

AUTHORS SUMMARY OF PHD DISSERTATION

ZRINY MIKLOS

NATIONAL DEFENCE UNIVERSITY

Doctorate Council

Dr. STIX Rüdiger

TITEL OF DISSERTATION

Switzerland and Austria - Political Legacy, alternative Models and Options in EU Security Research: Optimizing Geopolitical and -strategic Analysis and Predictions for Swiss – Austrian Competitive Potentials and Possible Alliances, Especially on the New Field of European Security Research, by Finding a Bridge Over the Gap Between Geopolitical and Geoeconomical Theories and the Application of Tools from Evolutionary Systemic Management.

AUTHORS SUMMARY:

A phenomenological analysis of geopolitical patterns and developments of Swiss – Austrian competitive potentials and possible alliances especially on the new field of European Security Research cooperation, combined with and based on Stafford Beers VSM- “Any viable System” Model out of a set of strategic tools in the frame of systemic - evolutionary Management Models, esp. including the Gälweiler Navigational System, connected with the findings of PIMS- “Profit Impact on Market Strategy” databank in the interpretation of Fredmund Malik, applicable on traditional sophistic security -strategic Models (like the trinity concept according to Clausewitz) handling implicit and tacit knowledge, and updated with current state - of - art applications of Substitution Wave Models (methodologically within the range between the concepts of Schumpeter, Gerhard Mensch, Theodore Modis, Nebojsa Nakicenovich and Cesare Marchetti (but in distance to the competing main macro – economical schools of long wave cycles, mostly in the Kondratieff or Kuznets type, with macro economical explanations discussing capital interest and capital life span theories), methodically based on (Volterra – Lotka type) epidemiological diffusion processes (eventually in Fisher – Pry logarithmic forms as it is current state of art at the NATO's Advanced Research Group on Kondratieff Waves, Warfare and World Security) in the development and substitution of strategic potentials, compatible to main traditional geopolitical schools of the Western World (esp. according to H.Mackinder, N.Spykman, (Paul) Kennedy, H.Kissinger, Z.Brzezinsky, S.P.Huntington and F.Fukuyama, and macro economical concepts of cultural evolution following the Austrian School of Economics esp. with A.Schumpeter, F.A.v.Hayek, J.Buchanan, G.Becker and V.Smith, with concentration and focus on mobility behavior and settlement patterns (TTB acc. to WB), and a second focus on diffusion and substitution of Technology in the field of transport and communication, produces faster quantitatively reliable and more far reaching results and an improved predictability of geopolitical developments, competitive potentials and options of possible alliances, especially on the field of security related services and R&D cooperation's for the landlocked neutral states in central Europe such as Switzerland and Austria with their constitutional system including cantons and federal states, then any estimation only out of the inner logic of the political development in the history (at least from the period beginning from the fall of the western roman empire until today) or out of current general or applied theories of social sciences, be they formulated in an traditional political expertise or as an OR model.

BUDAPEST, 2006

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Scientific Leader: Prof. Dr. NOGRADI Georg, CSc,

BUDAPEST, 2006.

**ZRINY MIKLOS NATIONAL DEFENCE UNIVERSITY
BOLYAI Janos MILITARY TECHNICAL FACULTY
PHD INSTITUTE IN MILITARY TECHNOLOGY**

Dr. STIX Rüdiger

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Doctoral (PhD) Dissertation

Scientific Leader: Prof. Dr. NOGRADI Georg, CSc,

2006. BUDAPEST

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1 Introduction (plus Title and Task):

***Switzerland and Austria,
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for Swiss – Austrian Competitive Potentials and Possible Alliances,
Especially on the New Field of European Security Research,
by Finding a Bridge Over the Gap
Between Geopolitical and Geoeconomical Theories
and the Application of Tools
from Evolutionary Systemic Management.
by Dr. Rüdiger Stix,
Ministerialrat at the Cabinet of the Minister of Defense of Austria
Budapest, 1st of September 2005***

The thesis¹ is a short version within the restriction of ca. 125 pages and is in my personal responsibility according to all legal and ethical obligations and standards.

¹ *The thesis is approved by UnivProf Dr.habil.Ernst Pflieger, Vienna, and by UnivProf Dr.habil. Siegfried Hermann, Vienna and Harvard, and was used by EPG Expert Group on Security Research to the Minister of Traffic, Innovation and Technology, Vienna, for the DOST proposal to the EU Commission on PASR/Preparatory Action on Security Research Call 2006 in Brussels*

(See: DOST PASR overview on last page)

1.1.1 The scientific problem,

1.1.2 the research aims and

1.1.3 the research hypothesis:

1.2 Research Problem, Examinations and Findings in 7 Basic Steps:

1.3 1.) The Research Problem was:

Can we identify an enhanced model (or a set of tools) that is more effective than conventional expertise in its application on analyzing and forecasting strategic potentials, structural similarities and processual consequences of the geopolitical patterns of Switzerland and Austria in Central Europe, regarding competitiveness and possible alliances on the new fields of European Security and especially the new tasks of EU security research?

1.3.1 2.) First I examined **all the main standard conventional expertise**

on Switzerland and Austria based on economical, historical, technological, geographical, legal, social affairs and security - political approaches in this field, and

I examined **the developments since the end of the cold war**

and the actual challenges regarding competitiveness and possible alliances especially in the new fields of European Security and especially the new tasks of EU security research, including a special focus on “Neutrals” in Europe as a possible alternative explanation,

and on cohesion of multi ethnic and multi language societies in Europe,

and the constitutional framework of “Cantons” and “Bundesländer”, important in the field of applied services on security related topics, esp. disaster relief and crisis management and communication.

1.3.2 3.) First I found that **there is only one single explanation**

that fits for Austria in comparison to Switzerland in the geopolitical patterns better, than conventional expertise:

the *TTB invariants* (Travel Time Budget according to the World Bank) including the “Central Place Theory” of W. Christaller, enhanced with “Metropolitan Segregation” in interpretation of E. Lichtenberger in the settlement patterns along the deep pass and transit routes at the Alps, and within the historical frame from the early Medieval Ages up to now (but excluding other kind of

TTB evidence in the period between Neolithic and the Western Roman Empire),

and integrating the analog interconnectivity between the increase of economic growth, traded goods, **Mobility** and the overall amount of correlated **Communication**.

1.3.3 I also found, that methodologically seen these patterns

may be

- a) either special cases of cyclic or long wave models from the general systems or macro economic side approach, or
- b) an extended form of substitution waves at market niches as analyzed by micro economical management tools.

4.) Therefore I examined further on

applied sciences of business administration or NPO Management, esp. of advanced systemic evolutionary Management, with focus on the Gälweiler Model, combined with Stafford Beers VSM- “Any viable System” Model and including PIMS- “Profit Impact on Market Strategy” enhanced by Fredmund Malik, with the special focus **on** managing tacit knowledge in security - strategic Models according to Clausewitz and others;

I examined further on current state - of - art Substitution Wave Models

(esp. the concepts of J.A.Schumpeter, Gerhard Mensch, Theodore Modis, Nebojsa Nakicenovich and Cesare Marchetti, methodologically based on Volterra – Lotka type epidemiological equations as used by the NATOs Advanced Research Group on Kondratieff Waves, Warfare and World Security;

I examined further on the compatibility with current geopolitical schools

of the Western World, esp. according to H.Mackinder, N.Spykman, Paul Kennedy, H.Kissinger, Z.Brzezinsky, S.P.Huntington and F.Fukuyama, based on historical approaches on cultural pattern as by F.Braudel, A.Toynbee, P.Kennedy, and C.Barloewen with “Topic Evolution”;

I examined on the „Fiduciary Cluster“

by T.Hägerstrand, **on** the „Relation Mobility and Amount of Communication“ by A.Grübler, T.Modis etalii, **including** „Risk Perception“ and „Social Capital“ according to empirical Social Research and possible “Generations Concept” following Schlesinger’s and Strauss – Howe.

1.3.4 A very detailed investigation was focused on the fundamental work of Cesare Marchetti,

which will have immense impact on any future system analysis, **and I found** every proof in my research task, **that** technological diffusion is epidemiologic,

I found, that his overall theory of “Logos” or “Long memory” possibly could be integrated (but needs further proof),
but, that some hypothesis based on “society as an (overall) learning System” are overoptimistic and do not fit on Central European Phenomenology.

1.3.5 5.) I found that traditional Historical Approaches on Cultural pattern

like F.Braudel, A.Toynbee, P.Kennedy, and C.Barloewen with “Topic Evolution”,

as well as main macro – economical schools regarding “Culture Matters”,
i.e. the Austrian School of Economics on “Cultural Evolution”, with focus on the living Nobel Laureates James Buchanan, Gary Becker, Vernon Smith and Kahneman, could fit as long as they are in distance to a restricted “Man as Homo Oeconomicus” view, and in distance to the competing main macro – economical schools of long wave cycles, mostly in the Kondratieff or Kuznets type with macro economical explanations restricted on capital life span theories;

1.3.6 6.) I found that traditional Geopolitical Concepts on Key Areas

esp. H. Mackinder, N.Spykman, Z. Brzesinsky;
enhanced with cultural pattern according T.Vanhanen, S.P.Huntington, F.Fukuyama, etc. can be integrated,

1.3.7 7.) Strategic Doctrines integrating Tacit Knowledge and Long Wave Models

as done by R.H.Scales based on Clausewitz (and contrary to Limitation on Sun Zi and Toffler’s Long Waves on RMA) can be integrated too.

1.4 Research Hypothesis, Research Methods and Results: Overview and Main Arguments in 50 Short Steps

The current state of art when analyzing Swiss – Austrian competitive potentials and possible alliances especially on the new field of European Security Research Programs² follows two different main approaches: either a conventional³ analysis and expertise out of the geopolitical, geoeconomical and social system⁴ of Switzerland and Austria. This works fine for all short term predictions, and it is

2 See: The European Council, Brussels, 12th December 2003, “A Secure Europe in a Better World – European Security Strategy” Proposed by Javier Solana and adopted by the Heads of State and Government;

Mitteilung der Kommission über die Umsetzung der vorbereitenden Maßnahmen zur Stärkung des Industriepotenzial auf dem Gebiete der Sicherheitsforschung im Hinblick auf ein Programm zur Erhöhung der Sicherheit in Europa durch Forschung und Technologie, KOM (2004)72 endgültig vom 3.2.2004;

Proposal for a decision of the European Parliament concerning the 7th Framework Program of the European Community for research, Technological Development and Demonstration Activities (2007 to 2013), COM (2005)119, Final from 6th April 2004;

3 See: „The World Almanac and Book of Facts“ as American published reference work which conveys information to the general public. It has been published yearly since 1886, the 2005 version: ISBN 0886879388) The 2006 edition ISBN 088687964.

4 See as basic overview: „The World Factbook“, External links: World Factbook Website; which is a publication by the Central Intelligence Agency of the United States with basic almanac-style information about the various countries of the world. The factbook gives a summary of the demographics, location, telecommunications capacity, government, industry, military capability, etc. of all US-recognized countries and territories in the world. As The World Factbook is prepared by the CIA for the use of U.S. Government officials, the style, format, coverage, and content are designed to meet their specific requirements. Information is provided by:

evident that any economic forecast⁵ on Switzerland or Austria is normally within a bandwidth of plus/minus 1 percent (at the range of three months), and any poll from one of the big polling institutions is within plus/minus 5 percent (at the time period of two weeks toward an election or a plebiscite). A second bottom up approach out of the inner situation of Switzerland and Austria is the extension of organizational models from the field of MBA or NPO Management⁶ to the state level (*as we will discuss later on in detail*), and for example when using methods of measuring knowledge capital⁷. *This position is not questioned or challenged by any known mainstream economical or political analysis.*

On the other hand Switzerland and Austria are subjects like all other countries and regions of all macro models used in geopolitics. These work top - down from meta systems with a long distance perspective, be it from a historical approach, or from a macro politico - economical approach, (*as we will discuss in detail and*) as debated in questions of further European development or the effects of globalization.

Here a second possibility is the use of evolutionary systemic models to control complexity in management, especially following the St. Gallen model *see FN 8* (by MZSG⁹ and Malik (*as we will discuss in detail*)).

Both main approaches have their certain and well documented schools with their mainstream discussions (*as we will discuss in detail too*).

