entity		Stadtweke Hamm GmbH	Stadtwerke München			Stadtwerke Mainz AG
Sector		electricity, gas, water	energy supplier, public utility			electricity, gas, water, transportation
Name of the telecom venture		Hamcom GmbH Telekommunikation	M`net Telekommunikations GmbH			MAINZ-KOM Telekommunikation GmbH
Major other companies involved	Name	-	Bayernwerk Netkom GmbH	Bayerische Landesbank	Stadtsparkasse München	-
	Activity	-	telecommunication	bank	bank	-
Infrastructure provided	Coverage	regional	local			regional
	Media characteristics	-	180 km fibre optics lines			copper cable network and fibre network
	Bandwidth	-	64 Kbits/sec - 2.5 Gbits/s			-
Services provided	Voice services	Y	Y			Y
	Data services	Y	Y			Y
	Image services	N	-			Y
	Management services	N	-			Y
	Value-added services	Y	Y			Y
Contents provided						
Customer targets	Companies	Y	Y			Y
	Institutions	Y	-			N
	General public	-	-			-
Comments						-

Germany

Company/Entity		REWAG Regensburger Energie- und Wasservers. AG & Co. KG				
Sector		electricity, gas, water				
Name of the telecom venture		R-KOM GmbH & Co. KG				
Major other companies involved	<i>Name</i>	Stadtwerke Regensburg GmbH	OBAG Ostbayerische Energieversorgung AG	Bayerische Landesbank – Girozentrale	Bayernwerk Netkom GmbH	Mittelbayerische Druck- und Verlagsgesellschaft mbH
	<i>Activity</i>	energy, water, transportation	energy, water and gas, telecommunication-services	bank	telecommunication	newspaper publisher
Infrastructure provided	<i>Coverage</i>	regional				
	<i>Media characteristics</i>	-				
	<i>Bandwidth</i>	-				
Services provided	<i>Voice services</i>	-				
	<i>Data services</i>	Y				
	<i>Image services</i>	Y				
	<i>Management services</i>	Y				
	<i>Value-added services</i>	Y				
Contents provided						
Customer targets	<i>Companies</i>	Y				
	<i>Institutions</i>	-				
	<i>General public</i>	-				
Comments						

Germany

Company/Entity		VEW TELNET (46%)	Wuppertaler Stadtwerke AG (25,1%)	Stadtwerke Wolfsburg AG
Sector		telecommunication	energy supplier, transportation, public utility	electricity, district heating, water, transportation
Name of the telecom venture		TeleBel Ges. für Telekommunikation Bergisches Land mbH		WobCom GmbH
Major other companies involved	<i>Name</i>	Stadtsparkasse Wuppertal	Engel GmbH & Co KG	-
	<i>Activity</i>	bank	communication technology	-
Infrastructure provided	<i>Coverage</i>	regional		regional
	<i>Media characteristics</i>	130 km fiber-optic network, 1100 km copper cable network		fiber optic network
	<i>Bandwidth</i>	-		-
Services provided	<i>Voice services</i>	Y		Y
	<i>Data services</i>	Y		-
	<i>Image services</i>	-		-
	<i>Management services</i>	-		-
	<i>Value-added services</i>	Y		Y
Contents provided		-		-
Customer targets	<i>Companies</i>	Y		Y
	<i>Institutions</i>	-		-
	<i>General public</i>	Y		Y
Comments				

Germany

Company/Entity		Berliner Wasserwerke	Energieversorgung Südsachsen AG	Energieversorgung Spree-Schwarze Elster AG (ESSAG)
Sector		water supply	electricity, water, waste water, gas, oil, telekommunication, distance heating	energy utility
Name of the telecom venture		BerliKomm GmbH	ESTel mbH	LausitzNET GmbH
Major other companies involved	Name	-	-	-
	Activity	-	-	-
Infrastructure provided	Coverage	regional	regional	regional
	Media characteristics	3000 km fibre-optic network	300 km fibre-optic	500km fibre-optics
	Bandwidth	upto 2,4 Gbit/Sek	64 Kbit/sec - 155 Mbit/sec	-
Services provided	Voice services		Y	Y
	Data services	Y	Y	Y
	Image services			
	Management services		Y	Y
	Value-added services		Y	Y
Contents provided				
Customer targets	Companies	Y	Y	Y
	Institutions		Y	
	General public	N	Y	Y
Comments				

Germany

Company/Entity		EVM AG	Würzburger Versorgungs- und Verkehrs-GmbH	Städtische Sparkasse Würzburg	Bayernwerk Netkom GmbH
Sector		energy utility, waste disposal utility	energy utility, transportation	bank	telecommunication
Name of the telecom venture		Regiocom GmbH	Wücom GmbH		
Major other companies involved	Name	-	-		
	Activity	-	-		
Infrastructure provided	Coverage	regional	regional		
	Media characteristics				
	Bandwidth				
Services provided	Voice services	Y	Y		
	Data services	Y	Y		
	Image services				
	Management services	Y	Y		
	Value-added services	Y	Y		
Contents provided					
Customer targets	Companies	Y	Y		
	Institutions				
	General public	Y			
Comments					

