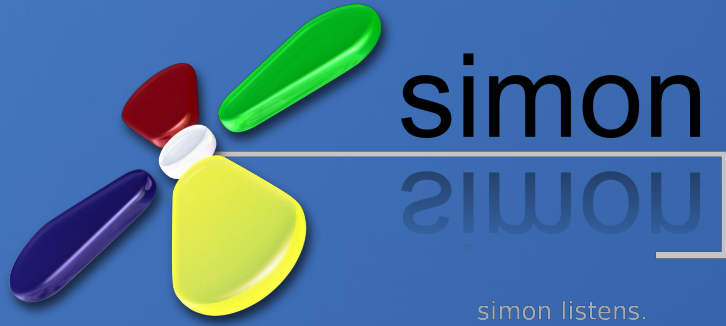


simon

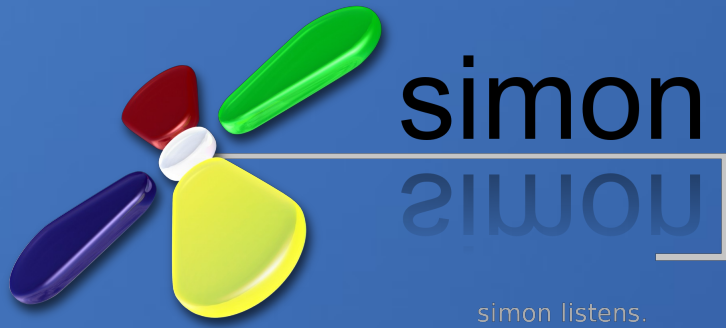
Open-Source Speech Recognition

Developed by the non profit organization Simon Listens
in cooperation with Cyber-Byte IT services



Introducing: David

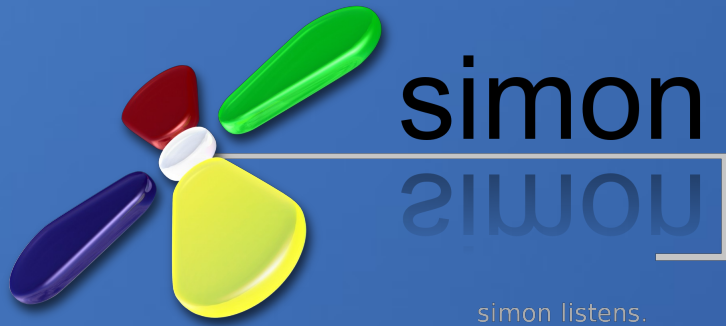
- 17 years old
- Hobbies:
 - Music
 - TV
 - Friends
 - Girls



Introducing: David

- 17 years old
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 - Music
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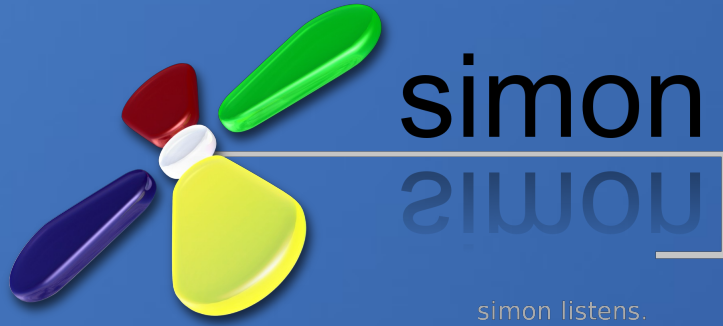




The Challenge

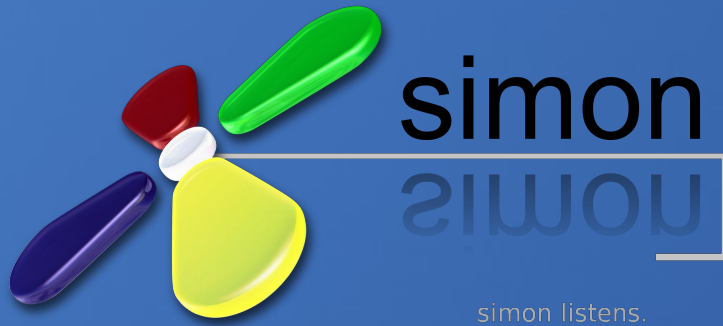
- According to EU: 6.4 % suffer from disabilities affecting their arms and hands
 - $500 \text{ Mio} * 6.4 \% = \sim 32\text{m}$
 - Reference: Finland + Norway + Sweden = $\sim 20\text{m}$
- Same study: 0.4 % suffer from speech impairment
 - $\sim 2\text{m}$