Main Arguments 1.) – 18.) : What is Generally New, and what are the differences to the main alternative explanations out of macro theories?

- 1.) Starting bottom up with all possible explanations out of the inner situation of the sub system we analyze, it would be nonsense to exclude any findings we can have evidently with tools of technical sciences, economy or political, legal and social research. *So we prefer a multi- and transdisciplinary approach, as the main geopolitical schools do also.*
- 2.) ***But it is evident (as we discuss with historical waves of technological substitution), that it is completely impossible to explain the steadiness of diffusion of technological innovations and their application by rivaling societies just out of their inner constitution.***
- 3.) The same is true about “*capital invest*” or “*capital lifespan*” theories in some traditional macro economic theories and long wave models when they are applied on diffusion of political phenomena like the increase of transoceanic expeditions of the Western World at the end of the Middle Ages. They obviously do not fit (maybe, because they are restricted to newer capital market conditions starting with industrialization, *See discussion below*).
- 4.) The only agreement on this point “2.)” we have between conventional wisdom, with long wave theorists or with evolutionary systemic approaches, that we can distinguish between “*early adaptors*” and “*late comers*”,

Antarctic Information Program (National Science Foundation), Bureau of the Census (Department of Commerce), Bureau of Labor Statistics (Department of Labor), Central Intelligence Agency, Defense Intelligence Agency (Department of Defense), US Department of State, National Imagery and Mapping Agency (Department of Defense), Naval Facilities Engineering Command (Department of Defense), Office of Insular Affairs (Department of the Interior), Office of Naval Intelligence (Department of Defense), United States Board on Geographic Names (Department of the Interior), and other public and private sources.

5 See: OECD current reports at <http://www.oecd.org> and <http://www.oecd.org/infobycountry> for OECD's Web sites on member countries; The Organisation for Economic Co-operation and Development (OECD) is an international organisation of those developed countries that accept the principles of representative democracy and a free market economy. It originated in 1948 as the Organisation for European Economic Co-operation (OEEC), to help administer the Marshall Plan for the re-construction of Europe after World War II. Later its membership was extended to non-European states, and in 1961 it was reformed into the Organisation for Economic Co-operation and Development. OECD governments get information and analysis provided by a secretariat in Paris that collects data, monitors trends, and analyses and forecasts economic developments. It also researches social changes or evolving patterns in trade, environment, agriculture, technology, taxation and other areas. There are currently thirty full members; of these, 24 are described as high-income countries by the World Bank in 2003.

6 As Austrian standard see: „Handbuch der Nonprofit Organisation: Strukturen und Management“, by Christoph Badelt (Hrsg.), unter Mitarbeit von Florian Pomper, Stuttgart by Schäffer – Poeschel, 2002, 3rd edition, ISBN 3791019414; Christoph Badelt was rektor of the Economic University Vienna;

7 among the many rivaling systems we use the „Wissensbilanz – Modell“ of the ÖNB, Österreichische Nationalbank; see: „OeNB – Wissensbilanz 2004“, printed 2005 by OeNB, Vienna.

8 MZSG Online Blatt 02/06, St.Gallen 2006

9 MZSG, Management Zentrum St.Gallen with the „St. Gallener Management Modell“, esp. see Aloys Gälweiler at: “Unternehmensplanung – Grundlagen und Praxis”, Frankfurt/New York, 1974;

- 5.) and, that there are main cultures in the world, which are able to compete and to copy on any technological level, beside of all differences out of their hierarchy of moral or social values - a position, neorealist geopoliticians as well as strategists handling tacit knowledge (either conventional with learning curves or with the Clausewitz type of strategies (not only at security related matters) would agree (*as we will discuss in detail*).
- 6.) Until this point some world modelists like Stuart Kaufman or George Modelski as well as system theorists coming from cybernetics like Stafford Beer cannot be falsified, and
- 7.) of course the same is a backing the cycle theorists among the social researchers and historians like Fernand Braudel, Arnold Toynbee or Constantin Barloewen (*as we will discuss in detail*).
- 8.) Cesare Marchetti (and Theodore Modis) are the most prominent researchers, who went a step further. They do insist, that ***not invention or innovation, but diffusion is explicit and epidemiologic, at what we agree*** (*and as we will discuss in detail*).
- 9.) They, and especially Marchetti, whom we regard the greatest respect, ***argue further on***, that society is a learning system, what is the explicit reason, why we can analyze the diffusion of Gothic with epidemiological equations with a peak at the year 1250, and, so Marchetti, society maybe invented the “Sacrum” (“Holy Roman German”) Empire to check and balance the power of the Latin (Western) Church, at this time still connected with the church at the (Eastern) Roman Empire under the “Christos Autokrator”, the emperor of the Byzantine Empire and head of the (Eastern Roman) church at Constantinople (*as we will discuss in detail*).
- 10.) Now it is obvious too, that there is no historical reason for a steady diffusion of a certain technology and its application on representative sacral monuments like Gothic cathedrals over the period of 200 years, given the turbulences by just the main wars in the same period, including the Crusades (against Jerusalem as well on Constantinople or the Catarrhs), the Mongols, Anglo – French antagonism and the fight between the Emperor and the Roman Pope - or epidemics like the pestilence.
- 11.) So ***the argument goes to Marchetti, as far as the diffusion is mentioned against the uncertainty of invention or innovation and any explanation out of the inner constitution*** of the related entities. But ***on the other hand there is no reason either, that the diffusion of Gothic reaches just within a certain region of Latin (Western) Christianity, and it is impossible to find any argument about restrictions made by topography (like the TTB), climate or technological level***.
- 12.) So if society is a learning system as a general hypothesis, as Marchetti mentions, the question remains, what was this “society”, where the Gothic spreaded, or, what else have we measured, when we measure the diffusion of Gothic?
- 13.) It is in this example obvious too, that Marchetti's idea of the “invention” or construction of the Sacrum Imperium by society just as a result of spontaneous order to counterbalance the political power of the Roman Pope, as head of the Latin (Western) Christianity, is not valid at the Orthodoxy, where in to days Athens as well as in Moscow the government has the most important role when inaugurating a new head of the own orthodox church.
- 14.) So ***in this example the argument goes to S. Huntington***, who points out, that only in the Western tradition we have a division between the representation of political power and the churches and religions (similar only to Hinduism and contrary to Orthodoxy, Islam, and traditional Japanese and Chinese Confucianism, *as we will discuss in detail*).
- 15.) So “*Culture Matters*”¹⁰, as we agree especially with Barloewen¹¹, and we have to find the limits, to what extend the Marchetti approach on questions of geopolitics is valid.
- 16.) ***Our argument is, that Marchetti's (and Modis) theories are hardened by empirical evidence only within the limit***, as the evaluated different societies and cultures are able to cope with technological change besides all their inner differentiations about social values.
- 17.) Therefore they are falsified as an general applicable model on the level of dominating cultures

¹⁰ See also “Streit um Werte”, Samuel .P.Huntington and Lawrence E. Harrison (Hrsg.) ISBN 3442152658 as German reprint from “Culture matters”, 2002.

¹¹ Constantin von Barloewen, member of the UNESCO World Commission for Culture and Development, at: “Kultur als Faktor der Realpolitik” Japan Society for the Promotion of Science, Congress, May 12, 2000 in Berlin; See also: Wolf D. and Constantin von Barloewen at: “Die Gesetzmäßigkeit der Geschichte. Evolution und Zivilisation; von den Anfängen der Menschheit bis ins 3te Jahrtausend”, Athänäum, Frankfurt am Main, ISBN 361008474X.

and they fit as a hypothesis on a reliable system level only within the most permanent of all restrictions, the topography, as any Geopolitician would remind, and therefore the TTB and all related patterns in settlement, economical behavior and communication.

18.) Therefore a main part of the new finding is - regarding our task - the thesis as defined above in the summary, applied on the Austro – Swiss geopolitical situation:

Main Arguments 19.) – 28.) and Restrictions on the Subject:

- 19.) In the current geopolitical situation of medium sized landlocked European countries, and therefore excluding small sized countries like Liechtenstein or Luxemburg,
- 20.) or countries with an open access to the open sea (which therefore always not only in the need to integrate into a system of naval powers, but permanently in the geopolitical situation being a counter coast to other naval powers¹²),
- 21.) the two main Alpine states Switzerland and Austria have more structures and competitive potentials in common, than each of them with other similar sized countries in Europe or elsewhere in the world, according to all mainstream economic evaluations even after Austria joining the EU (and the Eurozone), while Switzerland still staying outside in a special relationship with the EU (but holding the Swiss Franc stable towards the Euro¹³). This position 19.) - 21.) is not questioned or challenged by any known mainstream economical or political analysis.
- 22.) During the bipolar world of the cold war period, Austria and Switzerland have been a geostrategic barrier between NATO AFCENT and NATO AFSOUTH, not only by its topography of the Alpine mountain terrain,
- 23.) but by its status as Neutrals¹⁴ (See below), and with armed forces based on a militia system outside of military alliances¹⁵. With this common Swiss - Austrian background a sound military exchange happened on many levels and it was an issue in bilateral and international political affairs in Switzerland as well as in Austria.
- 24.) This position 22.)-23.) is not questioned or challenged by any known mainstream military or security political analysis.
- 25.) Of course to day after the cold war this is no longer an important factor, but there are still political generations in social relevant positions (as we discuss in the “Generations Concept” following Schlesinger’s and Strauss – Howe¹⁶), for which this is part of individual personal history, and in the popular mood, the Swiss model is sometimes mixed with actual anti globalization and anti EU affects.
- 26.) Within this geopolitical frame of the Alpine states we show and argue, that in the field of applied services on security politics related topics, esp. disaster relief and crisis management and communication¹⁷, are much more similarities in the structures, processes, strengths and weaknesses, than between other European countries (See discussion below).
- 27.) This fact is not always present in international discussions within the EU or others, but of course it is evidently based on the special constitutional system formed bottom up by the cantons and the Bundesländer as states with own legislation (See discussion below).

¹² ie the Nordic and Baltic states, the states at the lower Rhine Area, Portugal, and the states at the Mediterranean.

¹³ so both currencies holding their currencies similar to the hard currency policy since the 1970ties

¹⁴ According to: „Abkommen, betreffend die Rechte und Pflichten der neutralen Mächte und Personen im Falle eines Landkrieges“ 18th October 1907, ad Haag, Netherlands („Haager Abkommen“).

¹⁵ The Austrian Militia system started with qualified reserve units as „Grenzschutzkompanien“ and changed to a mainly militia based system by introduction of the „Raumverteidigungssystem“ after 1978 and the introduction of the comprehensive defense doctrine into the constitution as Art 9a B-VGidG.

¹⁶ Arthur Meier Schlesinger Jr., son of the same named historian A.M.Schlesinger Sr. , at: “The Cycles of American History” 1986 was an early work on the relationship of cyclical generations of politics in the United States, and influenced William Strauss and Neil Howe’s later work in the area. See: William Strauss and Neil Howe at: “The History of America’s Future, 1584 to 2069”, 1992, ISBN 0688119123; Neil Howe, William Strauss, at: “13th Gen : Abort, Retry, Ignore, Fail?”, 1993, ISBN 0679743650; Neil Howe, William Strauss, at: “The Fourth Turning: An American Prophecy”, 1997, ISBN 055306682X; Neil Howe, William Strauss, at. “Millennials Rising : The Next Great Generation”, 2000, ISBN 0375707190.

¹⁷ see Arnulf Grübler at: „Technology and Global Change“, page 322, Cambridge University Press, UK, 1998 (1st edition), ISBN 0521591090; copyright by IIASA, International Institute of Applied System Analysis, Laxenburg Austria;

28.) This amount of constitutional independence from the central government is only comparable to the states "Länder" of Germany, or the states in the USA.

Main Arguments 29.) – 35.), Excluding some Mainstream Analysis and the Misunderstanding of Neutrality as Role Model

In the main stream analysis, from WB, IMF, OECD (*Institutions see Annex, Part II*) up to the main domestic economic and social researcher in Austria and Switzerland including the main media coverage, nobody would deny, that from nearly all economical and social parameters Austria and Switzerland are very similar, including their approach and the public political support towards a hard currency policy, towards questions of financial secrecy in banking and financial services, the value and success of small and medium sized enterprises and the sustainable success of the export economy as well into the EU as in the Non – OEEC countries.

