EUROPEAN LANGUAGE GRID

ELG: Technological Multilingualism in Austria
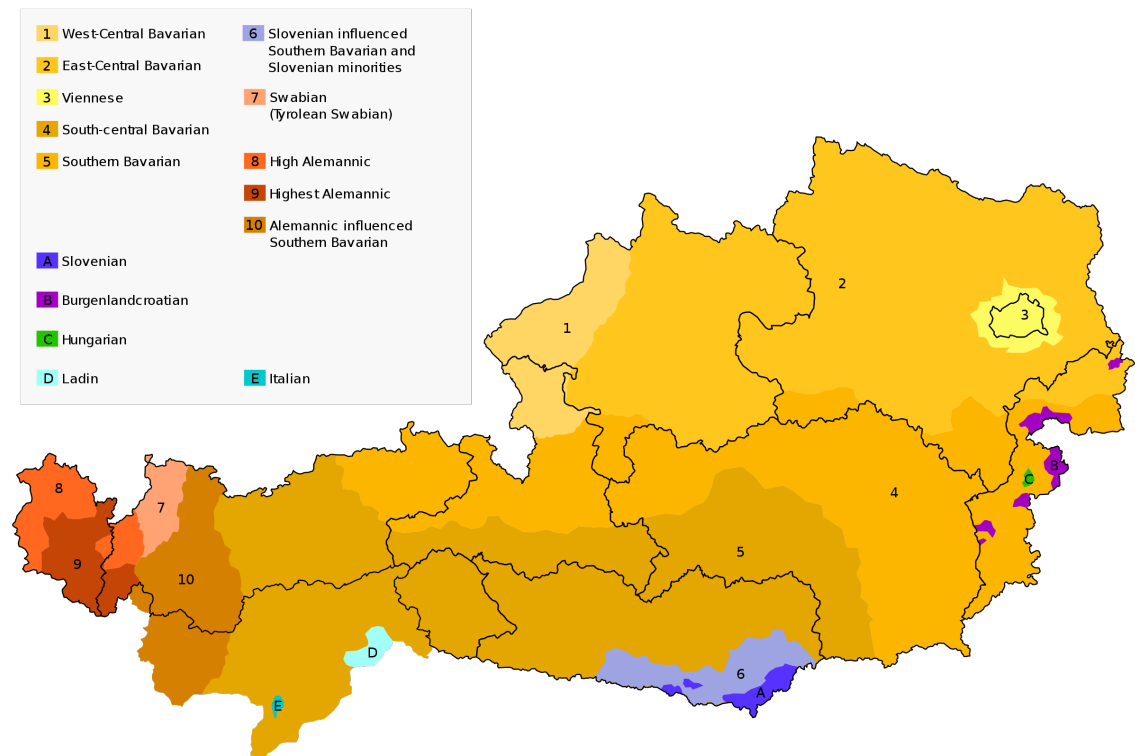
Dagmar Gromann (Centre for Translation Studies, University of Vienna) - NCC Austria
dagmar.gromann@univie.ac.at

Austrian German

- Standard Austrian German:

  - pronunciation: consonant weakening, e.g. backen (to bake) and packen (to pack)

  - grammar: different use of cases (Dative vs. Genetiv), perfect tense rather than past tense, prepositions, etc.

  - terminology: different use of terminology, e.g. foreclosure law: Zwangsvollstreckungsrecht" (de-DE), "Exekutionsrecht" (de-AT), and "Schuldbetreibungs- und Konkursrecht" (de-CH)

Austrian dialects:

1	West-Central Bavarian	6	Slovenian influenced Southern Bavarian and Slovenian minorities
2	East-Central Bavarian		
3	Viennese	7	Swabian (Tyrolean Swabian)
4	South-central Bavarian		
5	Southern Bavarian	8	High Alemannic
		9	Highest Alemannic
		10	Alemannic influenced Southern Bavarian
A	Slovenian		
B	Burgenlandcroatian		
C	Hungarian		
D	Ladin	E	Italian