Germany

Company/Entity		Elektrizitätswerk Minden-Ravensberg GmbH (EMR)	Mitteldeutsche Energieversorgung AG (MEAG)
Sector		energy supply	energy supply
Name of the telecom venture		TELE/OS GmbH	TelSA GmbH
Major other companies involved	<i>Name</i>	-	-
	<i>Activity</i>	-	-
Infrastructure provided	<i>Coverage</i>	regional	regional
	<i>Media characteristics</i>		1000 km fibre-optic
	<i>Bandwidth</i>		
Services provided	<i>Voice services</i>	Y	Y
	<i>Data services</i>	Y	Y
	<i>Image services</i>		Y
	<i>Management services</i>	Y	Y
	<i>Value-added services</i>	Y	Y
Contents provided			
Customer targets	<i>Companies</i>	Y	Y
	<i>Institutions</i>		
	<i>General public</i>		Y
Comments			

Germany

Company/Entity		Stadtwerke Augsburg	Bayernwerk NETKOM GmbH	Bayerische Landesbank Girozentrale
Sector		energy supply	telecommunication	bank
Name of the telecom venture		AugustaKom		
Major other companies involved	<i>Name</i>	Stadtsparkasse Augsburg	Kreissparkasse Augsburg	Lech-Elektrizitätswerke AG
	<i>Activity</i>	bank	bank	energy supply
Infrastructure provided	<i>Coverage</i>	regional		
	<i>Media characteristics</i>	60 km fibre-optic with 2.000 km LWL, 550 km copper cable		
	<i>Bandwidth</i>	64 kbit/s - 622 Mbit/s		
Services provided	<i>Voice services</i>	Y		
	<i>Data services</i>	Y		
	<i>Image services</i>			
	<i>Management services</i>	Y		
	<i>Value-added services</i>	Y		
Contents provided				
Customer targets	<i>Companies</i>	Y		
	<i>Institutions</i>			
	<i>General public</i>	Y (from April 1999)		
Comments				

Greece

Company/Entity		DEI	DEPA	FilmNet		Attikis Highway	OSE - Hellenic Railroad Organisation
Sector		Electricity utility	Gas utility	CableTV	Irrigation-Drainage Network	Motorway	Rail
Name of the telecom venture		-	-	-	-	-	
Major other companies involved	<i>Name</i>	-	-	-	-	-	
	<i>Activity</i>	-	-	-	-	-	
Infrastructure provided	<i>Coverage</i>	Nationwide	Nationwide	-	-	-	
	<i>Media characteristics</i>	Greece's largest network	-	Connected to end-users			
	<i>Bandwidth</i>	-	-	-			
Services provided	<i>Voice services</i>	-	-	-	-	-	
	<i>Data services</i>	-	-	-	-	-	
	<i>Image services</i>	-	-	Y	-	-	
	<i>Management services</i>	-	-	-	-	-	
	<i>Value-added services</i>	-	-	-	-	-	
Contents provided							
Customer targets	<i>Companies</i>	-	-	-	-	-	
	<i>Institutions</i>	-	-	-	-	-	
	<i>General public</i>	-	-	-	-	-	
Comments		<i>Only plans</i>	<i>Only plans</i>	<i>Only plans</i>	<i>Only plans</i>		

Ireland

Company/Entity Sector		Ocean Telecom operator	Cable and Wireless	Esat Telecom Telecom operator
Name of the telecom venture		Ocean		Esat Telecom
Major other companies involved	Name	BT and Electricity Supply Board "ESB"		CIE
	Activity	Telecom operator/State owned electricity supply company		State-owned rail, bus and coach operator
Infrastructure provided	Coverage	Nationwide	Predominantly Dublin based, but with some regional coverage	Nationwide
	Media characteristics	Fibre optic network under construction. Utilises ESB electricity supply network plus microwave communication system	Fibre optic network under construction in Dublin	Urban fibre optic networks under construction. National backbone nearing completion
	Bandwidth	-		ATM services now available in some urban centres
Services provided	Voice services	see comments	see comments	see comments
	Data services	Y	from December 1, 1998	Y
	Image services	-		-
	Management services	Y		Y
	Value-added services	Y	Y	Y
Contents provided				
Customer targets	Companies	Y	Y	Y
	Institutions	Y	Y	Y
	General public	Y		Y
Comments		Competition for voice telephony possible only from December 1, 1998	Competition for voice telephony possible only from December 1, 1998	Competition for voice telephony possible only from December 1, 1998