- 29.) Of course, one explanation (gaining a kind of popularity in the 70ties with Austria getting UN headquarters like the IAEA to Vienna) could have been the Austrian Neutrality formed vaguely after the Swiss role model.
- 30.) But even if we do not count the really big differences between the Swiss Neutrality and the development of Austrian Neutrality (*See below*), today this could not be a decisive factor when we look at other Neutrals like Ireland and the Scandinavians within the European Union on the one hand, and the NATO enlargement including the MEE states after the fall of the bipolar world, most of them now in the EU (and Bulgaria and Romania will join 2007, while NATO member Norway, with its own oil reserves in the North sea, will stay out).
- 31.) Surely there was a cooperation between Neutrals and Nonaligned states, esp. Switzerland, Austria, Sweden, Finland, Ireland and Yugoslavia in the 70ties, the early 80ties and in the Gorbachev period of the bipolar cold war world.
- 32.) But even then we have to remember the basic differences between the main national interests of the Neutrals and Nonaligned, especially with Ireland opposing UK in the question of Northern Ireland, Sweden with its role in the 3rd and 4th world sometimes challenging US politics not only during the Vietnam war, Finland with its sensible border towards the USSR, and Yugoslavia with its special role model of planification "Selbstverwaltungssozialismus", and its inner differences among the traditional ethnicities and the official Yugoslav nation, artificially formed like the new Sovjetman, the "Sowjetmensch", in an attempt to overcome the many different ethnic groups in the USSR (*See below*).

We have to take into account too the basic historical, constitutional and political differences between Swiss and Austrian Neutrality:

- 33.) Switzerland from its beginnings at western Alpine forelands and regions of the Franconian kingdom and Burgundy¹⁸, was geopolitically neutralized in the early 16th century between the Holy Roman German Empire (which was at that time clearly under the control of the former

¹⁸ as mainstream knowledge, but in the follow up according to Elisabeth Lichtenberger, ÖAW, 2000, Gutachterin des Schweizerischen Fonds zur Förderung der wissenschaftlichen Forschung über das Nationale Forschungsprogramm "Landscapes and Habitats of the Alps"; see related topics at Publikationen zum Download by ÖAW, Elisabeth Lichtenberger, ÖAW, at: Die Sukzession von der Agrar- zur Freizeitgesellschaft in den Hochgebirgen Europas, 1979.1989: „Die neue Obdachlosigkeit" by Elisabeth Lichtenberger, ÖAW. 1994: "Vienna and Prague: political systems and urban development in the postwar period" by Elisabeth Lichtenberger, ÖAW. 1995: "Schmelztiegel Wien. Das Problem der "neuen Zuwanderung" von Ausländern" by Elisabeth Lichtenberger, ÖAW. 1995: "Der Immobilienmarkt im politischen Systemvergleich" by Elisabeth Lichtenberger, ÖAW. 1997: "Wien: zwischen extremer Grenz- und Mittelpunktlage" by Elisabeth Lichtenberger, ÖAW. 1997: "Budapest: die wichtigste Stadt Ostmitteleuropas" by Elisabeth Lichtenberger, ÖAW. 1999: "Metropolen und periphere Regionen: Probleme der Sozialpolitik in den USA und in Europa" by Elisabeth Lichtenberger, ÖAW; 1999: "Die Privatisierung des öffentlichen Raumes in den USA" by Elisabeth Lichtenberger, ÖAW. 1999: "Geopolitische Lage und Transitfunktion Österreichs in Europa" by Elisabeth Lichtenberger, ÖAW. 2000: "Wien und Prag als Repräsentanten der europäischen Stadtkultur" by Elisabeth Lichtenberger, ÖAW; 2000: "The globalization of economy and the effects of EU-policy: the case of Austria" by Elisabeth Lichtenberger, ÖAW; 2001: "Geographie. In: Die Geschichte der österreichischen Humanwissenschaften - ein zentral-europäisches Vermächtnis" by Elisabeth Lichtenberger, ÖAW; 2001: "Analysen zur Erreichbarkeit von Raum und Gesellschaft in Österreich" by Elisabeth Lichtenberger, ÖAW; 2001: "Wem gehört die 3. Dimension der Stadt?" by Elisabeth Lichtenberger, ÖAW; 2002: "Wozu braucht die Gesellschaft die Stadt?" by Elisabeth Lichtenberger, ÖAW; 2003: "Österreich in Europa zu Beginn des 21. Jahrhunderts" by Elisabeth Lichtenberger, ÖAW; 2004: "Was war und was ist Europa?" by Elisabeth Lichtenberger, ÖAW; 2004: "Quo vadis Europäische Union?" by Elisabeth Lichtenberger, ÖAW;

Swiss family of the Habsburgs), the Kingdom of France and the Princes (including the papal state) of northern Italy. Austria was geopolitically neutralized between 1945 and 1955 by the World War II allies to balance the positions of the starting cold war and the forming of NATO and Warsaw Pact in central Europe.

- 34.) Switzerland avoided during the whole cold war period joining the UN, for the law of the UN (*Art 103 of the UN Charta*) is prior to national law and the Neutrality, while Austria joined the UN not one year after giving itself the constitutional framework of Neutrality (*Bundesgesetz über die immerwährende Neutralität, 1955¹⁹*).
- 35.) Swiss Foreign policy was defensive because of Neutrality, Austria was very active by its “Aktive Neutralitätspolitik”, including military peace support operations, starting at the Congo 1960 and holding big military contingents on the Golan Heights until today.

Switzerland held strong military capabilities including a strong Airforce with the psychological background, that the Swiss Neutrality withstood the Allied forces as well as the Axis powers during WWI&II, while Austria was a battlefield with high priority in the case of a clash between NATO and WAPA, with the vivid experience, that even big forces like the armies of the Axis powers in both WWI and II faced problems when trying to stop the “Russian Steamroller”, be it the czarist army or the Stalin - USSR. Non-the less Austria concentrated on ground forces similar to the Swiss type militia system from early “Grenzschutz” units to the “Raumverteidigung” system in the 70ties, but always lacking a strong Airforce.

So it would be a myth to think, that the Neutrality of Austria is more like a Swiss role model (as mentioned as a possibility during the negotiations about the state treaty for Austria in Moscow during the allied occupation of Austria) than after the model of Swedish Neutrality, or better, its handling during the 70ties when conducting an active policy of neutrality.

Main Arguments 36.) – 50.), Modeling Swiss - Austrian Geopolitical Similarities and Differences

- 36.) If we look at other clearly evident indicators like language, ethnicity, religion, wealth and income, development of economic sectors and structure of businesses, welfare systems, influence of migration, health system and life expectancy, education, science and research, technological infrastructures and public services (See data at Annex, Part II) - and the historical political experience with smaller and greater Empires or the domestic development of democracy, with ecclesiastical as well as secular nobility, with revolutions, reformations, counterreformations and enlightened reforms (See discussion below), we can not identify any approach of any sustainable sociopolitical model which is able to identify with more precision the security research relevant competitive potentials in the given geopolitical position then our explanation and thesis, which fits for Austria in comparison to Switzerland and vice versa better, then with other, similar sized European countries as far as the TTb model is applied on Alpine transit routes.
- 37.) The same is true, if we look at Switzerland and Austria according to the traditional Western geopolitical schools, especially in the tradition of Nicholas Spykman and the USA, or according to currently debated concepts like the “*Clash of Civilizations*” from Samuel Huntington, be it between rivaling core cultures with hegemonial states,
- 38.) or be it a domestic battle about identities between rivaling cultures as shown in “*Who are We?*”,
- 39.) or a kind of new class struggle like the “*North versus South*” rhetoric in the globalization discussion and at the current Doha round of the WTO talks and the ATTAC movement,
- 40.) or the rivalry among the world economic powers ranging from the USA with NAFTA via the transatlantic partnership to the EU and to the big Non OEEC countries in Asia (See discussion below) with special similarities between Switzerland and Austria only by chance.

¹⁹ Bundesverfassungsgesetz vom 26. Oktober 1955, BGBl. Nr. 211, über die Neutralität Österreichs.

- 41.) In all our findings based on more than 20 years of governmental research experience and interdisciplinary research, there is *only one single explanation left which would fit for Austria in comparison to Switzerland better, then with other, similar sized European countries:*
- 42.) *the TTB invariants (Travel Time Budget according to the definition by the World bank²⁰) in the settlement patterns along the deep pass and transit routes at the Alps, and within the historical frame from the early medieval ages up to now (but excluding other kind of TTB evidence in the period between Neolithic and the Western Roman Empire), including the analog interconnectivity between the increase of economic growth, traded goods, mobility and the overall amount of increased communication²¹.*
- 43.) Methodologically seen these patterns are, when formulated with diffusion equations, maybe a special cases of cyclic or long wave models from the macro economic side approach (*See discussion*),
- 44.) or an extended form of substitution waves at market niches as analyzed by micro economical management tools. So we have to look at the state of art and discussion about long wave theories and its possible applications as well, as on extended models of enterprises out of the applied sciences of business administration²² or NPO Management²³.
- 45.) Theoretically it could be possible, that one of the competing explanations about an overall evolutionary explanation for long wave phenomena is right, be it from the type of Stuart Kaufmann²⁴ looking for life systems as a chaos border phenomenon,
- 46.) to world modelists like Modelski²⁵ or in the tradition of the Club of Rome (*See below*) from “*The Limits of Growth*” to the current “*Growth without Limits*”²⁶,
- 47.) or to Cesare Marchetti²⁷, with his application of Darwinian logic on evolution as an

²⁰ Yakov ZAHAVI, the late founder of the TTB, made studies for the WB and the US Department of Transport:

Following are Zahavi's papers in order of their appearance ACCORDING TO Metropolitan Travel Survey Archive:

1. Traveltime Budgets and Mobility in Urban Areas - May 1974

2. The "UMOT" Model, Jun 1976

3. Effects of transportation systems on the spatial distribution of population and jobs - November 1976

4. The plain person's guide to the UMOT (Unified Mechanism of Travel) process - April 1977

5. Can transport policy decisions change urban structure - January 1978

6. The measurement of travel demand and mobility - December 1978

7. The "UMOT" project - August 1979

8. Dynamic Effects of Energy Policies on Travel Behavior and Urban Structure - April 1980

9. A New Urban Travel Model - September 1980;

see also Marchetti, C., 1995, at: “Transport Systems and City Organization: A Critical Review of the Relevant Literature”, Report to the Commission of the European Communities Joint Research Center, Institute for Prospective Technological Studies, Ispra (Varese), Italy.

²¹ see Arnulf Grübler at: „Technology and Global Change“, page 322, Cambridge University Press, UK, 1998 (1st edition), ISBN 0521591090; copyright by IASA, International Institute of Applied System Analysis, Laxenburg Austria;

²² as mentioned above we follow the St Gallen school of Frdmund Malik, but in this case see also Günther Wöhe at „Einführung in die allgemeine Betriebswirtschaftslehre“ Vahlens Handbücher der Wirtschafts- und Sozialwissenschaften, München, 1990, 17th edition (when Wöhe opened to organizations outside of the „betriebliche Einrichtungen“), ISBN 3800614723, as a more traditional standard of MBA in the german speaking world.

²³ As standard see: „Handbuch der Nonprofit Organisation: Strukturen und Management“, by Christoph Badelt (Hrsg.), unter Mitarbeit von Florian Pomper, Stuttgart by Schäffer – Poeschel, 2002, 3rd edition, ISBN 3791019414; Christoph Badelt was rektor of the Economic University Vienna;

²⁴ Stuart Alan Kaufman at: "Antichaos and Adaptation", Scientific American, August 1991.

Kaufman at: "Origins of Order: Self-Organization and Selection in Evolution" (1993) Oxford University Press. Technical text. ISBN 0195079515; Kaufman at: "At Home in the Universe" (1995) Oxford University Press; Kaufman at: "Popular treatment of many of the ideas in Origins". ISBN 0195111303; Kaufman at: "Investigations (2000) Oxford University Press. Speculations involving a possible definition of life". ISBN 0195121058.

²⁵ Modelski, George at: "Long Cycles, Kondratieffs and Alternating Innovations: Implications for U.S. Foreign Policy," in The Political Economy of Foreign Policy Behavior. Keley, W. Charles and McGowan, Pat eds. Sage Publications. Beverly Hill, California. 1981.

