

# State of South Dakota

SEVENTY-SECOND SESSION  
LEGISLATIVE ASSEMBLY, 1997

446A0416

HOUSE STATE AFFAIRS COMMITTEE

ENGROSSED NO. **HB1227** - 2/19/97

Introduced by: Representatives Jorgensen, Barker, Cutler, Fischer-Clemens, Hagen, Pederson (Gordon), Roe, and Schaunaman and Senators Everist, Dunn (Jim), Halverson, Morford-Burg, Munson (David), Olson, Shoener, Symens, Thompson, and Whiting

1 FOR AN ACT ENTITLED, An Act to establish the policy that will guide and direct the creation  
2 of a new advanced telecommunication infrastructure across South Dakota.

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF SOUTH DAKOTA:

4 Section 1. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as  
5 follows:

6 It is the intent of the Legislature that South Dakota have a telecommunications infrastructure  
7 that meets the advanced communication needs of the state's individual citizens and its  
8 communities of interest, including our schools, medical facilities, businesses, and all levels of  
9 government. To achieve this intent, three new networks, accessible by all South Dakotans, will  
10 be established: a narrowband network, a wideband network, and a broadband network.  
11 Together, these three networks will form South Dakota's new advanced Public Communications  
12 Network Infrastructure. This infrastructure will enable any-to-any voice, data,  
13 videoconferencing, graphics, imaging, and multimedia communications. These three networks  
14 will fully support the following capability requirements: ubiquitous, feature rich, standard, secure,

1 private, survivable, robust, addressable, switched, symmetric, affordable, and available.  
2 Communications services will be reasonably and affordably priced to promote the growth and  
3 usage of each of these three new networks, leveraging the power of technology to provide ever-  
4 increasing bandwidths at ever-diminishing cost of facilities. Classes of service will be created for  
5 network services in order to establish a new service-based and value-based pricing model. The  
6 new narrowband, wideband, and broadband communications networks will be established in a  
7 manner ensuring that all the citizens of South Dakota realize the advantages of the forthcoming  
8 information age, including economic development, educational opportunities, a heightened level  
9 of medical care, and better, more efficient service from all levels of government.

10 Section 2. That § 49-31-1 be amended to read as follows:

11 49-31-1. Terms used in this chapter mean:

- 12 (1) "Addressable," enabling users to connect and communicate with a specific party easily  
13 and securely on a dial-up, addressable basis;
- 14 (2) "Affordable," reasonably priced to promote the growth and usage of the network,  
15 leveraging economies of scale and the power of technology to provide ever-increasing  
16 bandwidths at ever-diminishing cost of facilities;
- 17 (3) "ASC," Applications Service Center, a service platform owned by network providers  
18 or non-network providers, or both, which delivers communications features and  
19 services to customers, including database access, protocol conversion, rate adaption,  
20 and bridging;
- 21 (4) "ATM," Asynchronous Transmission Mode, a broadband switching standard defined  
22 by CCITT and the ATM Forum standard setting groups;
- 23 (5) "Available," ensuring that network services are available if the user requires them,  
24 even at times of peak usage; designed to be a non-blocking network, minimizing  
25 network contention;

- 1       (6)   "B ISDN," Broadband ISDN, a networking standard set by ATM Forum and CCITT's  
2       international standards;
- 3       (7)   "Broadband network," the broadband network extends the range of fully switched,  
4       symmetric, addressable, robust transport services over the fiber network, utilizing  
5       SONET rates which increase in multiples of OC-1 (51.84 Mbps), including OC-3  
6       (155.52 Mbps) and OC-12 (622.08 Mbps). The broadband network will use one or  
7       more of the following switching technologies; ATM, STM, and channel switching,  
8       which will support the broadband ISDN UNI/NNI and SONET interfaces as defined  
9       by the ATM Forum, ANSI, and ITU-CCITT standards groups;
- 10      (8)   "Business community of interest," for the purposes of the deployment goals of this  
11      Act, the business COI shall include all incorporated municipalities in South Dakota;
- 12      ~~(9)~~(9) "Centron and centron-like services," services which provide custom switching features  
13      which include distributive dial tone, select number screening, toll restriction and  
14      screening, nonattendant busy out, nonattend and call transfer, and select trunk hunting  
15      and screening;
- 16      (10) "Class of service," one of potentially several categories into which a service is broken,  
17      reflecting its use and value to end users and allowing more specific service-based and  
18      value-based pricing by classification of service;
- 19      ~~(11)~~(11) "Commission," the public utilities commission;
- 20      ~~(12)~~(12) "Common carrier," anyone who offers telecommunications services to the public;
- 21      (13) "Communities of interest (COI)," major market sectors formed by a grouping of  
22      communication users based upon their inter-communication needs and their pattern  
23      of movement and manipulation of voice, data, and video information. COIs may cross  
24      industry boundaries, and they include the medical COI, education COI, business COI,  
25      and government COI;