Source:https://en.wikipedia.org/wiki/Languages_of_Austria#/media/File:Languages_Austria.svg
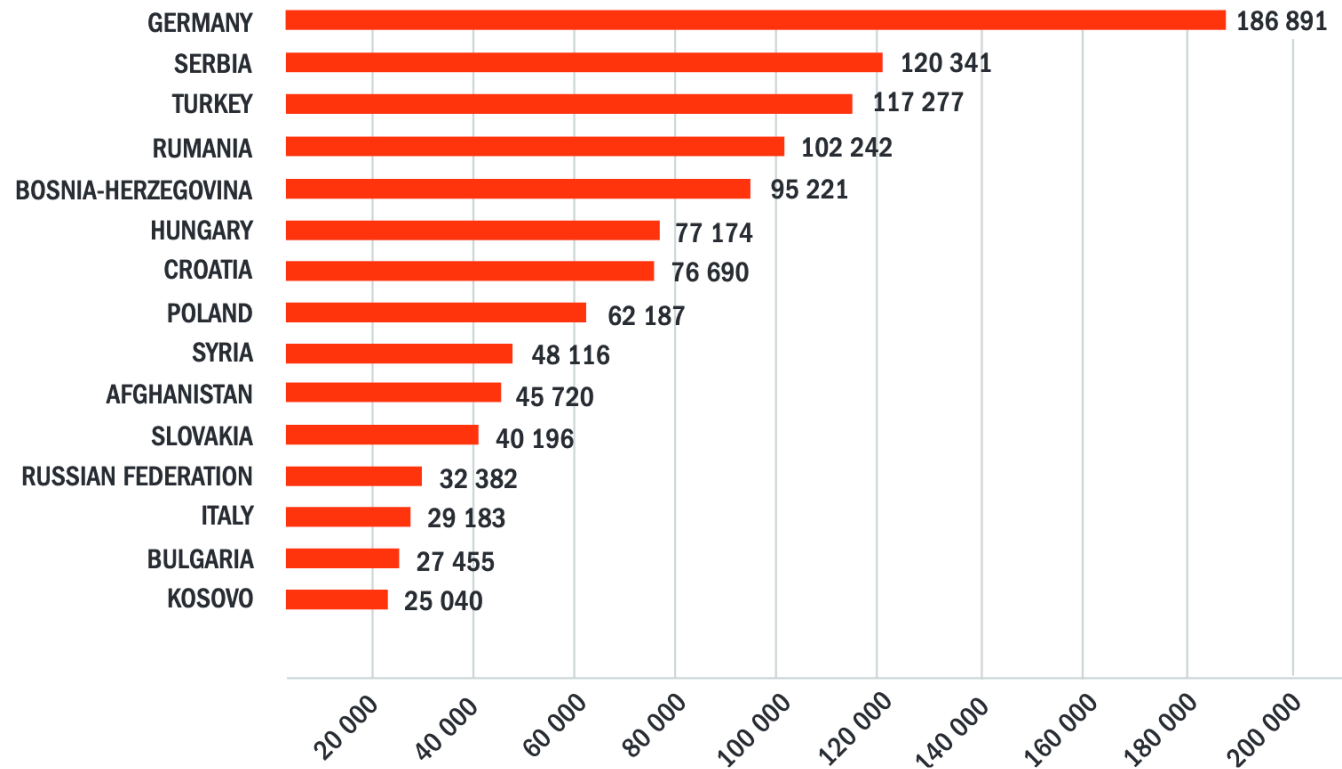
ELG

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Protocol No 10 on the use of specific Austrian terms of the German language in the framework of the European Union

- Beiried (rump steak)
- Eierschwammerl (chanterelle)
- Erdäpfel (potatoes)
- Faschiertes (minced meat)
- Fisolen (green bean)
- Grammeln (greaves)
- Hüferl (haunch)
- Karfiol (cauliflower)
- Kohlsprossen (Brussels sprouts)
- Kren (horseradish)
- Lungenbraten (filet)
- Marillen (apricot)