²⁶ Discussion at Rüdiger Stix and Georg Nogradi at: „Gut gegen Böse – über Propheten, Propaganda und Potentiale“, Wien, Graz, 2002, ISBN 3853330835

²⁷ Marchetti, C., 1982 at: “Society as a Learning System: Discovery, Invention and Innovation Cycles Revisited”, Syracuse Scholar , 3 (2):21–37.

Marchetti, C., 1983, at: “On the Role of Science in the Postindustrial Society: Logos, the Empire Builder”, Technological Forecasting and Social Change , 24 :197–206;

Marchetti, C., 1984, at: “Literacy vs. Illiteracy”, WP-84-62, International Institute for Applied Systems Analysis, Laxenburg, Austria;

Marchetti, C., 1985, at: “Action Curves and Clockwork Geniuses”, WP-85-74, International Institute for Applied Systems Analysis, Laxenburg, Austria; Marchetti, C., 1987, at: “Darwin and the Future of ISDN”, Proceedings of the Fifth International Teletraffic Congress (ITC), Seminar on Traffic Engineering for Integrated Service Digital Networks (ISDN) -- Design and Planning, North-Holland Publishing Co., Amsterdam, The Netherlands; Marchetti, C., 1987, at: “Darwin and the Navy: How, in a Competitive System, the Future is Encoded in the Past”, Proceedings of the US Naval Academy (USNA) Conference on Technological Innovation and Institutional Adaptation, Annapolis, 15--17 March; Marchetti, C., 1988, at: “From ATP to ISDN: Three Billion Years of Communication Technology,” Speech at Speaker's

information gaining process starting not from the neutrino level²⁸, but from the Photons, and applicable to all kinds of diffusion patterns.

- 48.) Surely it is possible on an other level, that Cesare Marchetti et alii are wrong with an overall evolutionary explanation for long wave cyclical phenomena,
- 49.) and the patterns we use are just a special case of cultural evolution in modern societies and a macro economical phenomena, just as described by economists in the tradition of Schumpeter (*See above*), Hayek²⁹, Becker, Smith, Buchanan³⁰, etc., and fitting into a theory of rational or critical choice, with tacit knowledge³¹, ranging from armed forces behavioral sciences to systems theory³² integrated in a process of cultural evolution, forming social behavior like law, moral or even religion, and societies with higher or lower trust levels (as pointed out by Fukuyama).
- 50.) Maybe, that our patterns are only incidentally, or just a very vague effect of “Wechselagen” (*See below*), the change and clustering of competitive potentials from centers to the rim and vice versa, as a possible answer to very common questions in general history as well as among geopoliticians.

In the eventual cases of 43.) – 50.) my thesis would be limited to a special sub case of one of the competing schools, but it would be still applicable on the geopolitical subject.

Adjusting historical approaches in the era of asymmetric warfare

Against those Economists and Historians, who are insisting, that you have not enough valid data supporting long wave cycles as a phenomenon and a theory or at least a hypothesis, we hold our position, that the aggregated data is as least as sufficient as any other historical and geopolitical argument for any strategic principle out of case studies.

This argument holds its validity, as long as we don't find another explanation for the phenomenology of the existing data, which would falsify our hypothesis.

As scientists coming from all kinds of faculties and working inter- and transdisciplinary on geoeconomical, geostrategic and geopolitical issues, we have to formulate our hypotheses and models, and have to proof them by falsifications. Surely quite often while using tools of social sciences, we have to look at an empirical reality check and sometimes the test of time.

Unfortunately the labor of history gives us not so many possibilities, to test all of our models and hypothesis, especially in the field of security politics, but with new developments in historical

Dinner, EuroComm 88 "Gateway to European Communications", organized by RAI Organisatie Bureau Amsterdam BV, and held at Amsterdam, 6–9 December; Marchetti, C., 1991, at: “A Forecasting Model for Research and Innovation Activities in Selected Areas: A Support for Strategic Choices.” Paper presented at the International Course on Research and Innovation Management, organized by UNIDO and ICS, Venice, 13 September; Marchetti, C., 1996, at: “Notes on the Limits to Knowledge: Explored with a Darwinian Logic”, Complexity, 3, 22-35; Marchetti, C., 1996, at: “Pervasive Long Waves: Is Human Society Cycloymic?”, Prepared for the Conference "Offensiv zu Arbeitsplätzen: Weltmärkte 2010", Cologne, 14--15 September 1996.

28 Notes on the Limits to Knowledge Explored with Darwinian Logic Clarifying and expanding the boundaries of the knowable using learning systems, by C. Marchetti, in: C O M P L E X I T Y © 1998 John Wiley & Sons, Inc. 1998 John Wiley & Sons, Inc., Vol. 3, No. 3 CCC 1076-2787/98/03022-14

²⁹ Friedrich August von Hayek was one of the most important western economists and social scientist belonging to the Austrian School of Economics, noted for his defense of liberal democracy and free-market capitalism against a rising tide of collectivist thought, and he is the main theorist of the “spontaneous order” concept. He was Lieutenant at the Austro-Hungarian Army at WW I, professor at the London School of Economics and gained the 1974 Nobel Memorial Prize in Economics with Gunnar Myrdal.

³⁰ James Buchanan, Gary Becker (with the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel for "having extended the domain of microeconomic analysis to a wide range of human behavior and interaction, including non-market behavior") and Vernon Smith are the at this time living Nobel Laureates who are related strongly to the Austrian School of economics, gaining the Bank of Sweden Memorial Prize in Economic Sciences. We agree on their approach toward cultural evolution in social systems.

³¹ For US armed forces see: Hedlund, J., Sternberg, R.J. , & Psotka, J. (2000) Identifying the abilities involved in the acquisition of tacit knowledge. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Sternberg, R.J., Forsythe, G.B., Hedlund, J., Horvath, J. A., Tremble, T., Snook, S., Williams, W.M., Wagner, R.K., & Grigorenko, E.L. (2000). Tacit knowledge in the workplace. Technical Report 1093). Alexandria.

³² See: Laszlo Merö, at: „Die Grenzen der Vernunft – Kognition, Intuition und Komplexes Denken“, dtche Ausgabe 2002, ISBN 3499614199.

sciences, esp. archeology, the period of time we find hardened evidence is today much longer, than in the time of the great geopoliticians or historians like Toynbee, and it is still increasing.

Secondly, the new evidences we find at the new frontiers of the neurosciences gives us the possibility to falsificate some historical hypothesis or theory, which we could not do until now (*See discussion at Hindsight Bias*).

Therefore we have to wait on the one hand, that perhaps new techniques of brain scanning would help us to a better understanding, and we have to be aware that we cannot overcome our biases in an exclusively personal effort.

We need the counterintuitive knowledge out of the empirical evidence to avoid following our reflexes when diving, flying or firefighting as well, as in handling complex managerial tasks.

The same is true, when we have to avoid overcompensation.

Neither in international negotiations nor in family matters it is basically a good idea to hate the rivaling opponent or to hate oneself.

But in the meantime we can use those tools, which helps us to measure and to predict diffusion and substitutions by their phenomenology, especially in all questions raised by the topic of situational awareness according to the EU security research program, at least, if we focus on evident anthropological invariants like TTB and similar amounts in communicational fiduciary clusters, and even more precisely, if we are within a homogeneous society, at least to the amount, as common patterns of settlement caused by the TTB and the geopolitical situation at the Alps after the fall of the Roman Empire overcame different political developments and got nearly identical outcomes in terms of socio – economical structures and potentials (compared to other European examples after the fall of the iron curtain).

2 Value added: What is New in the Research Task?

Of course, we are not able to give the final ever lasting answer either in the debate among system analysts coming from the natural sciences with - or against - economists, historians and social scientists, but we have enough evidence coming from the long waves debate as well, as from hardened experience with systemic – evolutionary management models like VSM, PIMS, and the St. Gallen approach following A. Gälweiler and F. Malik,

to formulate our thesis, which can be used to evaluate applicable tools for geopolitical analysis and forecasting, especially when handling questions regarding advanced services in security research according to the current EU program, and used to find, form and optimize alliances and cooperation's among stakeholders of critical infrastructure from governmental authorities, industry and R&D with universities, as well as non – university research institutions, from Austria, Switzerland and the other central European states, especially along the Danube region.

Therefore the thesis goes beyond traditional deconstructionist evaluation of possible macro theories on this subject on the one hand

(what we thankfully respect, and in the case of the leading contemporary Austrian Geopoliticians like Elisabeth Lichtenberger, Friedrich W. Korkisch, Heinz Nissel, Andrea Riemer and Erich Reiter, we always included in our research at the Cabinet of the MoD/Directorate of Security Politics),

or a deconstructionist evaluation of possibly applicable Models of systemic evolutionary management on the other hand

(what we respect too, but in our case empirically hardened the research work of the MZSG St. Gallen, we always used in our research work since 1985),

and tries to close the gap between geopolitical and –economical macro theories

and the systemic evolutionary models of MBA and NPO management,

at least in the case of current Swiss – Austrian geopolitical pattern and its consequences on the integration in European security research.

I hope our findings show, that (applied at least on this case special case) the use of TTB related technological substitution curves either within the Gälweiler Model or by macro models using Volterra – Lotka equations, can identify tacit knowledge and the development of new relevant strategic potentials.

This is less than Cesare Marchetti hopes, but much more, than any explanation out of the inner situation of the analyzed subsystem.

Research Work, **Publications** and Standards of Required Quality

(Verification/Falsification of the thesis see above)

Since 1983 until today the questioned standard was the highest possible according to the formal requirements of the Austrian Government/MoD, because working on qualified positions either at the scientific advisory board of the MoD (interdisciplinary research doing at the “GSK/Geistes- und Sozialwissenschaftliche Kommission des BMLV³³”, followed by the

³³The “Geistes- und Sozialwissenschaftliche Kommission des BMLV”, followed by the “Wissenschaftskommission des BMLV” is an Institution with the legal status according to § 8 Bundesministerien Gesetz, BMG idgF, as advisory board to the Minister with a own statut.

“WissKomm/Wissenschaftskommission des BMLV”, and partially by the joined working group of MoD and AAS, in Geopolitics esp. by Elisabeth Lichtenberger, who’s expertise is standard by the “WissKomm/Wissenschaftskommission des BMLV”³⁴) and the Cabinet, responsible for security political trends, or as evaluator of the science foundation of the State and City of Vienna, and, at the same time on academic teaching³⁵, we had to guarantee the highest possible working standards according to the job description (“Arbeitsplatzbeschreibung”), the scientific output and expertise³⁶ and

Integrated is a “Kommission der ÖAW, Österreichischen Akademie der Wissenschaften für die wissenschaftliche Zusammenarbeit mit den Dienststellen des BMLV”, with the legal status of administrative treaty between the ÖAW and the MoD, delegated to LVAK, National Defense Academy.

³⁴ See: „Projektbericht 1: Elisabeth Lichtenberger, Geopolitische Lage und Transitfunktion Österreichs in Europa“, Verlag der Österreichischen Akademie der Wissenschaften, Wien, 1999; and see: „Projektbericht 3: Elisabeth Lichtenberger, Analysen zur Erreichbarkeit von Raum und Gesellschaft in Österreich“, Verlag der Österreichischen Akademie der Wissenschaften, Wien, 2001;

³⁵ As shown in Curriculum Vitae research was done voluntarily at Military Academy and at University of Vienna, Faculty of Law until 1983. Working at the Austrian Ministry of Defense GSK, WissKomm and Cabinet, Directorate for Security Politics (the WPol) under the constitutional framework of the constitutional Comprehensive Defense Plan (LVPlan), drawn up in the time of the bipolar world, we have to include our former research partners to explain our modus operandi in more detail: Special importance among Austrian social researchers can be attributed to Ernst Gehmacher, Klaus Zapotozky, Egbert Apfelknab, still current members of the WissKomm, to Werner Beutelmeyer and others, in cooperation with Karl Semlitsch, Wolfgang Schneider, Franz Hammer and the late Egon Matzner, and in cooperation with the comprehensive defense directorate in the BKA, the Federal Chancellery.

In the period of European Integration after the fall of the Iron Curtain, much research was done together with the BKA/VGT (the Faculty of Economics at the Corvinus University), Budapest, and in addition, with the Arbeitskreis Militär und Sozialwissenschaften (AMS) in Switzerland, and with German partners, as well as with the scientific institutions of the Austrian Army and the MoD.