1       (14) "Education community of interest," for the purposes of the deployment goals of this  
2             Act, the education COI shall include all public and private elementary and secondary  
3             schools, all universities and other post-secondary institutions, and all RDTN sites in  
4             South Dakota;

5       (15) "Feature rich," providing the specific features and functionality required by users'  
6             voice, data, video, graphics, imaging, and multimedia applications; functionally  
7             beyond mere transport;

8       (16) "Government community of interest," for the purposes of the deployment goals of this  
9             Act, the government COI shall include all county seats;

10       (17) "ISDN, nISDN, wISDN," Integrated Services Digital Network, narrowband ISDN,  
11             wideband ISDN, an end-to-end fully digital network, supporting the standard user  
12             interfaces of BRI (Basic Rate Interface), PRI (Primary Rate Interface), H0 (384  
13             Kbps), and H11 (1.536 Mbps), as defined by CCITT's international standards for  
14             ISDN. The CCITT is part of the International Telecom Union (ITU);

15       ~~(4)~~(18) "LATA," a local access and transport area;

16       ~~(5)~~(19) "Local exchange service," the access and transmission of two-way switched voice  
17             communications within a geographic territorial unit established by a  
18             telecommunications company for the administration of telecommunications services;

19       (20) "Medical community of interest," for the purposes of the deployment goals of this  
20             Act, the medical COI shall include all: Essential Access Community Hospitals  
21             (EACH), Rural Primary Care Hospitals (RPCH), and major hospitals with more than  
22             fifty beds;

23       (21) "Narrowband network," a fully switched digital network covering the transport range  
24             from 0 to 144,000 bits per second (144 Kbps), offering two 64 Kbps information B  
25             (Bearer) channels and a 16 Kbps signaling D (Delta) channel such that the two 64

1           Kbps channels can be coalesced to achieve 128 Kbps information transport using  
2           ISDN BRI international ITU-CCITT standards providing both B channels circuit and  
3           B channel packet switching capabilities;

4       ~~(6)~~(22) "New products and services," any new product or service introduced after July 1,  
5           1988, which is not functionally required to provide local exchange service.  
6           Repackaging of any product or service which is fully competitive with any service  
7           regulated as emerging competitive or noncompetitive is not considered a new product  
8           or service;

9       (23) "NNI," Network nodal interface, a standard broadband interface as defined by CCITT  
10           and the ATM Forum standard setting groups;

11       ~~(7)~~(24) "Optional service," a limited or discretionary service offered by a telecommunications  
12           company which is not functionally required for the provision of noncompetitive  
13           services and which the customer has the option to purchase;

14       (25) "Private," ensuring confidentiality and integrity of network transport of messages  
15           without dependency on specialized customer premise security devices;

16       ~~(8)~~(26) "Rate of return regulation," the procedure used by the commission to approve the  
17           charge for a service which gives due consideration to the public need for adequate,  
18           efficient and reasonable service and to the need of the public utility for revenues  
19           sufficient to enable it to meet its total current cost of furnishing such service, including  
20           taxes and interest, and including adequate provision for depreciation of its utility  
21           property used and necessary in rendering service to the public, and to earn a fair and  
22           reasonable return upon the value of its property;

23       (27) "Robust," easily and economically sustaining the rigors of growth and extensive public  
24           use;

25       (28) "Secure," physically precluding unwanted access to network and information;

