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A NAME DATA BASE ON A MICRO-COMPUTER, AN EFFICIENT  
TOOL FOR THE COMPILATION OF A SCHOOL ATLAS

Presented by Prof. E. Spiess, Zurich

# UNITED NATIONS GROUP OF EXPERTS ON GEOGRAPHICAL NAMES

## DUTCH AND GERMAN-SPEAKING DIVISION

### **A Name Data Base on a Micro-Computer, an Efficient Tool for the Compilation of a School Atlas**

presented by Prof.E.Spiess, Zurich

Computer processing of geographical names for the production of national gazetteers is a widely used and proven technique. The link between such a toponymic data base and the production of maps and atlases may be less common. This short report gives some details about a name data base that has been established for the compilation of the Swiss school atlas. This atlas is published in three different editions, one for each official language of our country (Schweizer Weltatlas, Atlas mondial suisse, Atlante mondiale svizzero). This data base resides on a micro-computer.

The data base is designed to serve the following production steps: assistance in map compilation, in type setting and in the preparation of the index. The atlas has 174 map pages and approx. 40 pages of names and subject indexes. The data base has for the time being 16000 entries and will finally contain some 25000 names that appear on one of the 350 maps. In view of the lower grades that will use this atlas too, German, French and Italian exonyms are used in the respective editions. Each of the three editions will have its own index. For each name the official or historical name is added, if it is different from that in the map. The index shows as well the map page, the location of the name by geographical coordinates to the minutes of the arc. Furthermore a symbol for the kind of feature and in some cases eventually also the pronunciation according to the IPA will be provided.

The data base is resident on the 20 MB hard disks of the three MACINTOSH SE stations of the secretariate and of the map authors. The data is secured by back-ups on tape and on diskettes. The file management software used is FileMaker Plus by Nashoba Systems. It allows to arrange very easily data in different user-defineable layouts for in- and output.

For the data entry layout so far 29 fields have been specified (see fig.1), including map page, map number, map feature code and correlated with it by a look-up table the complete code for type setting. The next fields are reserved for the name in German, in French and in Italian, for the official or historical name and for the state to which it belongs. The longitudes and latitudes of all the names of a map are digitized from the names manuscript or any other source map, including the graticule. These table coordinates are transformed into geographical coordinates by a bilinear spline- or Lagrange-interpolation within the graticule. The last fields allow for the indication of letter spacings in the map where desirable.

A problem that had to be solved was the adaption of the keyboard to the various letters with diacritics. The need for such special characters is of course much larger in a world atlas than for a national gazetteer. Some diacritics are e.g. available with a Yugoslavian keyboard, but never as many as are needed. We based our extention on the German keyboard that contains already the German ä, ö, ü, Ä, Ö, Ü and attributed to the keys, in combination with the option key additional characters with diacritics. Figure 2 shows the four characters that can be typed with each key in combination with the shift and/or the option key. These characters have been defined in a bit map mode, using the FONTASTIC software.