We had cooperation with Fredmund Malik (Malik Management Center, St.Gallen) starting from 1985, and since 1990 with György Nogradi, who is the only foreign member of the scientific commission of the Austrian minister of defense, the WissKomm.

After restructuring the MoD (in 2002), the research work was completed with analysis in foreign trade, knowledge and technology transfer at the Austrian Federal Institute for International Transfer of Education and Training under Gemot Grimm (BIB, operated mainly by the Austrian Ministry of Culture, Education and Science; now AT, Austrian Technologies, operated mainly by BMVIT).

Our most recent success was the evaluation of DOST by the EU commission as “eligible”, granting high priority to a joint proposal of our team under the leadership of Ingo Wieser, BMVIT, and Fritz Steinhäusler, University of Salzburg, together with Corvinus/VGT, Budapest, the university of Armed Forces in Brunn/Cz and the Austrian Red Cross Research Institute, regarding the training and evaluation of first responders.

This recent success has of course no direct predecessors, because security is a new theme in EU R&D and has been included in the list of priority research themes in the proposal for the 7th Framework Program for Research & Development issued to the European Parliament and Council by the Commission.

In this thesis I will focus on the main topic, the Swiss – Austrian possibilities, limits and options forming alliances, especially regarding security research on the field of situational awareness.

As author, it would be impossible to gather and handle the amount of data as well as the methodological input alone, and this work is product of joint efforts as mentioned above.

Of course, not all the contributors share all the interpretations in any detail (I will identify dissenting opinions in the different scenarios); and, of course, the author is fully responsible for any mistakes and errors.

We argue unanimously that if you look at the predictions which we made publicly from the dissolution of the Soviet Union until now (and which were sometimes strongly criticized in the Austrian political discussion) about security politics, and at the validity of our predictions and threat analysis, those predictions have been very accurate (see Viragh at: Stix, Nogradi "*Gut gegen Böse: über Propheten, Propaganda und Potentiale*", Vienna 2002).

As researchers at the Office for Security Politics we and our scientific partners in Austria, the Switzerland and in Hungary have always been quite pragmatic: Invariably, our approach was to use existing and proven social research tools, notably polling techniques, the common methods of cost-benefit analysis, and scientific approaches used in the applied sciences dealing with security politics, security economics and applicable law.

A team of experts was established with the working program 2005 by AT for actual studies and Delphi setting (estimations on developments in security politics, currently the “Expert Platforms I and II of AT according to the order of the Minister infrastructure and technology/BMVIT”) or evaluations and cost - benefit analysis, and the starting point was to look and identify those positions, which have been shown to be quite valid in predicting midterm developments.

³⁶ **PUBLICATIONS: (WICHTIGSTE PUBLIKATIONEN)**

***"Gut gegen Böse - über Propheten, Propaganda, Potentiale",
gemeinsam mit Georg Nogradi (und Friedrich Korkisch für das Kapitel "Filmpropaganda"),
Wien, September 2002, printed by AMS, Austria Medien Service, Graz***

POCKETBOOKS: *"Wir und die anderen - wie geht es weiter? Samuel Huntingtons Thesen vom "Kampf der Kulturen" am Prüfstand von Sicherheitspolitik, Geschichte, Ökonomie und Logistik",*

Wien, August 1998, printed by AMS, Austria Medien Service, Graz

***2nd EDITION: "Wir und die anderen - wie geht es weiter? Samuel Huntingtons Thesen vom "Kampf der Kulturen" am Prüfstand von Sicherheitspolitik, Geschichte, Ökonomie und Logistik", ergänzte Version,
Wien, October 2001, printed by AMS, Austria Medien Service, Graz***

3rd EDITION: "Wir und die anderen - wie geht es weiter? Samuel Huntingtons Thesen vom "Kampf der Kulturen" am Prüfstand von Sicherheitspolitik, Geschichte, Ökonomie und Logistik", nochmals ergänzte Version incl. Technologiefolgen - Studie gemeinsam mit MARKET,

Wien, January 2001, printed by Austria Medien Service, Graz;

***"Worauf können Sie noch vertrauen? Analysen, Prognosen, Potentiale in Krisen und Kooperationen"
Wien, Dezember 2001, printed by AMS***

MAIN STUDIES:

"Europäische Sicherheitsoptionen nach EU Beitritt", Wien, Oktober 1995, BMLV-WPol,
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Infrastrukturentwicklung", Wien, März 1996, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Sicherheitsarchitektur und Demografische
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September 1996, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - EU, der Westen und die Kultur des Krieges", Wien,
Dezember 1996, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Samuel Huntingtons "Clash of Civilisations",
Wien, Februar 1997, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - historische Schnittstellen des heutigen Westens",
Wien, Juni 1997, BMLV-WPol
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traditioneller geopolitischer Optionen", Wien, Oktober 1997, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Krieg der Kulturen oder doch Handelskriege?",
Wien, Dezember 1997, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Nationalstaaten und Neutrale in der bipolaren
Welt", Wien, März 1998, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Kolonialmachtpolitik und Supermachtpolitik im
kalten Krieg", Wien, Juni 1998, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - kulturelle und ökonomische kritische Massen für
Expansionsbewegungen", Wien, Dezember 1998, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Zyklen des Krieges im Sinne des US TRADOC im
Vergleich zu Marchetti", Wien, März 1999, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Mobilität, Siedlungsdichte und industrielle
Entwicklung", Wien, Juni 1999, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Mobilität, Siedlungsdichte und
Informationsgesellschaft", Wien, Oktober 1999, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - der europäische Erfolgsweg: eine Frage der
Geografie?", Wien, Dezember 1999, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Sicherheitssysteme der Nordhalbkugel", Wien, Juni
2001, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - Krisenherde der Welt. Kampf der Kulturen
verhindern, nicht wegschauen!", Wien, März 2002, BMLV-WPol
"Wehrpolitische Informationen und Lagebeurteilungen - von den "Grenzen des Wachstums" zum
"Wachstum ohne Grenzen", Wien, Juni 2002, BMLV-WPol

RESEARCH, ANALYSIS AND TREND EVALUATION IN SECURITY POLITICS:

(WEHRPOLITISCHE INFORMATIONEN):

THE RESEARCH WORK SINCE 1983, ESPECIALLY SINCE 1995,

WAS THE BASE OF THE MoD OFFICIAL INFORMATION DOCTRINE

FOR SECURITY POLITICAL AFFAIRS IN THE YEAR 1996, IN THE YEAR 1998, IN THE YEAR 2001 AND, IN THE YEAR
2002, AND IS STILL VALID!

MISCELLANEOUS

PUBLICATIONS IN LAW, SECURITY POLITICS AND SOCIAL SCIENCES:

WISSENSCHAFTLICHE BEITRÄGE über sicherheitspolitische und rechtswissenschaftliche Themen in:
RICHTERZEITUNG, den militärischen Publikationsorganen SOLDAT, TD und ÖMZ, SiPol SR der OGW;
der Wissenschaftsredaktion der ZZ, sowie in Festschriften diverser Universitäten (zuletzt Universität LINZ)

PROGRAMMATISCHE BEITRÄGE sowie gesellschaftspolitische PUBLIZISTIK, insbesondere auch
FA und GENIUS, LIBERAL AKTUELL, JAHRBÜCHER der politischen Akademien,
politischen Magazinen wie PROFIL, Qualitätstagespresse wie PRESSE und STANDARD, uvm.

JURIDICA: GUTACHTEN für die Verfahren vor den Höchstgerichten

Publikationen für akademischen UNTERRICHT(Skripten)
in Personal- und Wehrrecht
sowie humanitärem Völkerrecht, Recht der IO, Verfassungsrecht
und europäische Verfassungsentwicklung
Sowie für
MIL UNTERRICHT: sh "Akademische Gebiete":

the annual evaluation (“Mitarbeiterbeurteilung” and “Mitarbeitergespräch”) according to the federal legal system³⁷ and the Vienna state legal system (with the same criteria according to the Austrian constitution³⁸).

See also: Verification or possible Falsification of my Position³⁹.

I.)

1.) Allgemeine Sicherheitsökonomie und Entwicklung der europäischen Sicherheitsarchitektur;

2.) Verwaltungsökonomie unter besonderer Berücksichtigung der Sicherheitsverwaltung in staatlichen sowie Non- Profit Organisationen (einschließlich der NGO's) und in gewinnorientierten (Kapital-) Gesellschaften mit transnationalem Einzugsbereich;

3.) Internationales Recht unter besonderer Berücksichtigung des humanitären Völkerrechtes;

II.)

1.) Historische Entwicklung, sicherheitspolitische sowie ökonomische Analyse und Prognose von politischen Hegemonialsystemen unter besonderer Berücksichtigung angewandter Rechtssysteme;

2.) Historische Entwicklung, sicherheitspolitische sowie ökonomische Analyse und Prognose von von politischen Allianzen (seit 1993 unter besonderer Berücksichtigung von Samuel Huntingtons Theorie des „Clash of Civilisations“);

3.) Historische Entwicklung, sicherheitspolitische sowie ökonomische Analyse und Prognose von Wettbewerbfähigkeit und Schlüsselpotentialen unter besonderer Berücksichtigung von Problemen des Wissensmanagements, des Knowledge- Transfers und von Technologieindizes;

4.) Historische Entwicklung, sicherheitspolitische sowie ökonomische Analyse und Prognose von Infrastruktursystemen;

III.)

1.) Bi- und multilaterale Kooperation bei grenzüberschreitender Zusammenarbeit sowie bei internationalen Einsätzen,

2.) insbesondere in Angelegenheiten des Krisen- und Notfallmanagement,

3.) unter besonderer Berücksichtigung der Rechtsrisiken und des PR- Managements;

IV))

1.) Financial Engineering According to the OEEC CONSENSUS Rules

2.) Internationale Kooperationen auf den Gebieten von Wirtschaft, Wissenschaft und Forschung sowie Technologiepolitik

³⁷ BDG idgF iVm GehG idgF

³⁸ B-VG

³⁹ I.) Regarding the primary position of my thesis, the enhanced midterm predictability of Swiss – Austrian geopolitical patterns (and therefore possible optimization of options esp. in the field of security politics and research cooperation's) by the application of phenomenological analyses on Swiss – Austrian geopolitical patterns in addition to conventional expertise out of the inner status of the analyzed subsystems:

A) A verification of the conventional alternative:

The evaluated proof, that the geopolitical connected patterns of Switzerland and Austria are a historical singularity at the main Alpine regions just by chance, is a clear falsification of my thesis.

B) A falsification of macro models and theories applied in my thesis on Swiss – Austrian geopolitical patterns in addition to conventional expertise out of the inner status of the analyzed subsystems:

1.) A falsification of models of technological diffusion and substitution (following the basic assumption of Gerhard Mensch as a special case of Schumpeter and as developed and applied by Cesare Marchetti and Nebojsa Nakicenovic) is highly unlikely, but would be a falsification of my position too.

2.) A falsification of underlying theories about the existence of cultural evolution according to

a) either applied system theorists working with Darwinian logics like Cesare Marchetti, the school of George Modelski, or more general similar schools coming from natural sciences like Stuart Kaufman,

b) or macro economical schools clustered at the Austrian School of Economics (especially following Schumpeter, Mises, Hayek, Buchanan, Gary Becker or Vernon Smith),

c) or geopolitical schools when focusing on geoculturalism at settlement patterns as Paul Kennedy, S.P. Huntington or Francis Fukuyama, would be a falsification of my position too.

3.) A falsification of the model of TTB, Travel Time Budget according to Yakov Zahavi would be a falsification of my position too.

4.) A falsification of the central place theory following Christaller and the application with the theory of Polarization of Metropolises as applied by Elisabeth Lichtenberger would limit my position strongly.

5.) A falsification of the interconnectivity of communication to mobility, transport and trade, especially as shown by Arnulf Grübler would limit my position.

6.) A falsification of fiduciary clusters according to Hägerstrand,

7.) and a falsification of generational clustering according to Schlesingers Sr. and Jr. and to Strauss – Howe would limit my position.