- 1        (29) "SONET," Synchronous Optical Network, an optical interface standard set by the  
2        ANSI and CCITT standard setting groups;
- 3        (30) "Standard," supporting universal interfaces and networking standards and protocols  
4        of generally accepted standards setting bodies;
- 5        (31) "STM," Synchronous Transfer Mode, a broadband switching technology;
- 6        (32) "Survivable," ability to maintain service while enduring natural events and human  
7        actions hostile to the network;
- 8        (33) "Switched," providing circuit, packet, or channel type switching, each suited to  
9        specific application requirements;
- 10       (34) "Symmetric," establishing two-way communication with equal bandwidth both ways;
- 11       ~~(9)~~(35)"Telecommunications company," any person, trustee, lessee or receiver owning,  
12       operating, managing or controlling in whole or in part, any telecommunications line,  
13       system or exchange in this state, directly or indirectly, for public use. All  
14       telecommunications companies are common carriers;
- 15       ~~(10)~~(36)"Telecommunications service," the transmission of signs, signals, writings, images,  
16       sounds, messages, data or other information of any nature by wire, radio, lightwaves,  
17       electromagnetic means or other similar means. It does not include the provision of  
18       terminal equipment used to originate or terminate such service, broadcast  
19       transmissions by radio, television and satellite stations regulated by the federal  
20       communications commission and one-way cable television service; ~~and~~
- 21       (37) "Ubiquitous," universally accessible, available across South Dakota;
- 22       (38) "UNI," User network interface, a standard broadband interface as defined by CCITT  
23       and the ATM Forum standard setting groups;
- 24       ~~(11)~~(39)"Universal service," a service which is, as far as possible, a rapid, efficient  
25       telecommunications service with adequate facilities available to all the people of South

1           Dakota at a reasonable charge; and

2       (40) "Wideband network," the wideband network extends the range of fully switched,

3           digital, addressable information transport from the BRI rate of 144 Kbps to the DS3

4           rate of 44.736 Mbps, including the DS1 and DS2 rates of 1.544 Mbps and 6.312

5           Mbps, respectively. The wideband network physically encompasses two transport

6           mediums; it utilizes the expanded capabilities of the copper wire telephone network,

7           as well as fiber optic networking facilities. The wideband network includes new local

8           fiber facilities and rings utilizing the virtual tributary sub-SONET rates access

9           switches to provide direct local public network access close to the customer

10          supporting a variety of network switching technologies and interfaces, including one

11          or more of the following: (a) Fractional ISDN-NX 64 Kbps & NX BRI: ranging from

12          128 Kbps to 45 Mbps, (b) Wideband ISDN: Primary Rate ISDN (PRI) @ 23B (64

13          Kbps) + D (64 Kbps) H0, H11.

14       Section 3. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as

15 follows:

16       South Dakota's Public Communications Network Infrastructure shall be composed of three

17 networks: a narrowband network, a wideband network, and a broadband network.

18       Section 4. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as

19 follows:

20       The narrowband network is fully switched, digital network covering the transport range from

21 0 to 144,000 bits per second (144 Kbps), offering two 64 Kbps information B (Bearer) channels

22 and a 16 Kbps signaling D (Delta) channel such that the two channels can be coalesced to

23 achieve 128 Kbps information transport using ISDN international ITU-CCITT standards

24 providing both B channel circuit and B channel packet switching capabilities.

25       Section 5. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as

1 follows:

2 To encourage usage of the narrowband network, fully digital and switched transport at  
3 narrowband's 64/128 Kbps rates shall be reasonably and affordably priced. Data traffic shall be  
4 encouraged to use the narrowband network, which shall be designed with the specific feature and  
5 traffic handling capabilities to handle ever-increasing loads of data and video users.

6 Section 6. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as  
7 follows:

8 If commercially available, the narrowband network shall utilize an ISDN address scheme,  
9 including standard interfaces, to support private-to-public-to-private inter-networking. The  
10 narrowband network shall establish any-to-any connectivity for data and videoconferencing  
11 communications on a dial-up basis. It shall be allowed to overlay the existing voice telephone  
12 network, supporting data and video conferencing traffic and shall become fully integrated with  
13 the existing voice network. The narrowband network shall utilize a base-satellite fully digital  
14 architecture, where stand-alone remote switches located in smaller communities will home-in on  
15 larger host switches. This architecture shall allow local switching within a community for  
16 emergency services in the event that the link to the host is cut.

17 Section 7. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as  
18 follows:

19 The deployment goal for the narrowband network is to achieve ubiquitous deployment across  
20 South Dakota within five years, with significant results achieved within two years where seventy-  
21 five percent of each of the four strategic communities of interest (education COI, medical COI,  
22 business COI, and government COI) are provided access to the narrowband network.