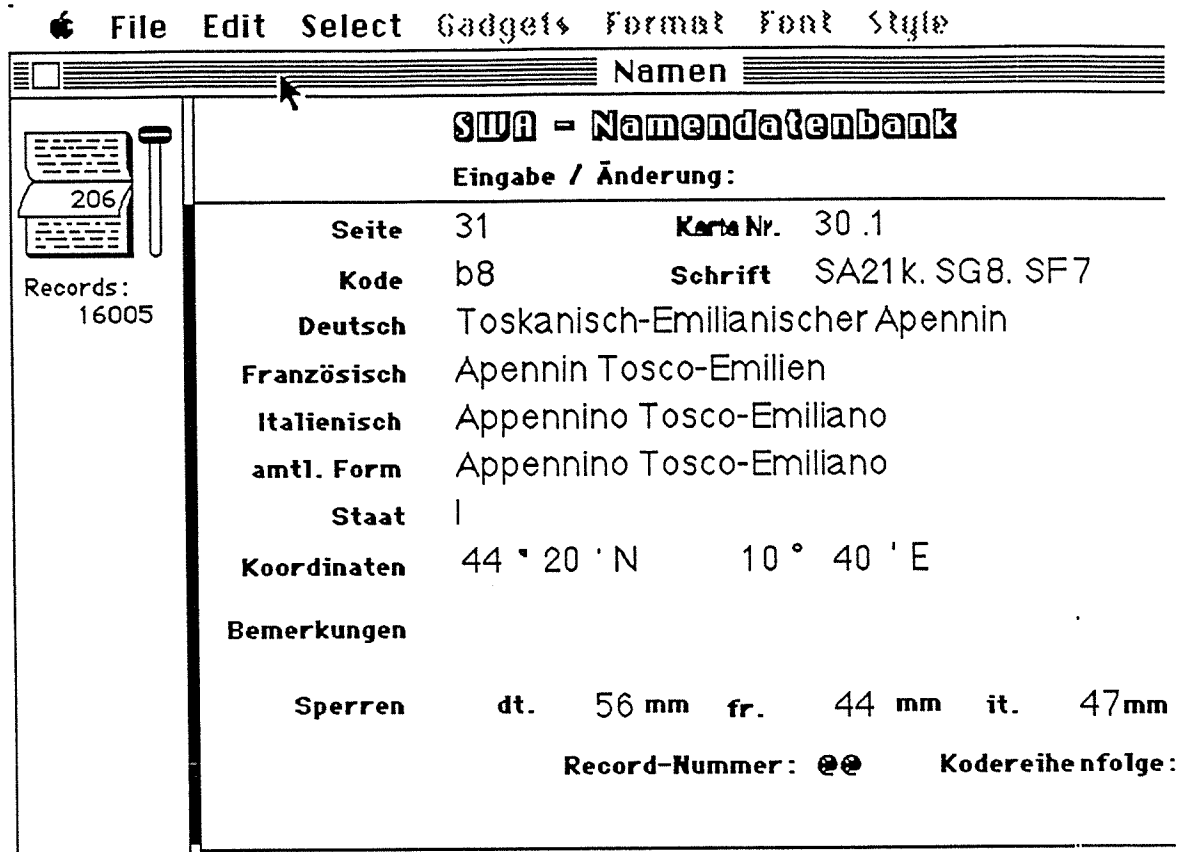
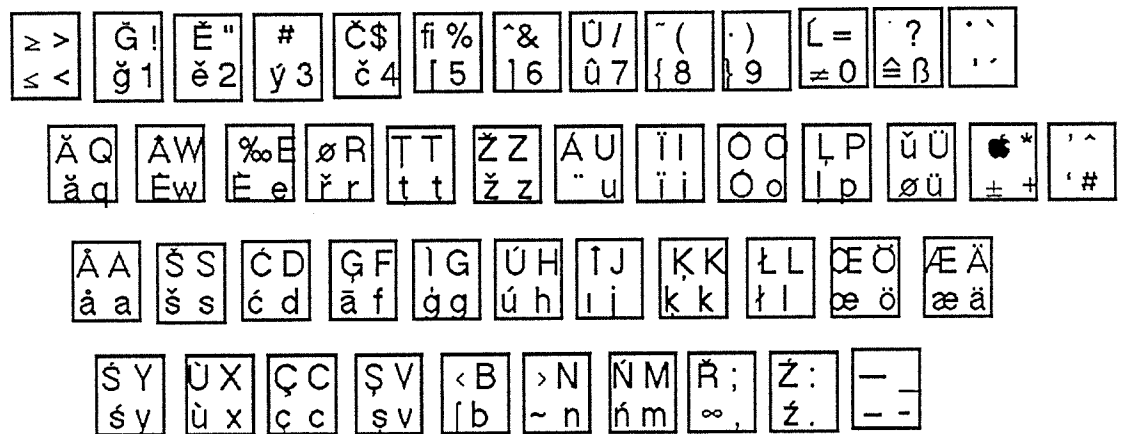


Fig. 1 Entry format for map, feature code, type style, names and coordinates on the display