8.) Of course the identification of the TTB (and fiduciary cluster) connected patterns as a special sub case of a more general theory of systemic evolution (of information processing viable systems) on the one hand, or,

9.) on the other hand the proof, that the TTB connected patterns according to Switzerland and Austria are a historical singularity at the main Alpine regions just by chance,

would modify in the first case, and limit in the second one my position.

II.) Regarding the enhanced midterm predictability of Swiss – Austrian geopolitical patterns (and therefore possible optimization of options esp. in the field of security politics and research cooperation's) by the application of phenomenological analyses on Swiss – Austrian geopolitical patterns in addition to conventional expertise out of the inner status of the analyzed subsystems (see above),

and the integration in management models following Stafford Beer's VSM, Any Viable System theory, into the St. Gallen navigational system according Aloys Gälweiler and even on a detailed operative level of application by the use of PIMS, Profit of Impact System and databank in the interpretation of Fredmund Malik,

as the secondary part of my thesis:

C) A falsification of Stafford Beer's VSM, Any Viable System theory would strongly limit my position, depending on the question, if a falsification is a general one like to B1.) to B2.), or a limitation of the VSM model.

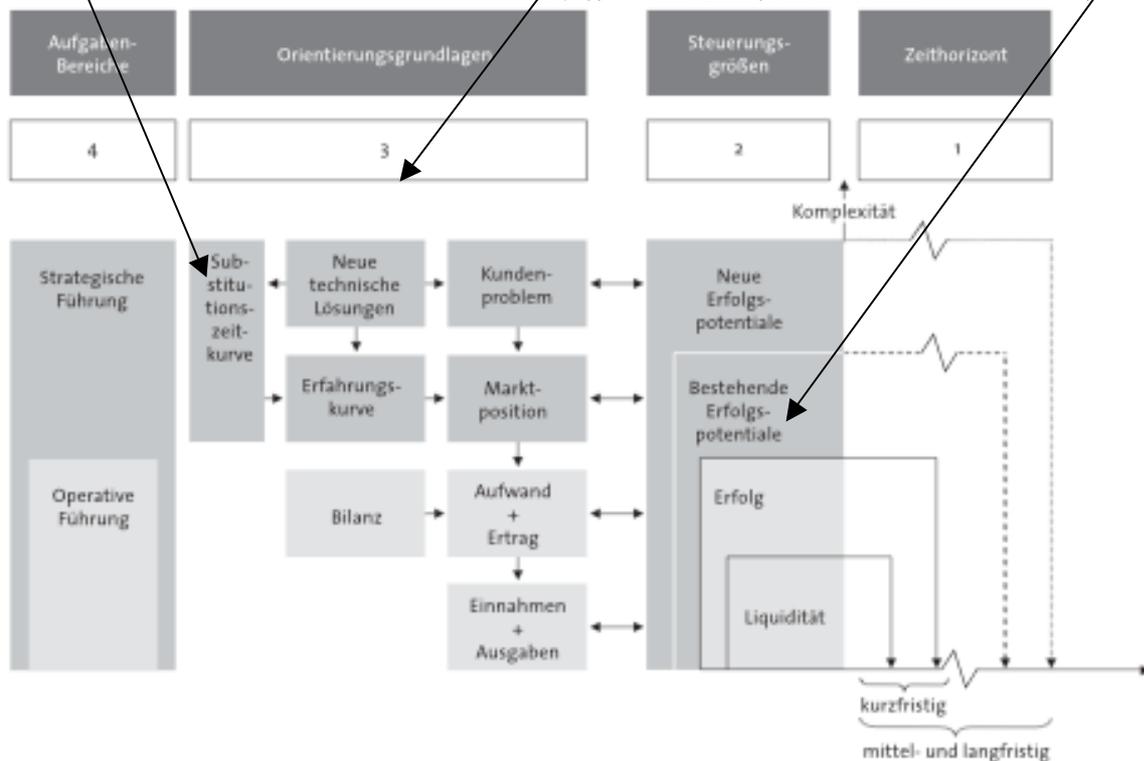
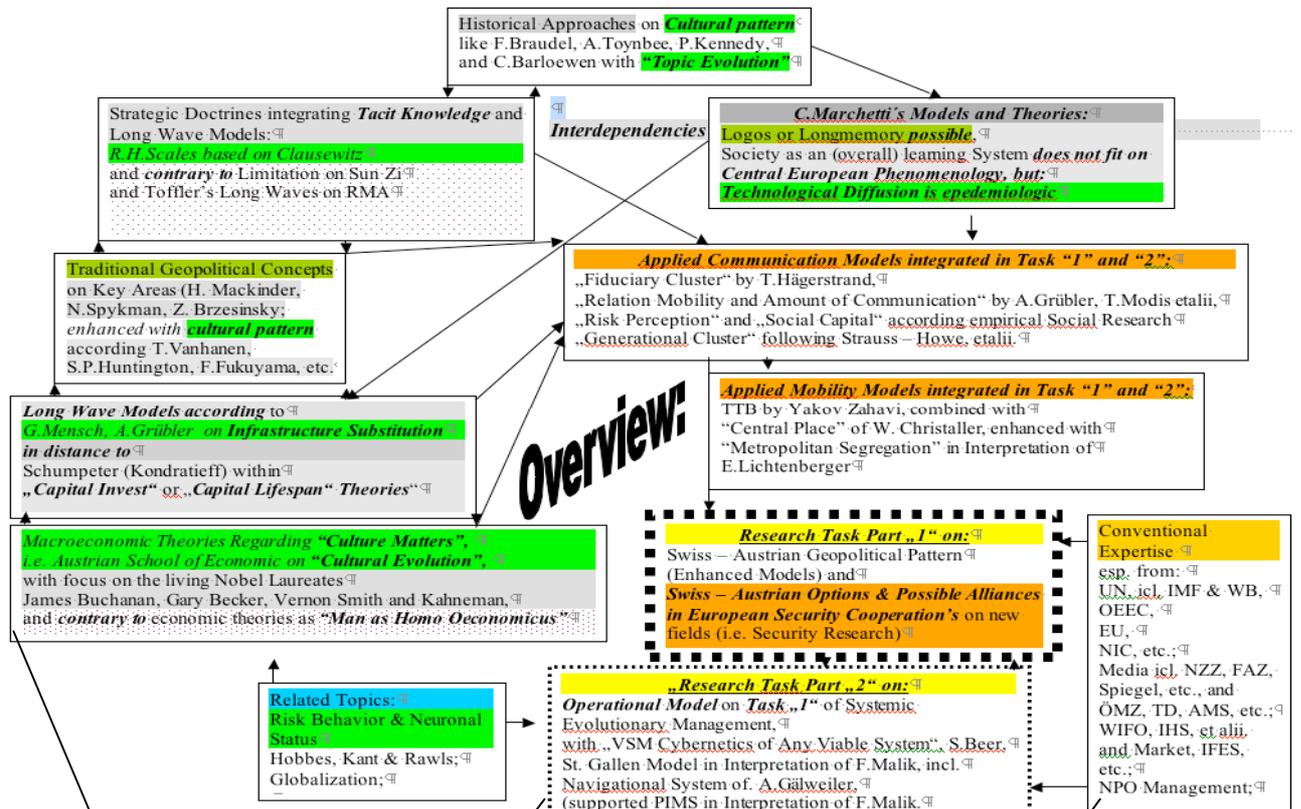
D) A falsification of either the the St. Gallen Model

1.)ie, the navigational system according Aloys Gälweiler,

2.) or the much more detailed operative level of application by the use of PIMS, Profit of Impact System and databank in the interpretation of Fredmund Malik;

3 A simplified Overview of our Position between the Research Hypothesis and the competing Schools

*A simplified overview of the Positioning our Thesis between the competing Schools
(and their connection with the St. Gallen Model shown with the Gälweiler Navigational System,
terms of the Gälweiler Model in original german language)*



3.1 Thesis, Prospective scientific results and exploitations

3.1.1 Summarised Conclusions

3.1.2 with main Processed Literature

3.1.3 and Related Publications:

Thesis: A phenomenological analysis of geopolitical patterns and developments of Swiss – Austrian competitive potentials and possible alliances especially on the new field of European Security Research cooperation, combined with and based on Stafford Beers⁴⁰ VSM- “Any viable System”⁴¹ Model out of a set of strategic tools in the frame of systemic - evolutionary Management Models, esp. including the Gälweiler Navigational System⁴², connected with the findings of PIMS- “Profit Impact on Market Strategy”⁴³ databank in the interpretation of Fredmund Malik⁴⁴, applicable on traditional sophistic security -strategic Models (like the trinity concept according to Clausewitz⁴⁵) handling implicit and tacit knowledge⁴⁶, and updated with current state - of - art applications of Substitution Wave Models (methodologically within the range between the concepts of Schumpeter⁴⁷, Gerhard Mensch⁴⁸, Theodore Modis⁴⁹,

40 Anthony Stafford Beer at: “Brain of the Firm”; Allen Lane, The Penguin Press, London, Herder and Herder, USA, 1972, Translated into German, Italian, Swedish and French. “The Heart of Enterprise” 1979; John Wiley, London and New York. Reprinted with corrections 1988. “Brain of the Firm”; 1981, Second Edition (much extended), John Wiley, London and New York. Reprinted 1986, 1988. Translated into Russian.

41 Anthony Stafford Beer at: “The Heart of Enterprise” 1979; John Wiley, London and New York. Reprinted with corrections 1988; “How Many Grapes Went into the Wine: Stafford Beer on the Art and Science of Holistic Management”; Hamden, R and Leonard, A. (Eds.), John Wiley, Chichester, 1994.

42 See graphic at „Stix literatur Annex“ according to Aloys Gälweiler at: “Unternehmensplanung – Grundlagen und Praxis”, Frankfurt/New York, 1974; Gälweiler died 1984 and was until then Direktor der Unternehmensplanung bei Brown, Boveri & Cie and visiting Professor at Universität Köln, der FH Ludwigshafen, der Universität Gießen, der TA Wuppertal, der Hochschule St. Gallen und am Management Zentrum St. Gallen.

43 See: Buzzell, Robert D., and Mark J. Chussil. “Managing for Tomorrow.” Sloan Management Review (summer 1985): 3-14.;

Buzzell, Robert D., and Paul W. Farris. “Marketing Costs in Consumer Goods Industries.” In Strategy + Structure = Performance, 122-45, edited by Hans Thorelli. Bloomington, IN: Indiana University Press, 1977 .

Buzzell, Robert D., and Frederik D. Wiersema. “Modelling Changes in Market Share: A Cross-Sectional Analysis,” Strategic Management Journal 2 (1981): 27-42.

“Successful Share-Building Strategies.” Harvard Business Review (January-February 1981): 135-44. (Reprint #81101)

44 Source: MZSG, St. Gallen, it does not include privately circulated working papers, conference presentations, marketing materials or similar materials because out of copyrights; See also “The PIMS program of strategy research: A retrospective appraisal.” Journal of Business Research (2002): 1-6.; and Fredmund Malik at: „Systemisches Management, Evolution, Selbstorganisation – Grundprobleme, Funktionsmechanismen und Lösungsansätze für komplexe Systeme“; 2003 at Verlag Paul Haupt Bern Stuttgart Wien, 3rd Edition (1st edition 1993)

45 according to Clausewitz, Karl Von; edited and translated by Michael Howard and Peter Paret. (1976). “On War”, Princeton: Princeton University Press. ISBN 0691056579; and Clausewitz, Carl von. Col. J. J. Graham, translator. “Vom Kriege. On War — Volume 1”, Project Gutenberg eBook

⁴⁶ For US armed forces see: Hedlund, J., Sternberg, R.J., & Psocka, J. (2000) Identifying the abilities involved in the acquisition of tacit knowledge. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. Sternberg, R.J., Forsythe, G.B., Hedlund, J., Horvath, J. A., Tremble, T., Snook, S., Williams, W.M., Wagner, R.K., & Grigorenko, E.L. (2000). Tacit knowledge in the workplace. Technical Report 1093). Alexandria,

47 Joseph Alois Schumpeter at “Capitalism, Socialism, and Democracy”, Harvard 1942; Schumpeter died 1950 as an former Austrian Minister of Finance, and as an economist whom the Wall Street Journal has called him "the most important economist of the 20th century"

48 Gerhard Mensch at: „Das Technologische Patt: Innovationen Überwinden die Depression“, Frankfurt (1975), Umschay Mensch, Gerhard at: „Stalemate in Technology: Innovations Overcome the Depression“; 1979, by: Bellinger Publishing Company. Cambridge;Mass.