Ireland

Company/Entity		Independent Telecoms Group (ITG)	WorldCom Ireland
Sector		Telecom operator	Telecom operator
Name of the telecom venture			WorldCom Ireland
Major other companies involved	<i>Name</i>		
	<i>Activity</i>		
Infrastructure provided	<i>Coverage</i>	Nationwide	Nationwide, predominantly in Dublin plus other major population centres
	<i>Media characteristics</i>		Fibre optic network under construction
	<i>Bandwidth</i>		-
Services provided	<i>Voice services</i>	Payphones	see comments
	<i>Data services</i>	Y	Y
	<i>Image services</i>		-
	<i>Management services</i>		Y
	<i>Value-added services</i>	Y	Y
Contents provided			
Customer targets	<i>Companies</i>	Y	Y
	<i>Institutions</i>	Y	Y
	<i>General public</i>	Y: payphone services only	N
Comments		<i>Competition for voice telephony possible only from December 1, 1998</i>	<i>Competition for voice telephony possible only from December 1, 1998</i>

Italy

Company/Entity Sector		ENEL Electricity utility	ENI Gas & oil utility	FS Railway company	Società Autostrade Motorway company
Name of the telecom venture		Wind	Albacom	TSF	Telon
Major other companies involved	Name	Deutsche Telekom, France Telecom	British Telecom, Banca Nazionale del Lavoro, Mediaset	Infostrada	Bell Canada, Distacom, Cofiri
	Activity	Telecom operators	Telecom operator (BT), banking (Bnl), media (Mediaset)	-	Telecom operators, industrial holdings
Infrastructure provided	Coverage	Nationwide	Nationwide	Nationwide	Nationwide
	Media characteristics	6,000 km in length, 540 radio repeaters, 1000 communiting switches, 400 commuting switches	2,400 km fiber optic, 300 radio repeaters, copper wire and fiber optic national network, copper wire, coaxial cable and fiber optic, LAN	1,774 km fiber-optic	66,000 km fiber-optic network
	Bandwidth	-	-	-	-
Services provided	Voice services	Y	Y	Y	-
	Data services	Y	Y	Y	Y
	Image services	-	Y	-	Y
	Management services	-	-	-	-
	Value-added services	-	Y	-	-
Contents provided					-
Customer targets	Companies	P	-	Y	-
	Institutions	-	-	-	-
	General public	P	-	Y	-
Comments		Wind was assigned a license as public voice telephony operator and won the third cellular operator license	Albacom was assigned a license as public voice telephony operator		Autostrade holds a license as public voice telephony operator and participated as Telon in the call for tender for the third mobile operator

Luxembourg

Company/Entity Sector		CEGEDEL Electricity distribution	CFL Railroad transportation	CODITEL Luxembourg CATV
Name of the telecom venture		CEGECOM (1994)	Infrastructure entity (Law of 10th May 1995)	Subsidiary of CODITEL Belgium
Major other companies involved	Name	SOGEL		CODITEL Belgium
	Activity	CATV operating		
Infrastructure provided	Coverage	National with important exceptions such as Luxembourg City		Local: in numerous cities accounting for about 30 000 households
	Media characteristics		275 km of copper telecommunication network	CATV
	Bandwidth			Upgrades slowly its network to 450 Mhz; conducts a pilot upgrading to 862 Mhz in Walferdange
Services provided	Voice services	Has answered the mobile bid in July-October 1997 (LUXCALL Consortium) but failed		
	Data services			
	Image services Management services	Y		Y
	Value-added services			Aims at providing Internet Access on a CATV basis in the Walferdange area. Would be the first "alternative" licensed data telecom provider
Contents provided				
Customer targets	Companies			
	Institutions			
	General public	Y	Y	Y
Comments		CEGEDEL is owned by 3 major shareholders, the State, Luxempart & Indelec	Has had security problems and thus is reprioritising its objectives	

Luxembourg

Company/Entity Sector		SES Satellite system operator	SOGEL Electrical & Electronic equipment supplier
Name of the telecom venture		ESMS	CEGECOM (1994)
Major other companies involved	Name	Intel Corp., DT AG, HUGHES Network Systems (HNS), Luxembourg P&T.	CEGEDEL
	Activity	Various	CATV operating
Infrastructure provided	Coverage	International	National with important exceptions such as Luxembourg City
	Media characteristics	ASTRA satellite system	First fiber optic network presented in 1990
	Bandwidth	38 Mbits/s transmission	600 to 850 Mhz
Services provided	Voice services	-	
	Data services	Y	
	Image services	Y	
	Management services	-	
	Value-added services	Y : Internet, satellite services	
Contents provided		-	
Customer targets	Companies	Y	
	Institutions	-	
	General public	Y	Y
Comments		Major shareholders: State, 14 banks, DT and Thames TV Ltd; SES has a concession agreement with the State until 2010.	