Source: eurostat, [hlth_db_emtyag]



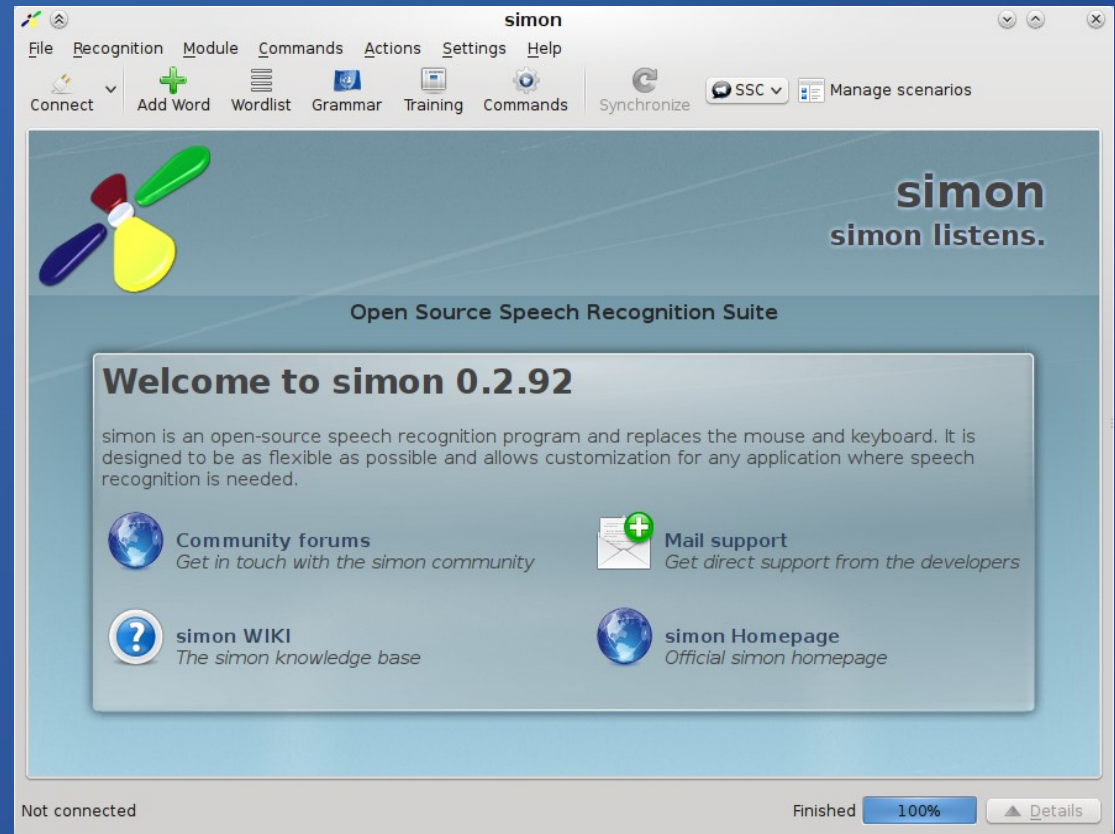
simon: The Idea

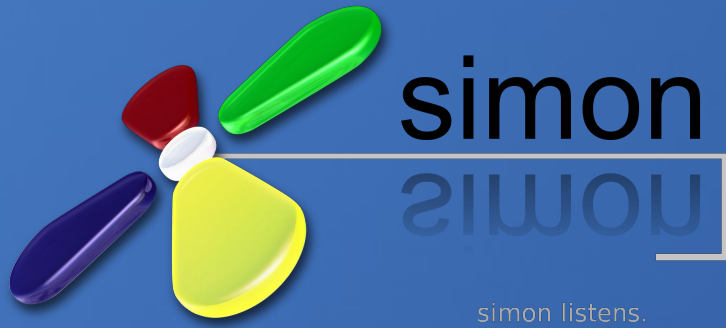
- Speech recognition system
- Extremely flexible
 - Adapts to the user
 - Even speech impairments are no issue
 - Community: Potential
- Free software