- Melanzani (eggplant)
- Nuß (thick flank)
- Obers (cream)
- Paradeiser (tomatoes)
- Powidl (plum jam)
- Ribisel (currant)
- Rostbraten (roast joint)
- Schlögel (leg/haunch)
- Topfen (curd)
- Vogerlsalat (lamb's lettuce)
- Weichseln (sour cherries)

ELG

Digital language extinction

- Austrian German:
  - **dialects**: very limited availability of sound recordings of different dialects over the past 100 years and few written records (few exceptions: e.g. "German in Austria" (F60), Austrian Academy of Science Initiatives, GRASS corpus of conversational speech of TU Graz)
  - **standard**: limited availability of structured, annotated language corpora or resources of Austrian German; considerable terminological differences
- Officially acknowledged linguistic minorities in Austria: (Burgenland) Croatian, Slovenian, Hungarian, Czech, Slovak, Romani; Austrian Sign Language often mentioned in this context
  - European Charter for Regional or Minority Languages - use in education and media; use in legal and administrative contexts is permitted and encouraged
  - mostly regulated on a regional basis and little harmonization, e.g. right for first language education only granted in specific regions
  - little digitalization efforts

Top-15 nationalities living in Austria (status: 2018)

Nationality	Number
GERMANY	186 891
SERBIA	120 341
TURKEY	117 277
RUMANIA	102 242
BOSNIA-HERZEGOVINA	95 221
HUNGARY	77 174
CROATIA	76 690
POLAND	62 187
SYRIA	48 116
AFGHANISTAN	45 720
SLOVAKIA	40 196
RUSSIAN FEDERATION	32 382
ITALY	29 183
BULGARIA	27 455
KOSOVO	25 040
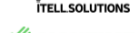
Source: https://www.caritas.at/fileadmin/storage/global/image/
Kampagnen-nach-Jahren/MIND/CommonHome_Webversion.pdf

AI Landscape Austria v2.1 - July 2019

Presented by **enliteAI**

Companies & Startups

AgriTech
SMARTBOW, FARMDOK, METOS, smaxtec

Automotive & Mobility
ANDATA Artificial Intelligence, AVL, virtual vehicle, EMOTION3D, INVENIUM Data Insights, TTTech, Parkbob

Big Data & Enablers
BRAINTRIBE, dynatrace, EXOSCALE, mostly AI, econob, KIVU, JAROONA, TRICENTIS, SAILLABS TECHNOLOGY, The unbelievable Machine Company

Enterprise
IBM Watson, Microsoft, Leftshift One, servicenow, Google Cloud Platform, SAP, 2021.AI, BOTBASE

FinTech
abacus.ac, BLU DELTA, COMMITLY, DATA SCIENCE, kompany, NECCTON, SPECTOSPHERE, 42 Center of Excellence for Artificial Intelligence, Rebellion Research, SmartStream, XephorSolutions

AI Hardware
AVI SYSTEMS, EVOLVE

Health & MedTech
allcyte, contextflow, Diagnosia, Innophore, cogvis, MAIA, KML VISION, Solgenium, eMurmur, image biopsy lab, mindcoach, ares genetics, SCARLETRED, snics, symptoma

Image & Video Processing
ANYLINE, CarCutter, forlan, IVM, KALEIDO, Trayzi, MoonVision, KESTRELEYE GmbH, Mapillary, AVI SYSTEMS

Industry & Robotics
AGILOM Agile Automation, Catalysts, craftworks, D'ARIA, senzoro, EDAQS, humai, IVISO, ORIGINAL+, robart Navigation Technology, robimo, Simple-AI, ToolSense, WorkHeld, QUOMATIC.AI

InsurTech
dolphin, twingz, prewave, riskine

Language & Text
ALPHARY, cortical.io, iTELL.SOLUTIONS, FACT AI, DeepOpinion, SIGNTIME, iTranslate, SEMANTIC WEB COMPANY, CALISTA

Media & Social Analytics
APOLLO.AI, tailorpost, eMentalist, STORYCLASH, UPDATEMI.