Netherlands

Company/Entity Sector		EnerTel 9 energy utilities		Casema Cable TV	Colt Pan-European telecommunications company
Name of the telecom venture		-		-	
Major other companies involved	Name	Casema	NorTel	Acquired by France Telecom	
	Activity	Cable TV	Telecom operator	Telecom operator	
Infrastructure provided	Coverage	Nationwide		Regional	A number of cities in Europe, among which Amsterdam
	Media characteristics	Fiber-optic network based on Synchronous Digital Hierarchy (SDH)		Cable network connected to end-users	In the Netherlands: four fibre optic rings around Amsterdam
	Bandwidth	2 Mb/s, 34 Mb/s, 140 Mb/s		-	
Services provided	Voice services	Y		Y : carrier select services P : Cable telephony	Y
	Data services	Y		Y	Y
	Image services	Y		Y	Y
	Management services	-		Y	-
	Value-added services	Y: ISDN, Internet, 0800/0900 services, virtual ISP service		Y : Video-on-demand, ISDN, Internet, electronic shopping, LAN Interconnect, Internet via the cable / PSTN	Y: Internet, messaging, LAN interconnect and other value added services, 0800 and 0900 services
Contents provided		-		-	-
Customer targets	Companies	Y : top 300 companies		Y	Y
	Institutions	-		-	-
	General public	Y		Y	-
Comments		-		-	<i>In the third quarter of 1998, Colt acquired Telecom Noord West, which was part of the utility Telecom Noord West</i>

Netherlands

Company/Entity Sector		Edon Energy Utility	A2000 Cable TV	
Name of the telecom venture		Castel	-	
Major other companies involved	<i>Name</i>	WorldCom (agreement)	US West	UPC
	<i>Activity</i>	US long-distance operator	US operator	US operator
Infrastructure provided	<i>Coverage</i>	Northeastern Dutch zone	Purmerend, Amsterdam, Zaanstad, Hilversum	
	<i>Media characteristics</i>	Cable network connected to end-users	Cable network connected to end-users, partly fibre optic (not to the end-sers)	
	<i>Bandwidth</i>	Leased lines: 64Kb/s, 2 Mb/s, 34 Mb/s, 140 Mb/s	Leased lines: 2 Mb/s, Internet:1,5 Mb/s maximum	
Services provided	<i>Voice services</i>	Y: (via ISDN) P : Cable telephony	Y: Cable telephony to part of its network	
	<i>Data services</i>	Y	Y	
	<i>Image services</i>	Y	Y	
	<i>Management services</i>	-	-	
	<i>Value-added services</i>	Y : ISDN(30), Internet (FreeAccess via network KPN Telecom), Home-shopping, Centrex consulting, LAN Interconnect; P: Internet via the cable, homeshopping, tele-education, information services	Y: Internet, video services P: homeshopping, ISDN, voice mail, conference calling, VPN, Centrex	
Contents provided		-	-	
Customer targets	<i>Companies</i>	Y	Y	
	<i>Institutions</i>	-	-	
	<i>General public</i>	Y	Y	
Comments		-	<i>A 2000 probably will become part of United Telekabel Holding</i>	

Netherlands

Company/Entity Sector		Eneco Energy & waterworks utility	Esprit Telecom Benelux Telecommunications services provider
Name of the telecom venture		Eneco Kabeltelevisie en Telecom	Esprit Telecom Benelux
Major other companies involved	Name	-	
	Activity	-	
Infrastructure provided	Coverage	Den Haag, Rotterdam, Dordrecht	For the Netherlands : plans for nationwide network, but focus on the Randstad
	Media characteristics	Cable network	Is building a Dutch national backbone network to support its national long distance and international service. Works on microwave radio links in an area around 6 cities in the Randstad
	Bandwidth	Leased lines, ISDN 30	Y : private circuits P : managed bandwidth services
Services provided	Voice services	-	Y
	Data services	Y	Y
	Image services	Y	
	Management services	-	
	Value-added services	Y: Internet via the cable to part of its network, audio/video, interactive services	Y : 0800 services, calling cards
Contents provided		-	
Customer targets	Companies	Y	Y
	Institutions	-	Y
	General public	Y	
Comments		-	