23 Section 8. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as  
24 follows:

25 The wideband network shall physically encompass at least two transport mediums. It shall

1 utilize the capabilities of the copper wire telephone network, as well as fiber optic facilities and  
2 rings. The wideband network shall extend the range of fully digital and switched, fully  
3 addressable information transport from 144 Kbps to 44.736 Mbps, including the DS1 and DS2  
4 rates of 1.544 Mbps and 6.312 Mbps. Wideband users shall be provided access to multiples of  
5 the 64 Kbps channels up to the 44.736 Mbps rate over a fully interactive, switched, symmetric-  
6 two way, fully addressable, robust, secure, survivable transport network. The wideband network  
7 includes local fiber facilities and ring type architectures at up to DS3 (44.736 Mbps), utilizing  
8 the virtual tributary sub-SONET rates. This architecture shall provide robust, diverse routing in  
9 the local loop. Class level switching nodes shall be located close to the customer, to extend the  
10 class level hierarchy. The wideband access switches will provide direct local public network  
11 access, supporting a variety of network switching technologies and interfaces, facilitating public-  
12 to-private inter-networking including one of more of the following:

- 13 (1) Fractional ISDN - N X 64 Kbps and N X BRI: ranging from 128 Kbps to 44.736  
14 Mbps;
- 15 (2) Wideband ISDN: Primary Rate ISDN (PRI) @ 23B (64 Kbps) + D (64 Kbps), H0  
16 H11.

17 Section 9. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as  
18 follows:

19 The wideband fully switched, addressable, supportable, growable, integrated network  
20 architecture shall support the open access requirements of the federal Telecommunications Act  
21 of 1996. It shall allow alternative resellers to provide transport to customers via these new local  
22 fiber rings, while isolating and isolate their activities from the critical class 5 switch functions.  
23 Users and emerging ISPs (Information Service Providers), and ESPs (Enhanced Service  
24 Providers) shall be able to either access or bypass the public network's higher level class 5 and  
25 broadband's future super 5 switches offerings when communicating locally or regionally with an

1 ASC (Applications Service Center), or globally via an IXC's (Inter Exchange Carrier's), ATP's  
2 (Alternative Transport Provider's), CAP's (Competitive Access Provider's) POP (Point of  
3 Presence).

4 Section 10. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as  
5 follows:

6 The broadband network shall extend the range of fully switched, symmetric, addressable,  
7 robust transport services over the fiber network, utilizing SONET rates which increase in  
8 multiples of OC-1 (51.84 Mbps) including OC-3 (155.52 Mbps) and OC-12 (622.08 Mbps),  
9 while using the broadband ISDN UNI/NNI & SONET interfaces. ATM, STM, or channel  
10 switching shall be provided with advanced operational support systems that use expanding  
11 network management capabilities to ensure the ongoing support of the network infrastructure  
12 when commercially available. This protects the citizens of South Dakota from disrupted or failed  
13 communications because of increased traffic loads.

14 Section 11. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as  
15 follows:

16 It is the intent of the Legislature, that:

17 (1) The Public Communications Network Infrastructure will grow and enhance with  
18 expanding user needs and advancements in technologies' bandwidth and feature  
19 capabilities;

20 (2) The three networks (narrowband, wideband, and broadband) will transport  
21 information in fully switched, secure, survivable communications;

22 (3) This layered network hierarchy, based upon a fully integrated SONET backbone of  
23 interconnected switched survivable rings, will carry independent and fully integrated  
24 voice, data, and video communications; and

25 (4) The network architecture will enable access and interconnection points for public-to-

1 public, public-to-private, and wireline-to-wireless inter-networking.

2 Section 12. That chapter 49-31 be amended by adding thereto a NEW SECTION to read as  
3 follows:

4 It is the intent of the Legislature that all of the future rules, policies, actions, and decisions  
5 of the State of South Dakota and all its political subdivisions, and the actions and decisions of  
6 its offices and employees, shall be made consistent with and further the purposes and directives  
7 of this Act.

1 **BILL HISTORY**

2 1/31/97 First read in House and referred to State Affairs. H.J. 243

3 2/10/97 Scheduled for Committee hearing on this date.

4 2/14/97 Deferred to another day. H.J. 482

5 2/19/97 Scheduled for Committee hearing on this date.

6 2/19/97 State Affairs Do Pass Amended, Passed, AYES 10, NAYS 3.

7 2/19/97 State Affairs Title Amended.