49 Theodore Modis at: „An S-Shaped Trail to Wall Street - Survival of the Fittest Reigns at the Stock Market“, (Growth Dynamics), Geneva, Switzerland, April 1999, and Mass Market Paperback, 1999; at: “Conquering Uncertainty: Understanding Corporate Cycles and Positioning Your Company to Survive the Changing Environment”, BusinessWeek Books (McGraw-Hill), New York, June 1998; at: “Predictions - Society's Telltale Signature Reveals the Past and Forecasts the Future”, Simon & Schuster, New York, 1992; at: “Predictions: - 10 Years Later”, (Growth Dynamics), Geneva,

***Nebojsa Nakicenovich⁵⁰ and Cesare Marchetti⁵¹,
but in distance to the competing main macro – economical schools of long wave cycles, mostly in the
Kondratieff⁵² or Kuznets⁵³ type, with macro economical explanations discussing capital interest and
capital life span theories),
methodically based on (Volterra – Lotka⁵⁴ type) epidemiological diffusion processes (eventually in***

Switzerland, October 2000. and at: “Forecasting the Growth of Complexity and Change”, *Technological Forecasting & Social Change*, 69, No 4, 2002, an interesting essay on the growth of complexity in the universe.

50 Nebojsa Nakicenovic at: “Socioeconomic Driving Forces of Emissions Scenarios”, in: *The Global Carbon Cycle*, herausgegeben von: SCOPE 62; Island Press, Washington, 1-55963-527-4, S. 225 - 239, 2004; N. Nakicenovic, at “Global energy perspectives and the role of technology, *Elektrotechnik und Informationstechnik (e&i)*”, 10, 309, 120. Jahrgang, 2003; at: B. O'Neill, A. Grübler, N. Nakicenovic et al., “Planning for future energy resources”, *Science*, 300, 581. (ISSN 0013-936X), 2003.; at: A. Grübler, N. Nakicenovic, W.D. Nordhaus (eds), “Technological Change and the Environment, Resources for the Future Press”, Washington, DC, USA, 407 pp. (ISBN 1-891853-46-5), 2002.

51 Cesare Marchetti is the author of about 150 publications in the domain of systems analysis for energy, society and economics we used in our work. The main elements of his approach we use in our work are at:

Marchetti, C., 1977 “On Progress and Providence”,

PP-77-10, International Institute for Applied Systems Analysis, Laxenburg, Austria;

Marchetti, C., 1977, “On Strategies and Fate”, *Physics in Technology*, 8 (4):157—162; Marchetti, C., 1977

“Primary Energy Substitution Models: On the Interaction Between Energy and Society,” *Technological Forecasting and*

Social Change, 10:345—356; Marchetti, C., 1977, “Sind die bisherigen Energie-Berechnungen falsch?”, *Bild der*

Wissenschaft, 7 :68—77; Marchetti, C., 1982 “Die magische Entwicklungskurve”, *Bild der Wissenschaft*, 19 (10):114—

128; Marchetti, C., 1982

“Invention et Innovation: Les Cycles Revisités”, *Futuribles*, 53 :43—58; Marchetti, C., 1982 “Killer Stories -- A Systems

Exploration in Mortal Diseases”, PP-82-7, International Institute for Applied Systems Analysis; Marchetti, C., 1982

“Society as a Learning System: Discovery, Invention and Innovation Cycles Revisited”, *Syracuse Scholar*, 3 (2):21—37;

Marchetti, C., 1982 “The Long-Term Dynamics of Energy Markets Modeled in Terms of Ecologically Competing

Structures”, in A.S. Kydes (ed.), *Energy Modeling and Simulation : Proceedings of the 10th IMACS World Congress on*

Systems Simulation and Scientific Computation, North-Holland Publishing Co., Amsterdam, New York, Oxford; Marchetti,

C., 1983 “Innovation, Industry, and Economy -- A Top-Down Analysis”, PP-83-6, International Institute for Applied

Systems Analysis, Laxenburg, Austria; Marchetti, C., 198 “Innovation: A Vigorous River With High Banks”, WP-83-107,

International Institute for Applied Systems Analysis, Laxenburg, Austria; Marchetti, C., 1993 “Predicting Recession”, Paper

prepared for the Conference "The Next 24 Years", Copenhagen, 17 November 1993, organized by the Danish Society for

Future Studies; Marchetti, C., 1993

“Recession: How to Come Out of It?”, Paper prepared for the Unichal Conference in Paris; Marchetti, C., 1994

“Anthropological Invariants in Travel Behavior,” *Technological Forecasting and Social Change*, 47 :75—88; Marchetti, C.,

1994

“Millenarian Cycles in the Dynamics of the Catholic Church: A Systems Analysis”, *Technological Forecasting and Social*

Change, 46 :189—196; Marchetti, C., 1994 “Mobility: On the Potential and the Effects of Introducing Maglevs in the

European Transport System”, Report to the Commission of the European Communities Joint Research Center, Institute for

Prospective Technological Studies, Ispra (Varese), Italy, Contract No. 5374--93--07 ED ISPR; Marchetti, C., 1994

“Reflections on Population Dynamics”, International Institute for Applied Systems Analysis, Laxenburg, Austria; Marchetti,

C., 1995

“Transport Systems and City Organization: A Critical Review of the Relevant Literature”, Report to the Commission of the

European Communities Joint Research Center, Institute for Prospective Technological Studies, Ispra (Varese), Italy;

Marchetti, C., Meyer, P.S., and Ausubel, J.H., 1996 “Human Population Dynamics Revisited with the Logistic Model: How

Much Can Be Modeled and Predicted”, *Technological Forecasting and Social Change*, 52 :1—30; Marchetti, C., 1996

“Looking Forward -- Looking Backward: A Very Simple Mathematical Model for Very Complex Social Systems”,

paper presented at the conference "Previsione Sociale e Previsione Politica", held in Urbino, Italy, 13--15 June; Marchetti, C.,

2004

Della memoria a lungo termine e della necessità di un meccanismo digitale, *Systema Naturae*, 2004, Vol. 6, pp. 237-244;

Marchetti, C., 2005 “Methane Hydrates in Russia and Europe” IIASA Contract 98-152, International Institute for Applied

Systems Analysis, Laxenburg, Austria; Marchetti, C., 2005 “Is History Automatic and Are Wars a la Carte?”, keynote

presentation, NATO Advanced Research Workshop on Kondratieff Waves, Warfare and World Security, Covilhã, Portugal,

14 - 18 February 2005.

52 See: Kondratieff, Nikolai D. (1984) “The Long Wave Cycle”, (tr. Guy Daniels), New York: Richardson and Snyder with

Kondratieff’s own basic text. Nikolai Dmitriyevich Kondratiev (1892-1938) was a Russian economist proposing a theory that

Western capitalist economies have long term (40-60 year) cycles of boom followed by depression. These cycles are now

called "Kondratiev waves" as Schumpeter suggested. As an overview see: Joshua Goldstein, *Long Cycles: Prosperity and*

War in the Modern Age. New Haven, Yale University Press, 1988.

53 Simon Smith Kuznets was an economist who won the 1971 Bank of Sweden Prize in Economic Sciences in Memory of

Alfred Nobel "for his empirically founded interpretation of economic growth which has led to new and deepened insight into

the economic and social structure and process of development". Kuznets is credited with revolutionising econometrics,

“National Income and Its Composition, 1919–1938”, Published in 1941, it is one of the most historically significant works on

Gross National Product.

54 See Volterra, V., at: “Lecons sur la theorie mathematique de la lutte pour la vie”, (1931, Paris, by: Gauthiers – Villars).

Fisher – Pry⁵⁵ logarithmic forms as it is current state of art at the NATO's Advanced Research Group on Kondratieff Waves, Warfare and World Security⁵⁶) in the development and substitution of strategic potentials, compatible to main traditional geopolitical schools of the Western World (esp. according to H.Mackinder⁵⁷, N.Spykman⁵⁸, (Paul) Kennedy⁵⁹, H.Kissinger⁶⁰, Z.Brzezinski⁶¹, S.P.Huntington⁶² and F.Fukuyama⁶³, and macro economical concepts of cultural evolution following the Austrian School of Economics⁶⁴ esp. with A.Schumpeter, F.A.v.Hayek⁶⁵, J.Buchanan⁶⁶, G.Becker⁶⁷ and V.Smith⁶⁸,

55 J.C.Fisher and R.H.Pry at: „A Simple Substitution Model of Technological Change“, in „Technological Forecasting and Social Change“, Volume 3, 1971, pp. 75 – 88.

56 The last actual NATO Advanced Research Workshop held in Covilha (Portugal) on 14-18 February 2005 looked at “The Influence of Chance Events and Socio-economic Long Waves in the New Arena of Asymmetric Warfare”. The discussion focused on the challenge to the notion that warfare is a random occurrence having more or less transitory effects on the economic and social system.

57 Sir Halford John Mackinder at: "Britain and The British Seas", 1902, which included the first comprehensive geomorphology of Britain, and in which he described Britain as 'a lump of coal surrounded by fish', and in the formulation and addition of the Heartland Theory to the field of Geopolitics, with "The Geographical Pivot of History" 1904, a paper submitted to the Royal Geographical Society, his theory influenced the foreign policies of world powers ever since.

58 Nicholas Spykman at: “The Geography of the Peace”, New York, Harcourt, Brace and Company, 1944; Spykman N. at: “America's Strategy in World Politics: The United States and the Balance of Power”, New York, Harcourt, Brace and Company, 1942; Spykman N. with David Frisby, “The Social Theory of Georg Simmel”, Chicago, The University of Chicago press (c1925).

59 Paul Kennedy at: „The Rise and Fall of the Great Powers“, Random House, New York, 1986, as the world bestseller, based on „The Rise of the Anglo-German Antagonism“, and „The Rise and Fall of British Naval Mastery“, and followed by „Preparing for the Twenty-first Century“.

⁶⁰ Henry (Heinz Alfred) Kissinger at: „Diplomacy“, 1994, ISBN 067165991X.

⁶¹ Zbigniew Kazimierz Brzezinski at: “Game Plan: A Geostrategic Framework for the Conduct of the U.S.-Soviet Contest”, Boston: Atlantic Monthly Press, 1986) ISBN 087113084X, Brzezinski at: “Grand Failure: The Birth and Death of Communism in the Twentieth Century, New York: Charles Scribner's Sons (1989), ISBN 0020307306, Brzezinski at: “Out of Control: Global Turmoil on the Eve of the 21st Century”, New York: Collier (1993), ISBN 0684826364, Brzezinski at: “The Grand Chessboard: American Primacy and Its Geostrategic Imperatives”, New York: Basic Books (October 1997), ISBN 0465027261, subsequently translated and published in nineteen languages, and Brzezinski at: “The Choice: Global Domination or Global Leadership”, Basic Books, 2004, ISBN 0465008003.

⁶² Samuel Phillips Huntington at: “Who Are We? The Challenges to America's National Identity (2004), ISBN 0684870533; see also

Huntington at: “ “The Soldier and the State: The Theory and Politics of Civil-Military Relations” (1957); Huntington at: “The Common Defense: Strategic Programs in National Politics” (1961); Huntington at: “Political Order in Changing Societies” (1968); Huntington at: “American Politics: The Promise of Disharmony” (1981); Huntington at: “The Third Wave: Democratization in the Late Twentieth Century (1991); Huntington at: “The Clash of Civilizations and the Remaking of World Order (1996), the original 1993 Foreign Affairs article is available at Alamut.com; and Huntington at: “Culture Matters, How Values Shape Human Progress”.

⁶³ Francis Fukuyama at: „The End of History and the Last Man”, 1992, Francis Fukuyama at: „Trust: The Social Virtues and the Creation of Prosperity”, 1995; Francis Fukuyama at: “The Great Disruption: Human Nature and the Reconstitution of Social Order”, 1999; Francis Fukuyama at: „Our Posthuman Future: Consequences of the Biotechnology Revolution”, 2002; Francis Fukuyama at: „State-Building: Governance and World Order in the 21st Century”, 2004.