Netherlands

Company/Entity Sector		Nuon Energy utility	PNEM/Mega Groep NV Energy utility
Name of the telecom venture		TeleKabel	Palet Kabelcom
Major other companies involved	Name	TeleKabel and cable company UPC have merged to United Telekabel Holding	Utilities PNEM and MegaLimburg have merged on 01-01-98
	Activity	UPC is a US operator	-
Infrastructure provided	Coverage	Flevoland, Friesland, Gelderland	Northern Brabant, Zuid-Limburg
	Media characteristics	Cable network	Cable network
	Bandwidth	Internet: 6 Mb/s downstream, 1,5 Mb upstream	Y: Leased lines: 2 Mb/s and higher P: leased lines less than 2 Mb/s, bandwidth on demand
Services provided	Voice services	P: Cable telephony	P: Cable telephony (in 1999)
	Data services	Y	Y
	Image services	Y,P	Y
	Management services	Y	-
	Value-added services	Y: Internet via the cable to part of its network, LAN interconnect, ISDN30, international/national telephony	Y: frame relay, ISDN30, LAN-LAN interconnect, LAN-WAN interconnect, VPNs, 0800/0900 services, P: Bandwith on demand, ATM, Internet (in 1998), possibly telebanking, teleshopping
Contents provided			
Customer targets	Companies	Y	Y
	Institutions	-	-
	General public	Y	Y
Comments		TeleKabel and cable company UPC have merged to United Telekabel Holding	-

Netherlands

Company/Entity Sector		Nozema	NS	WorldCom
		Broadcasting operator	Railway company	Global telecommunications services company
Name of the telecom venture		-	Telfort	WorldCom
Major other companies involved	Name	-	BT - Concert (joint-venture)	MCI, UUNet CompuServe
	Activity	-	Telecom operator	Telecom operator, Internet Service Provider, Online Service Provider
Infrastructure provided	Coverage	Nationwide	Nationwide	Amsterdam, planned connection of a number of cities in the Randstad
	Media characteristics	Ether transmission network	In 1996: 1000 km fiber-optic network, should be doubled already	62 km of fibre optic cable around Amsterdam P: connections of a number of cities in the Randstad, MAN of 40 km in Rotterdam
	Bandwidth	-	Frame Relay: 2 Mb/s, Leased lines: 2 Mb/s, 140 Mb/s; P: ATM	The starting speed of the Amsterdam network will be 155 Mbps/fibre optic pair; can be extended to 622 Mbs or even 2,5 Gbps
Services provided	Voice services	-	Y : carrier select services; P: Mobile telephony (E-GSM/DCS-1800)	Y
	Data services	-	Y	Y
	Image services	Y	-	-
	Management services	-	Y: Syncordia Services	-
	Value-added services	-	Y: Calling card, application services (e-mail, voice mail, etc.), Inbound services (call centres etc.), VPN, 0800/0900 services, Virtual ISP services, frame relay	Y: VPN, Internet, frame relay, LAN interconnect, consulting
Contents provided				
Customer targets	Companies	Y	Y	Y
	Institutions	-	-	Y
	General public	Y	P	Not in Europe
Comments		-	Telfort was awarded a mobile telephony license (E-GSM/DCS-1800) in February 1998	

Portugal

Company/Entity Sector		EDP Electricity utility	Transgas Gas utility	GDP Gas utility	CP Railroad operator	BRISA Motorway company	TV CABO Portugal Cable TV operator
Name of the telecom venture		ETG (joint-venture)			-	-	
Major other companies involved	<i>Name</i>	-			-	-	
	<i>Activity</i>	-			-	-	
Infrastructure provided	<i>Coverage</i>	Nationwide			Nationwide	Nationwide	Nationwide
	<i>Media characteristics</i>	Radiolinks, fiber-optic lines			Metallic & fiber-optic cables	Radiolinks, fiber-optic lines	Satellite reception, fiber-optic & coaxial cables
	<i>Bandwidth</i>	-			-	-	
Services provided	<i>Voice services</i>	P			-	-	
	<i>Data services</i>	P			-	-	
	<i>Image services</i>	-			-	-	Y
	<i>Management services</i>	-			-	-	
	<i>Value-added services</i>	Y			-	-	Y
Contents provided							
Customer targets	<i>Companies</i>	P					Y
	<i>Institutions</i>	-			-	-	Y
	<i>General public</i>	P			-	-	Y
Comments		<i>Intends to become the 2nd fixed telecom operator, in January 2000</i>			-	<i>The 2nd phase of privatisation took place in November 1998. At present, 65% of Brisa belongs to private investors.</i>	<i>The far biggest CATV operator; now offers three optional Pay-TV channels</i>

Portugal

Company/Entity		TMN	TELECEL	OPTIMUS
Sector		Mobile Telecom Operator	Mobile Telecom Operator	Mobile Public Telecom Operator
Name of the telecom venture				
Major other companies involved	<i>Name</i>			
	<i>Activity</i>			
Infrastructure provided	<i>Coverage</i>	Nationwide	Nationwide	Nationwide
	<i>Media characteristics</i>	Hertzian transmission	Hertzian transmission	Hertzian transmission
	<i>Bandwidth</i>	Analog, GSM 900 MHz & DCS 1800 MHz	GSM 900 MHz & DCS 1800 MHz	GSM 900 MHz & DCS 1800 MHz
Services provided	<i>Voice services</i>	Y	Y	Y
	<i>Data services</i>	Y	Y	N
	<i>Image services</i>	N	N	N
	<i>Management services</i>			
	<i>Value-added services</i>	Y	Y	Y
Contents provided				
Customer targets	<i>Companies</i>	Y	Y	Y
	<i>Institutions</i>	Y	Y	Y
	<i>General public</i>	Y	Y	Y
Comments			<i>Now also operates with DCS 1800 MHz</i>	<i>Operates since mid September 1998</i>