Productivity
Butleroy, DEEPSEARCH, grape, ONDEWO, ONLIM, SHEEPBLUE, xamoom, yodel

Retail & eCommerce
App Radar, IFDAQ, 7LYTIX, ask Sophie, smartengine, RATEBOARD, Cozyo, Danube, ZOOVU, DETEGO

Sales, Marketing & PR
emarsys, Flowtap, FRUX, kjero.com, LOGOSHUFFLE, intellyo, smec, TUNNEL23

Enablers & Extended Ecosystem

Universities & Educational Institutions
DONAU UNIVERSITÄT, MEDIZINISCHE UNIVERSITÄT WIEN, TU Graz, JKU Johannes Kepler Universität Linz, WU Wirtschaftsuniversität Wien, fh st.pölten, universität wien, FH JOANNEUM, imc FH KREMS, Controller Institut, TU WIEN Technische Universität Wien, FH Technikum Wien, FACHHOCHSCHULE WIENER NEUSTADT, FH Vorarlberg, ALPEN-ADRIA UNIVERSITÄT, FH OBERÖSTERREICH University of Applied Sciences Upper Austria, UNIVERSITY OF APPLIED SCIENCES UPPER AUSTRIA, FH Salzburg, UNIVERSITÄT SALZBURG, QUANTARGO

Research
OFAI, KNOW Center, amazon Prime Air, vrvis, AIT Austrian Institute of Technology, IST AUSTRIA, Pro²Future, dwh simulation services technical solutions, scch software competence center hagenberg, salzburg research, JOANNEUM RESEARCH, Fraunhofer AUSTRIA, RISC Software GmbH

Organizations & Communities
AI AUSTRIA, AI STYRIA, Vienna Deep Learning Meetup, DATA SCIENCE SOCIETY, AUSTRIAN STANDARDS, Machine Learning Graz, Digital Factory Vorarlberg FH Vorarlberg, VDSG Vienna Data Science Group, WeAreDevelopers

Public
ADVANTAGE AUSTRIA, Bundesministerium Verkehr, Innovation und Technologie, itSV, BRZ, TIP, StaDt Wien

Accelerators, Incubators & Investors
austria wirtschafts service, aws, I.E.C.T Hermann Hauser, ELEVATOR LAB, VENIONAIRE CAPITAL, ELEVATE, eQventure, FACTORY1

Media
der brutkasten, derStandard.at, futurezone, TRENDING TOPICS

Conferences
APPLIED ARTIFICIAL INTELLIGENCE CONFERENCE, AI Inside Summit, WeAreDevelopers AI Congress Vienna

Language technology and language-centric AI in Austria

Language technology and language-centric AI in Austria

- speech technologies, e.g. SAIL Labs, Signal Processing and Speech Communication Laboratory (SPSC Lab) TU Graz, and conversational AI, e.g. WienBot (digital assistant of the city of Vienna), Ondewo

- text-to-speech (TTS) voices in Standard Austrian German, e.g. CereProc

- terminologies, e.g. language resource portal on administrative terminology in collaboration with the Austrian Federal Ministry of Defence

- semantic search, e.g. Semantic Web Company

- machine translation, e.g. Kaleidoscope, CEF at EU Council Presidency Translator for the Austrian EU presidency in 2018

- language technology in active and assisted learning, e.g. WAALTeR

- general and language-centric AI, e.g. enliteAI

- corpus generation and maintenance, e.g. Austrian Centre for Digital Humanities

Example: WienBot

AI jobs by sector (October 2018)

- Information and communication technologies (32%): including business intelligence, market development, consulting, etc.

- manufacturing (30%): mainly data processor development, pharmaceutics, metal industry