□ for É, á, é, í, ó, ú ; □ for Ā, Ę, ł, Ō, Ū, à, è, ì, ò, ù ; □ for Ą, Ŏ, Ń, ą, ǫ, ñ

□ for Ā, Ę, ł, Ō, à, è, ì, ò, ù ; □ for Ą, Ę, Ŏ, Ū, ą, ǫ, ł, ǫ, ū

Fig. 2 Bit map designed GEO fonts based on the German keyboard

Kode:[mm] Deutsch

[mm] Französisch

[mm] Italienisch

Schrift: SA22. SG7. SF6,5

wenn Namen gleich wie Deutsch, nicht mehr absetzen

s10	Turin	Turin	Torino
s10	Rom	Rome	Roma
s10	Neapel	Naples	Napoli
s10	Tunis	Tunis	Tunisi
s10	Mailand	Milan	Milano

Schrift: SA22. SG6. SF5,8

wenn Namen gleich wie Deutsch, nicht mehr absetzen

s9	Genua	Gênes	Genova
s9	Palermo	Palerme	Palermo
s8	Bologna	Bologne	Bologna
s8	Nizza	Nice	Nizza
s8	Florenz	Florence	Florenz
s8	Sarajevo		
s8	Bari		
s8	Tarent	Tarente	Taranto
s8	Cagliari		
s8	Annaba		
s8	Messina	Messine	Messina
s8	Catania	Catane	Catania
s7	Mestre		
s7	Alessandria	Alexandrie	Alessandria
s7	Piacenza	Plaisance	Piacenza
s7	Parma	Parme	Parma
s7	Reggio		
s7	Modena	Modène	Modena
s7	Ferrara	Ferrare	Ferrara
s7	Ravenna	Ravenne	Ravenna
s7	Novi Sad		
s7	Rijeka		
s7	La Spezia		
s7	Pisa	Pise	Pisa
s7	Livorno	Livourne	Livorno
s7	Prato		
s7	Forlì		
s7	Rimini		
s7	Perugia	Pérouse	Perugia
s7	Terni		
s7	Ancona	Ancône	Ancona
s7	Pescara		
s7	Split	Split	Spalato
s7	Sassari		
s7	Torre del Greco		
s7	Salerno	Salerne	Salerno
s7	Foggia		

The output format can be designed to individual needs. Figure 3 shows with what layout the type setting manuscript is produced. Names are sorted according the type styles and sizes. Figure 5 on the other hand is a first proof for the three indexes, sorted according to the respective alphabet and provided with pictorial symbols for the map features that were prepared in a Mac Paint file.

But this data base offers a number of useful other features. There is for instance partly a considerable overlap between adjacent maps. For the compilation of the joining map sheet a search can be made by a range of coordinates (fig.4a and b) for all the names that appear also on the new sheet. The names found can then be duplicated and attributed also to the new sheet by simply replacing the map page. This way mistakes in spelling are kept well under control and so are equal type sizes for equal name categories.

The screenshot shows a window titled 'Namen' with a sub-header 'SWA - Namendatenbank'. Below this is a section 'Eingabe / Änderung:' containing several input fields. On the left side, there is a sidebar with a printer icon, 'Requests: 1', an 'Omit' checkbox, and a 'Find' button. The main area contains the following fields:

- Seite**: [ ]
- Karte Nr.**: 66
- Kode**: [ ]
- Schrift**: [ ]
- Deutsch**: [ ]
- Französisch**: [ ]
- Italienisch**: [ ]
- amtl. Form**: [ ]
- Staat**: [ ]
- Koordinaten**: 42..43° [ ] ' [ ] 12..13° [ ] ' [ ]

Fig. 4a Find all the names with 42° and 43° latitude and 12° and 13° longitude on map no.66

The screenshot shows the same 'Namen' window, but now displaying search results. The sidebar shows 'Records: 16005' and 'Found: 30'. The main area displays the following data:

Eingabe / Änderung:	
<b>Seite</b>	66
<b>Karte Nr.</b>	66
<b>Kode</b>	s7
<b>Schrift</b>	SA22. SG6. SF5
<b>Deutsch</b>	Perugia
<b>Französisch</b>	Pérouse
<b>Italienisch</b>	Perugia
<b>amtl. Form</b>	Perugia
<b>Staat</b>	
<b>Koordinaten</b>	43° 08 ' N 12° 24 ' E

Fig. 4b The first of 30 records found with the above request

112 Da Lat , VN	○	11°59'N 108°27' E	111 DehraDun , IND	●	30°23'N 78°06' E
112 Da Nang , VN	○	16°00'N 108°10' E	46 Delfzijl , NL	○	53°21'N 06°55' E
44 Dagenham , GB	○	51°24'N 0°10' E	111 Delhi , IND	●	28°42'N 77°14' E
62 Dalandzadgad , MON	○	43°33'N 104°17' E	72 Dellys , DZ	○	36°54'N 03°54' E
117 Dalnegorsk , SU	○	44°37'N 135°28' E	112 Dempo , RI	○	04°03'S 103°19' E
57 Dannemora , S	○	60°10'N 17°53' E	46 Den Helder , NL	○	52°59'N 04°46' E
51 Danzig (histor.) , PL, (amtl.) Gdańsk	●	54°25'N 18°40' E	112 Denpasar , RI	●	08°44'S 115°14' E
63 Daqing , VCR	●	46°34'N 125°10' E	61 Derbent , SU	○	42°05'N 48°11' E
61 Dardanellen , TR (amtl.) Çanakkale Boğazi	⋈	40°14'N 26°18' E	42 Derby , GB	●	52°56'N 01°30' W
42 Darlington , GB	●	54°32'N 01°32' W	72 Despeñaperros , E	⋈	38°23'N 03°32' W
38 Darmstadt , D	●	49°53'N 08°39' E	42 Devil's Hole , GB	⊖	56°36'N 00°41' E
42 Dartmoor , GB	○	50°38'N 03°59' W	42 Devon , GB	○	50°50'N 03°52' W
113 Daru , PGN	○	08°59'S 143°10' E	111 Dhule , IND	○	20°54'N 74°49' E
61 Darwasa , SU	○	40°16'N 58°19' E	111 Dibrugarh , IND	○	27°27'N 95°03' E
113 Darwin , AUS	●	12°29'S 130°58' E	62 Dickson , SU	○	73°33'N 80°40' E
61 Dastakert , SU	○	39°18'N 46°02' E	38 Dieburg , D	○	49°54'N 08°51' E
61 Daugavpils , SU	○	55°55'N 26°23' E	112 Dien Bien Phu , VN	○	21°21'N 103°03' E
30 Dauphiné-Alpen , F, (amtl.) Alpes du Dauphiné	▲	45°00'N 6°00' E	34 Dieppe , F	○	49°55'N 01°04' E
111 Davangere , IND	○	14°29'N 75°59' E	34 Digne , F	○	44°06'N 06°14' E
112 Davao , PI	○	07°06'N 125°31' E	30 Dijon , F	●	47°20'N 5°00' E
46 Davos , CH	○	46°49'N 09°51' E	112 Dili , RI	○	08°42'S 125°37' E
72 Dax , F	○	43°43'N 01°03' W	66 Dinara , YU	○	43°58'N 16°34' E
34 Deauville , F	○	49°21'N 00°04' E	34 Dinard , F	○	48°38'N 02°05' W
46 Deblin , PL	○	51°34'N 21°51' E	42 Dingle , IRL	○	52°08'N 10°14' W
36 Decazeville , F	○	44°33'N 02°09' E			
42 Dee , GB	○	57°04'N 02°51' W			

Fig. 5 Specimen for the German index sorted according to the German alphabet

We have so far been very much satisfied with this PC application. The secretariate proved no difficulties to handle the system after a very short introduction, to enter data and to retrieve them for various purposes in one of the layouts predesigned by ourselves. Extensions to the present file format are equally easy to intergrate.