Spain

Company/Entity Sector		Canal de Isabel II Water supplier	Sevillana de Electricidad Electricity utility	RENFE Railway company
Name of the telecom venture		Canal de Comunicaciones Unidas	Nuintel / Secomtel	-
Major other companies involved	Name	-	-	Endesa
	Activity	-	-	Basic Telephony
Infrastructure provided	Coverage	Madrid	Andalucia and Badajoz	Nationwide
	Media characteristics	Radiolinks, 200 km fiber-optic lines	540 km fiber-optic lines, trunking and cable facilities	2530 km fiber-optic
	Bandwidth	Basically, 2 Mbit/s	-	-
Services provided	Voice services	Basic/Mobile Telephony	Basic Telephony	Basic/Mobile Telephony
	Data services	Data Transmission	Data transmission	-
	Image services	Digital TV	Cable TV	Digital TV
	Management services	-	-	-
	Value-added services	Trunking (Moviflot)	Y : Paging, Trunking, Radio-link	-
Contents provided		-	-	-
Customer targets	Companies	Y	-	-
	Institutions	-	-	-
	General public	-	Y	-
Comments		Strategy not defined yet	Mobile telephony (through Airtel)	Looking for other alliances. In November Jazztel (a new operator) signed a leasing agreement with RENFE for using the RENFE's infrastructure during twenty years.

Spain

Company/Entity		ENAGAS	ENDESA	METRO	R.E.E
Sector		Gas utility	Electricity utility	Railway company	Electricity management
Name of the telecom venture		-	GET (Grupo Eléctrico de Telecomunicaciones)		
Major other companies involved	Name	-	Airtel/Retevision		Retevision
	Activity	-	Mobile/Basic Telephony		Mobile/Basic telephony and TV
Infrastructure provided	Coverage	Spain, (P: Portugal)	Spain	Madrid city	Spain
	Media characteristics	-	30.000 Kms of fiber-optic (10.000 Kms rented to Retevision)	More than 150 km fiber optic	10,000 km fiber-optic
	Bandwidth	-		Basically, 2 Mbits/s	Basically, 2Mbits/s
Services provided	Voice services	-	Mobile/Basic telephony	Basic telephony	Basic/Mobile telephony
	Data services	-		Data transmission	Data transmission
	Image services	-	Cable/Digital TV	Cable/Digital TV	Digital TV
	Management services	-			
	Value-added services	-			
Contents provided		-			
Customer targets	Companies	-			
	Institutions	-			
	General public	-			
Comments		Strategy not defined yet	Strategy focused on communication service diversification	Improvement and fast increase of telecommunication services	Strategy not defined yet

Spain

Company/Entity		IBERDROLA	AENA
Sector		Electricity management	Public Airports management
Name of the telecom venture			
Major other companies involved	Name	Telefonica Company	
	Activity	Mobile/Basic Telephony and Value Added Services	
Infrastructure provided	Coverage	Spain and Latin America	Spain and Latin America
	Media characteristics	3,000 km fiber-optic; 4,000km radio-link systems; 40,000 km wages carrying systems	15 Million metros cable network, distributed fibre-optic network for the main airports
	Bandwidth	2 Mbits/s	34 Mbits/s
Services provided	Voice services	Basic/Mobile telephony	Basic/Mobile Telephony
	Data services	Corporate Data Transmission	Data transmission
	Image services	Digital TV	Digital TV
	Management services		
	Value-added services	Radio-link	Radio-link, Trunking
Contents provided			
Customer targets	Companies		Y
	Institutions		
	General public		
Comments		Strategy based on telecommunication activity diversification and renting its infrastructure to operators	Development of an own integrated (data, voice and image) network (RECOA) and to rent its infrastructure to main operators