- scientific and technical services (15%)
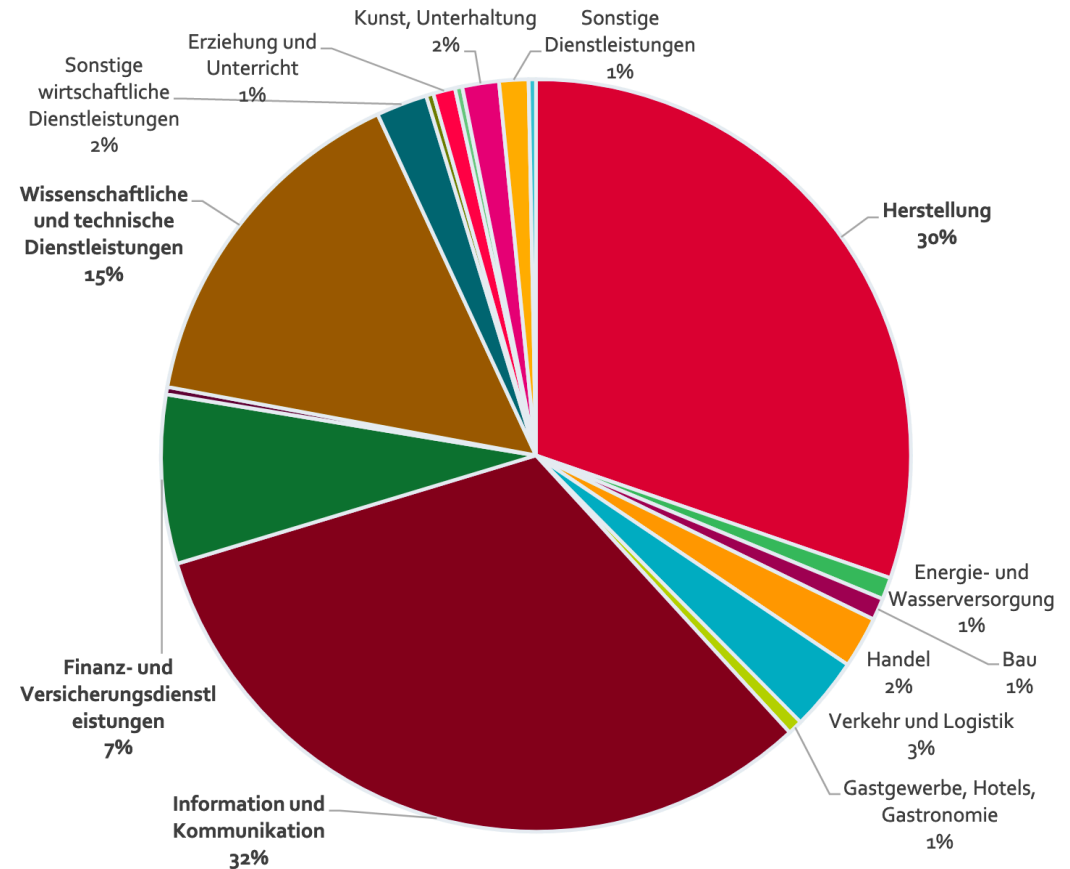
Source: https://www.kmuforschung.ac.at/wp-content/uploads/2019/03/ai_potenzial_oesterreich.pdf