⁶⁴ In this connexion centered within the working range of the Mont Pellerin Society, with April 10th, 1947, the Founding Members “Statement of Aims”: inter alii: The redefinition of the functions of the state so as to distinguish more clearly between the totalitarian and the liberal order., Methods of re-establishing the rule of law and of assuring its development in such manner that individuals and groups are not in a position to encroach upon the freedom of others and private rights are not allowed to become a basis of predatory power; The possibility of establishing minimum standards by means not inimical to initiative and functioning of the market. “liberal” is used in its European sense, broadly epitomized by a preference for minimal and dispersed government, rather than in its current American sense which indicates the opposite preference for an extension and concentration of governmental powers.

In his opening address (republished in Studies in Philosophy, Politics, and Economics, Routledge, 1967), A.F.v.Hayek considered the name “Acton-Toqueville Society.” The name Mont Pellerin was chosen after the place of the first meeting, near Vevey on Lac Lemman, Switzerland.

⁶⁵ In detail discussed with an Austrian Economic Cycle theory, see below; but centrally arguing with „cultural evolution, similar to the natural evolution“, see A.F.v.Hayek at: „Die Anmaßung des Wissens – Neue Freiburger Studien“, Hrsg. Wolfgang Kerber, printed by Mohr, Tübingen 1996, ISBN 3161464028, and Hayek very explicit at page 80 and 81ff. J. Buchanan and V. Smith are related to the Hayek tradition of the European Forum Alpbach, the largest scientific annual congress of Austria.

⁶⁶ James Buchanan Jr. (USA) getting the Nobel Memorial Prize in Economics for his development of the contractual and constitutional bases for the theory of economic and political decision-making; J. Buchanan is strongly related to the Hayek tradition of the European Forum Alpbach, the largest scientific annual congress of Austria.

with concentration and focus on mobility behavior and settlement patterns (TTB acc. to WB69), and a second focus on diffusion and substitution of Technology in the field of transport and communication⁷⁰, produces faster quantitatively reliable and more far reaching results and an improved predictability of geopolitical developments, competitive potentials and options of possible alliances, especially on the field of security related services and R&D cooperation's for the landlocked neutral states in central Europe such as Switzerland and Austria with their constitutional system including cantons and federal states, then any estimation **only** out of the inner logic of the political development in the history (at least from the period beginning from the fall of the western roman empire until today) or out of current general or applied theories of social sciences, be they formulated in an traditional political expertise⁷¹ or as an OR⁷² model.

Further Literature, Definitions, Biographies, Additional Research, Comments: See: Annex, Part II

67 Gary Becker (USA), getting the Nobel Memorial Prize in Economics for having extended the domain of microeconomic analysis to a wide range of human behaviour and interaction, including nonmarket behaviour

68 Vernon L. Smith (USA) together with Daniel Kahneman (Israel/USA), Nobel Memorial Prize in Economics for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty for having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms

69 See: ZAHAVI, Yakov, founder of the TTB, made studies for the WB and the US Department of Transport; see Zahavi's papers in order of their appearance according to Metropolitan Travel Survey Archive: 1. Traveltime Budgets and Mobility in Urban Areas - May 1974; 2. The "UMOT" Model, Jun 1976, 3. Effects of transportation systems on the spatial distribution of population and jobs - November 1976, 4. The plain person's guide to the UMOT (Unified Mechanism of Travel) process - April 1977; 5. Can transport policy decisions change urban structure - January 1978; 6. The measurement of travel demand and mobility - December 1978; 7. The "UMOT"project -August 1979; 8. Dynamic Effects of Energy Policies on Travel Behavior and Urban Structure - April 1980; 9. A New Urban Travel Model - September 1980; see also Marchetti, C., 1995, at: "Transport Systems and City Organization: A Critical Review of the Relevant Literature", Report to the Commission of the European Communities Joint Research Center, Institute for Prospective Technological Studies, ISPRA, Italy.

70 see Arnulf Grübler at: „Technology and Global Change“, page 322, Cambridge University Press, UK, 1998 (1st edition), ISBN 0521591090; copyright by IIASA, International Institute of Applied System Analysis, Laxenburg Austria;

71 See as one of the worlds most relevant example: „GT, Global Trends 2015: A Dialogue About the Future With Nongovernment Experts” by: <http://www.cia.gov/cia/reports/globaltrends2015>; with the National Intelligence Council (NIC), “in close collaboration with US Government specialists and a wide range of experts outside the government, has worked to identify major drivers and trends that will shape the world of 2015”. In “Revisiting Global Trends 2010: How Our Assessments Have Changed” the NIC supports the new 2015 outlook inter alii, because “GT 2010 did not foresee the global financial crisis of 1997-98; GT 2015 takes account of obstacles to economic development in East Asia, though the overall projections remain fairly optimistic”. In the same period at least periodically St. Gallen's Fredmund Malik was warning about the US debt and the bubble economy at Wallstreet; see: Malik at “MoM, Malik on Management”, “m.o.m.® - Letter “, Monthly, St. Gallen by MZSG;

See also Joseph. E. Stieglitz, at: “The roaring Nineties: A New History of the Worlds Most Prosperous Decade”, New York, 2003;

Together with George A. Akerlof (USA), Michael Spence (USA) got Joseph E. Stiglitz (USA) the Nobel Memorial Prize “for their analyses of markets with asymmetric information”.

72 See: The International Federation of Operational Research Societies (IFORS) is an umbrella organization for operations research societies worldwide. Significant among these are the Institute for Operations Research and the Management Sciences (INFORMS) and the Operational Research Society (ORS). EURO is the association of European Operational Research Societies (EURO). MORS is the Military Operations Research Society (MORS).-based in the United States since 1966 with the objective of enhancing the quality and usefulness of military operations research analysis in support of defense decisions.

4 Verification or possible Falsification of my Position:

1.) Regarding the primary position of my thesis, the enhanced midterm predictability of Swiss – Austrian geostrategical patterns and the possible optimization of options esp. in the field of security politics and security research cooperation by the application of phenomenological analyses on Swiss – Austrian geopolitical patterns in addition to conventional expertise (out of the inner status of the analyzed subsystems):

A) A verification of restricted conventional expertise (out of the inner status of the analyzed subsystems) with the evaluated proof, that the security strategic patterns of Switzerland and Austria are a historical singularity at the main Alpine regions just by chance, would be a clear falsification of my thesis.

B) A falsification of macro models and theories applied in my thesis on Swiss – Austrian geopolitical patterns in addition to conventional expertise out of the inner status of the analyzed subsystems:

1.) A falsification of models of technological diffusion and substitution (following the basic assumption of Gerhard Mensch as a special case of Schumpeter and as developed and applied by Cesare Marchetti and Nebojsa Nakicenovic) would partly effect the Gälweiler Model and it would be a falsification of my position too.

2.) A falsification of underlying theories about the existence of cultural evolution according to a) either applied system theorists working with Darwinian logics like Cesare Marchetti, and partly the school of George Modelski, or similar schools of more general system analysis coming from natural sciences like Stuart Kaufman.

b) or macro economical schools clustered at the Austrian School of Economics regarding cultural behavior (especially following Schumpeter, Hayek, Buchanan, Gary Becker or Vernon Smith with Kahneman and Tversky),

c) or geopolitical schools when focusing on geoculturalism at settlement patterns as Paul Kennedy, S.P. Huntington or Francis Fukuyama, would be a very strong limitation of my position too.

3.) A falsification of the model of TTB, Travel Time Budget according to Yakov Zahavi would be a falsification of my position.

4.) A falsification of the central place theory following Christaller and the application with the theory of Polarization of Metropoles as applied by Elisabeth Lichtenberger would limit my position strongly.

5.) A falsification of the interconnectivity of communication to mobility, transport and trade, especially as shown by Arnulf Grübler would limit my position strongly.

6.) A falsification of fiduciary clusters according to Hågerstrand would limit strongly,

7.) and a falsification of generational clustering according to Schlesinger's Sr. and Jr. and to Strauss – Howe would limit something my position.

8.) Of course the identification of the TTB (and fiduciary cluster) connected patterns as a special sub case of a more general theory of systemic evolution (of information processing viable systems) on the one hand, or,

9.) at the other hand the proof, that the TTB connected patterns according to Switzerland and Austria are a historical singularity at the main Alpine regions just by chance, could modify in the first case, and falsify in the second one my position.

II.) Regarding the enhanced midterm predictability of Swiss – Austrian geopolitical and - strategic patterns (and therefore possible optimization of options esp. in the field of security politics and security research cooperation's) by the application of phenomenological analyzes on Swiss – Austrian geopolitical patterns in addition to conventional expertise out of the inner status of the analyzed subsystems (see above), and the integration of these macro tools in systemic evolutionary management models, following Stafford Beer's VSM - Any Viable System theory as main link into the St. Gallen Model (including the navigational system according Aloys Gälweiler and even on a detailed operative level of application by the use of PIMS, Profit of Impact System and databank in the interpretation of Fredmund Malik), as the secondary part of my thesis:

C) A falsification of Stafford Beer's VSM, Any Viable System theory would strongly limit my position, depending on the question, if a falsification is a general one like to B1.) to B2.), or a limitation of the VSM model.

D) A falsification of either the St. Gallen Model

1.) i.e., the navigational system according Aloys Gälweiler,

2.) or the much more detailed operative level of application by the use of PIMS, Profit of Impact System and databank in the interpretation of Fredmund Malik;

would limit my position on applicable management tools on Swiss – Austrian geopolitical patterns.

III.) Further research is needed in the field of measuring tacit knowledge, situational awareness,

threat perception and risk acceptance of segments in society defined by different religious beliefs and hierarchy of values,

(as this will be a main issue of the EU Security Research Program).

4.1.1 Related Research

Not part of this thesis - because of the restriction of ca. 125 pages – but strongly related⁷³ – are the findings from our research about:

Cultural patterns on threat perception and legitimacy according to Hobbes, Kant and Rawls;
Globalization and its effect on the perception of European Integration and ESP; Risk Behavior, Communication Patterns and Neuronal Status.

⁷³ like next meeting of NATO ASW after :The Influence of Chance Events and Socioeconomic Long Waves in the New Arena of Asymmetric Warfare 14 Feb 2005 - 18 Feb 2005 : Covilha, Portugal Co-Directors: Prof. Tessaleno Devezas, University of Beira Interior, Covilha, Portugal (Fax: 00351 275329972 E-mail: tessalen@demnet.ubi.pt) Prof. Yuri Yakovets, Russian Academy of Public Administration, Moscow, Russia

5 Practical Availability of the New Scientific results: first positive evaluated application

The findings of the thesis after the evaluation and the approval by UnivProf Dr.habil. Ernst Pflieger, Vienna, and by UnivProf Dr.habil. Siegfried Hermann, Vienna and Harvard, have been used for building the EU consortium and improving the DOST proposal to the EU Commission on the Preparatory Action on Security Research Call 2006 in Brussels.

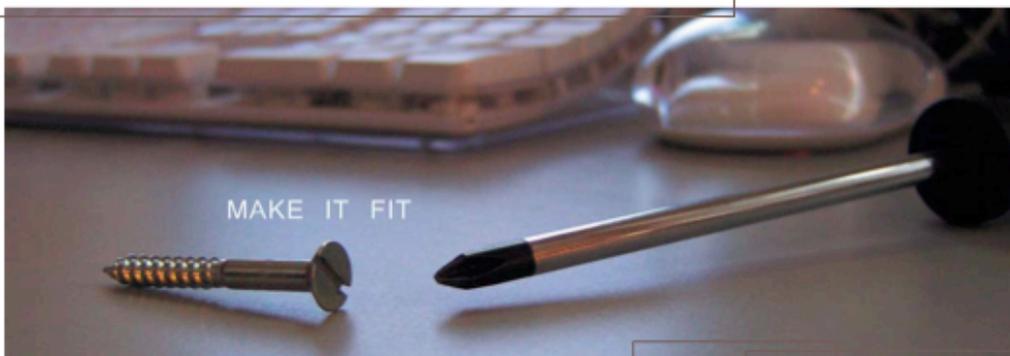
This DOST Proposal gained 23 out of possible 25 points by the EU evaluators and therefore the rank 4 among 162 EU consortiums.

EU – PASR DOST Cover⁷⁴ see last page.

DOST: WE MAKE IT FIT



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Bmo*LS Systems*EADS*SAAB*NI-Swedish Counter Terrorist Police Department*



End of the single integrated short version, status: February 2006