Spain

Company/Entity		UNIÓN FENOSA	AUMAR
Sector		Electricity management	Highways Company
Name of the telecom venture		UFINET	–
Major other companies involved	<i>Name</i>	Retevisión/Airtel/CyC/Canal de Comunicaciones Unidas/Gallego Cable/IPT/Cesatel/Sogatel	
	<i>Activity</i>	Mobile/Basic Telephony, Cable TV and Value Added Services	
Infrastructure provided	<i>Coverage</i>	Central and north-western Spain	Tarragona, Castellón, Valencia, Alicante, Sevilla and Cádiz.
	<i>Media characteristics</i>	1,500 km fiber-optic	Currently is developing a wide fiber-optic line in the A7 Highway
	<i>Bandwidth</i>	–	Basically, 2 Mbits/s
Services provided	<i>Voice services</i>	–	Radio-mobile telephony
	<i>Data services</i>	Corporate Data Transmission	Corporate data transmission
	<i>Image services</i>		
	<i>Management services</i>	Y	
	<i>Value-added services</i>	Y	Telecontrol and telesign systems
Contents provided			
Customer targets	<i>Companies</i>		P
	<i>Institutions</i>	P	P
	<i>General public</i>		
Comments		<i>Strategy based on making profitable the surplus capacity, rights of way and infrastructure.</i>	<i>It is planned relevant investments for implementing communication services and remote control systems.</i>

Spain

Company/Entity		AUTOPISTAS Concesionaria Española	CORREOS Y TELEGRAFOS
Sector		Highways Company	Mail and Telegraph Company
Name of the telecom venture		–	–
Major other companies involved	<i>Name</i>	–	–
	<i>Activity</i>	–	–
Infrastructure provided	<i>Coverage</i>	Girona, Barcelona, Tarragona, Lleida, Zaragoza	Spain (national-wide)
	<i>Media characteristics</i>	SDH/PDH multiplex network (twisted pair cable), IP network, fiber-optic	949kms of fibre-optic lines, 2726 kms of aerial and underground cable, 3882 kms of backbone network and VSAT satellite
	<i>Bandwidth</i>	155 Mps and 2/8 Mps	34 Mbits/s-140 Mbits/s
Services provided	<i>Voice services</i>	Basic/Mobile telephony	Voice transmission
	<i>Data services</i>	Corporate data transmission	Data transmission
	<i>Image services</i>	Analogical video transmission	
	<i>Management services</i>	Consulting and engineering	
	<i>Value-added services</i>	Tele-control, SOS poles, Variable message signs, traffic control, geographical information system, tunnel control	
Contents provided			
Customer targets	<i>Companies</i>	P	
	<i>Institutions</i>	State roads and General Traffic Department	Public Institutions
	<i>General public</i>	Y	
Comments		<i>The new projects are focused on Intelligent Transport Systems (ITS)</i>	<i>Strategy not defined yet</i>

Sweden

Company/Entity Sector		Banverket AB Railway company	Teracom AB Broadcasting company	NSAB - Nordisk Satellit AB Satellite operator		
Name of the telecom venture		Banverket Telenät	Teracom's network unit	-		
Major other companies involved	Name	-	-	Teracom AB (37,5%)	Rymdbolaget AB (37,5%)	Tele Danmark (25%)
	Activity	-	-	Broadcasting	Space research and industry	PTO
Infrastructure provided	Coverage	Nationwide	Nationwide	European		
	Media characteristics	10 000 km fibre-optic lines, SDH transmission, WDM - Wavelength Division Multiplex	Radio relay link system, SDH transmission	Three satellites in orbit (the last one launched 10th November, 1997, One more planned to be launched in August, 1998).		
	Bandwidth	2-622 Mbit/s	155 Mbit/s	Up to 40 Mbit/s per sender		
Services provided	Voice services	-	-	-		
	Data services	Y	Y	Y		
	Image services	-	Y	Y		
	Management services	-	-	-		
	Value-added services	-	-	-		
Contents provided		-	-	-		
Customer targets	Companies	Y: mainly alternative telecom operators	Y	Y : Content providers + other companies		
	Institutions	-	Y	-		
	General public	-	-	-		
Comments		<i>Leasing lines only.</i>	<i>Leasing lines only. Teracom is currently developing the digital network that will give the whole population of Sweden access to digital TV.</i>	<i>On the 5 of October NSAB launched its third satellite, Sirius 3. Within a year Sirius 3 will replace Sirius 1.</i>		

Sweden

Company/Entity Sector		Affärsverket Svenska Kraftnät Electricity utility	AB Stokab WAN (or City network)	Netcom System AB Cable TV
Name of the telecom venture		Drifftelenätet	-	Kabelvision
Major other companies involved	Name	-	-	-
	Activity	-	-	-
Infrastructure provided	Coverage	Stockholm, Gothenburg, Malmö	The County of Stockholm	Nationwide
	Media characteristics	1800 km fibre-optic lines	A comprehensively covering optofibre city network	Coaxial copper cable
	Bandwidth	Black fibre: bandwidth depending on transmission technology choice made by customer	Dark fibre: bandwidth depending on transmission technology choice made by customer	-
Services provided	Voice services	-	-	Needs digitisation
	Data services	Y	-	Needs digitisation
	Image services	-	-	Y
	Management services	-	-	-
	Value-added services	-	-	-
Contents provided		-	-	-
Customer targets	Companies	Y : Tele2 + other operators	Y	-
	Institutions	-	Y	-
	General public	-	Y	Y
Comments		Leasing lines only	Leasing lines only. Today Stokabs network almost reaches to the whole of Stockholm County.	Analog network : the digitalising process has started and is forecast to be finished in 1999.