Education programs

- Computational linguistics and language technologies are taught at several
  - Viennese, e.g. Centre for Translation Studies,
  - Carinthian, e.g. Applied University Klagenfurt (Communication Engineer), and
  - Styrian universities, e.g. SPSC Lab TU Graz
- New master program of Centre of Translation Studies, University of Vienna and the University of Applied Sciences FH Campus Wien starting winter 2022:
  - Master program Multilingual Technologies (curriculum already available)
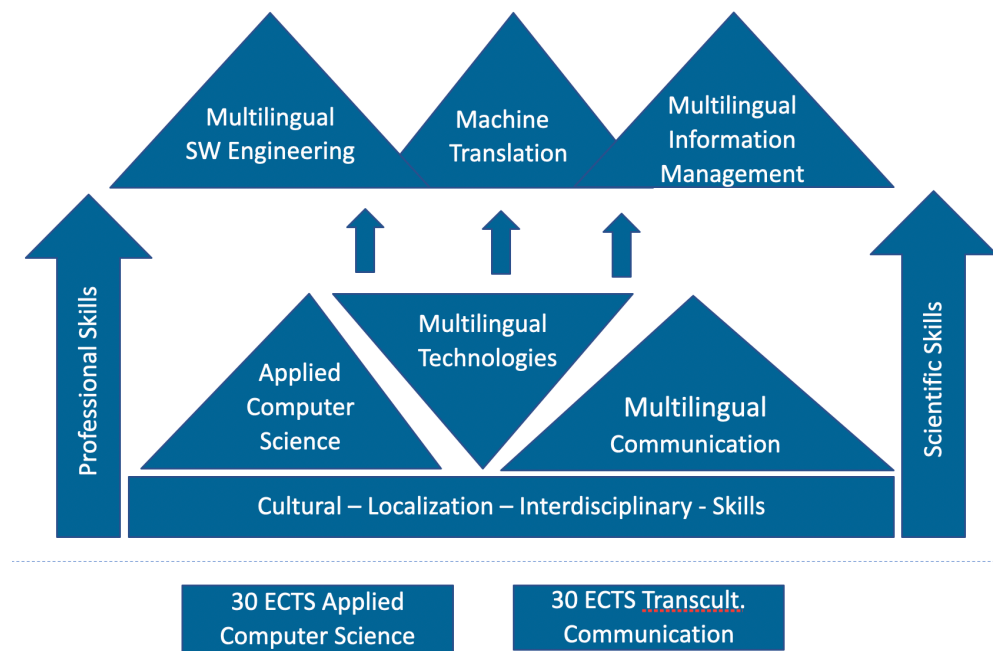
Political Strategies

- Austria is home to the [European Centre for Modern Languages (ECML)](#), located in Graz: national strategies and policies

- [Austrian language competence centre (ÖSZ)](#), located in Graz: new media, learning materials, minority language support, teacher training, etc.

- [Austrian language committee ÖSKO (Österreichisches Sprachenkomitee)](#): strategies for multilingualism and linguistic diversity

- AI Strategy Austria: [Austrian Intelligence Mission Austria 2030 (AIM AT 2030)](#) and the [Austrian Council on Robotics and Artificial Intelligence](#) (ACRAI)

- [Digital Austria](#): focused on digital services

Language Technology Initiatives

- No specific strategy directly geared towards language technology

- AI Strategy Austria: [Austrian Intelligence Mission Austria 2030 (AIM AT 2030)](#)

- [AI in Austria](#): independent think tank

- "Private" initiatives: NLP MeetUp, Deep learning MeetUp

- Research projects:

  - "German in Austria (DiÖ). Variation - Contact - Perception" by University of Vienna has recently been extended to 2023, however, little relation to technology

  - "Cross-layer language models for conversational speech" by Speech Communication Laboratory (SPSC Lab) TU Graz, and conversational AI (start 2019): improve speech recognition of spontaneous speech in Austrian German

  - …

Funding situation in Austria

- From 2012 to 2017: 349,9 Mio. invested into AI
- Federal Ministry for Transport, Innovation and Technology, Federal Ministry for Digital and Economic Affairs: [Artificial Intelligence Mission Austria (2030)](#)
  - High-level: few details available; "systems that understand human language (such as automatic translators)" mentioned as application area
- Federal Ministry for Digital and Economic Affairs:
  - [Digital Austria](#): digital services mostly
- Vienna Science and Technology Fund (WWTF)
  - [Digital Humanism](#) call - human-centered innovation
- Austrian Re-search Promotion Agency (FFG)

Source: https://www.bmk.gv.at/themen/innovation/publikationen/ikt/ai/aimat.html
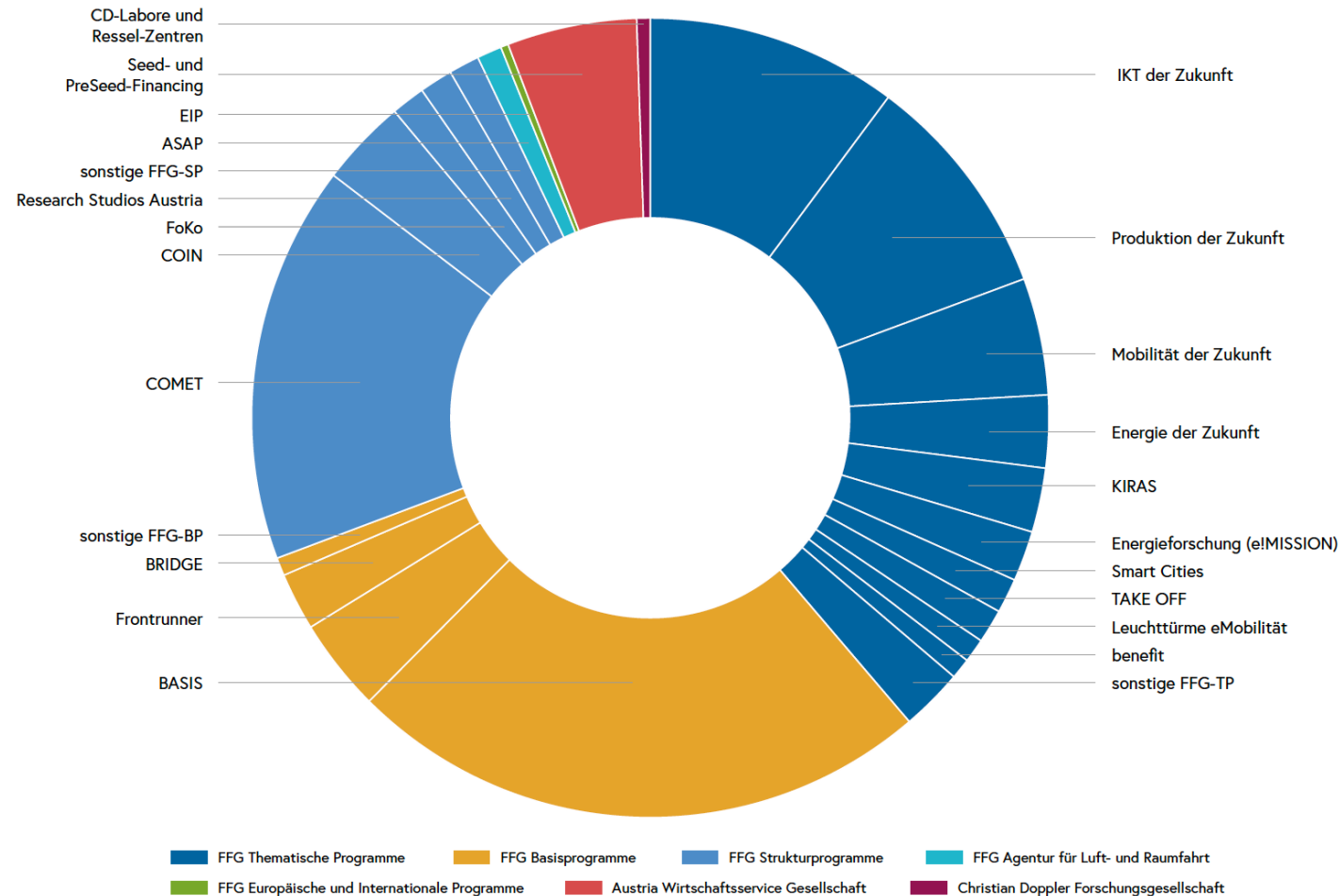
Take-home message

- More digitalization effort needed for Austrian German and linguistic minorities in Austria
- Current AI initiatives only marginally focus on language technology - difficulty of obtaining funding for related projects
- Major change since META-NET whitepaper:
  - Master program on "Multilingual Technologies"
  - More industry activity in language-centric AI
  - More jobs in the field in Austria
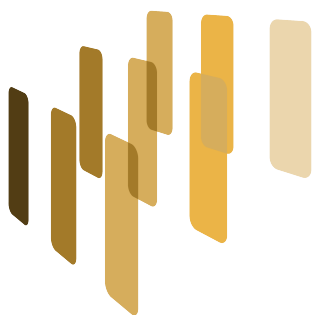
European Language Grid

Thank you!

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23-06-2020 1st Regional ELG Workshop: Switzerland, Austria, Germany –Zürich, Switzerland (virtual workshop)
http://www.european-language-grid.eu