Sweden

Company/Entity Sector		Stjärn TV- Nätet AB Cable TV	Sweden On Line AB Cable TV
Name of the telecom venture		-	-
Major other companies involved	Name	-	-
	Activity	-	-
Infrastructure provided	Coverage	Stockholm	Nationwide
	Media characteristics	Coaxial copper cable	Coaxial copper cable
	Bandwidth	10 Mbits/s	-
Services provided	Voice services	N: partly digitised	Needs digitisation
	Data services	Y	Needs digitisation
	Image services	Y	Y
	Management services	-	-
	Value-added services	-	-
Contents provided		-	-
Customer targets	Companies	Y	-
	Institutions	-	-
	General public	Y	Y
Comments		<i>Stjärn TV has made an investment of MSEK 200 in order to develop digital TV, Internet access and Internet telephony</i>	<i>DECT tests (with Ericsson) for mobile activity</i>

UK

Company/Entity		National Grid	British Rail	South Western Electricity Board	London Underground Limited
Sector		Electricity utility	Railway company	Electricity utility	Metro company
Name of the telecom venture		Energis	Racal Telecom	-	Televenture
Major other companies involved	<i>Name</i>	-	-	-	-
	<i>Activity</i>	-	-	-	-
Infrastructure provided	<i>Coverage</i>	Nationwide	Nationwide	Southwestern England	Greater London
	<i>Media characteristics</i>	Over 5000 km fiber-optic cables, will be 6,500 by end of March 99	5700 km fiber-optic cables	-	Dark and optical fibers
	<i>Bandwidth</i>	-	-	-	-
Services provided	<i>Voice services</i>	Y	Y	Y	-
	<i>Data services</i>	Y	Y	Y	-
	<i>Image services</i>	-	-	-	-
	<i>Management services</i>	Y	Y	-	-
	<i>Value-added services</i>	Y : Internet, VPN, teleprotection, ISP owner	Y : VPN / dark fibre	-	-
Contents provided				-	
Customer targets	<i>Companies</i>	Y	Y	-	Y
	<i>Institutions</i>	Y	Y	Y : intenal only	-
	<i>General public</i>	-	-	-	-
Comments		<i>PTO licence holder</i>	-	<i>PTO licence holder</i>	<i>PTO licence holder</i>

UK

Company/Entity		Scottish Power	United Utilities plc	Eastern Group plc
Sector		Electricity utility	Multi utility	Gas & Electricity Utility
Name of the telecom venture		Scottish Telecom	NOR.WEB DPL	Eastern Group Telecoms Ltd
Major other companies involved	Name	-	Nortel & Norweb Communications	-
	Activity	-	Telecoms/Electricity Supply	-
Infrastructure provided	Coverage	Scotland/NW England	Northwestern England	South and Eastern England
	Media characteristics	Fiber-optic cables	Fiber-optic cables	Fibre-optic cables
	Bandwidth		1 megabit/second (data)	-
Services provided	Voice services	Y	Y	
	Data services	Y	-	
	Image services	-	-	
	Management services	-	-	Y
	Value-added services	Y : Internet, call centre, ISP owner	Y : Internet	dark fibre or managed bandwidth
Contents provided			-	-
Customer targets	Companies	Y	Y	Y
	Institutions	-	-	-
	General public	Y	Y	Y
Comments		PTO licence holder	-	PTO licence holder

UK

Company/Entity		Marconi Communications/British Waterways	Atlantic Telecom Group plc
Sector		Telecoms equipment	Cable & satellite TV
Name of the telecom venture		Fibreway	Atlantic telecom Ltd
Major other companies involved	<i>Name</i>	British waterways	-
	<i>Activity</i>	Canal operator	-
Infrastructure provided	<i>Coverage</i>	National	Scotland - Fixed Radio Access & National for traditional
	<i>Media characteristics</i>	10,000 km fibre-optic cables	
	<i>Bandwidth</i>	broadband	-
Services provided	<i>Voice services</i>	Y	Y
	<i>Data services</i>	Y	Y
	<i>Image services</i>	Y	Y
	<i>Management services</i>	Y	-
	<i>Value-added services</i>	dark fibre, network build & maintenance	Internet, ISDN
Contents provided		-	-
Customer targets	<i>Companies</i>	Y	Y
	<i>Institutions</i>	Y	-
	<i>General public</i>	Y	Y
Comments		<i>PTO licence holder</i>	<i>PTO licence holder</i>