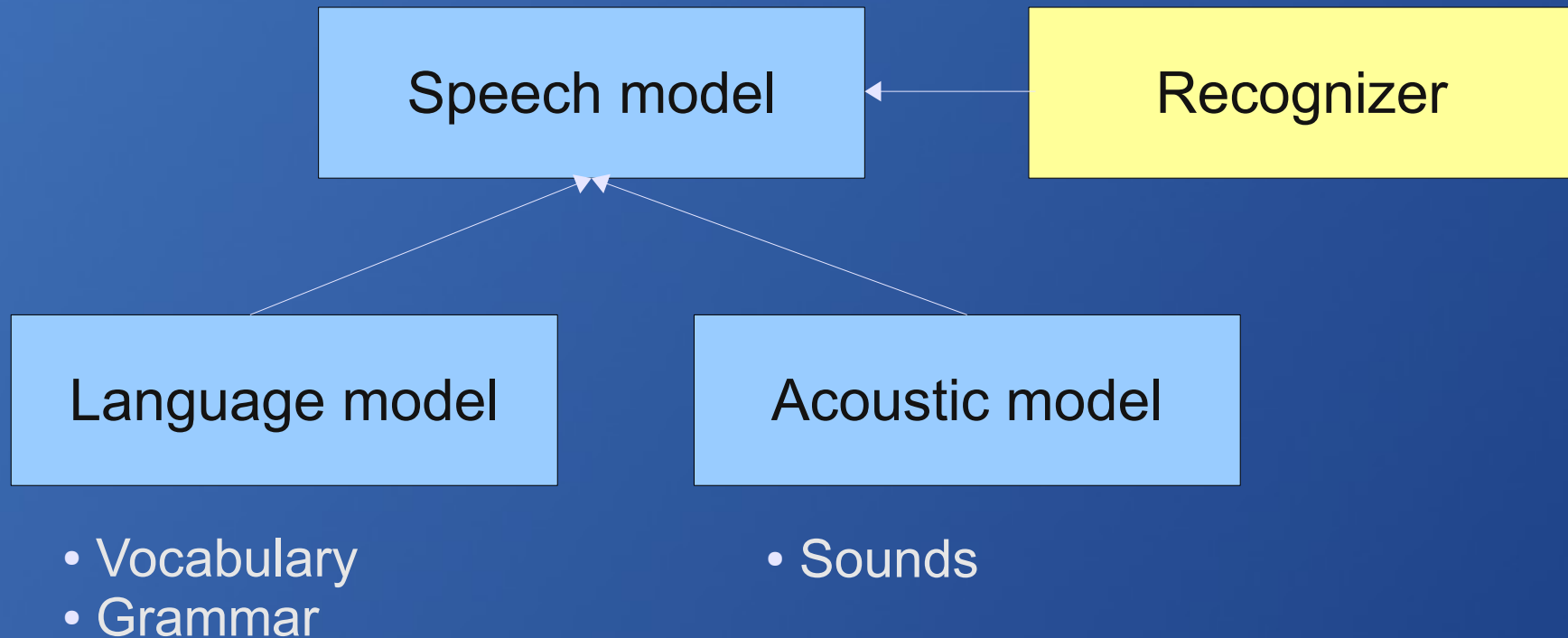
simon: The Implementation

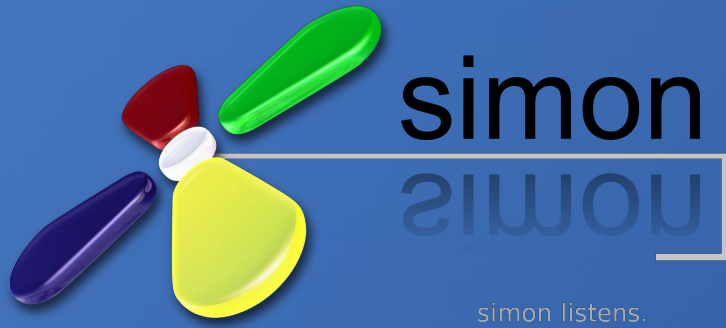
- Based on
 - Julius
 - HTK
 - KDE4
 - C++
- Supports
 - GNU/Linux
 - Windows





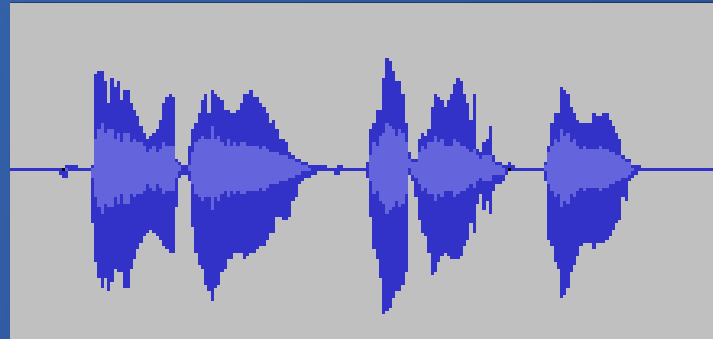
Speech recognition

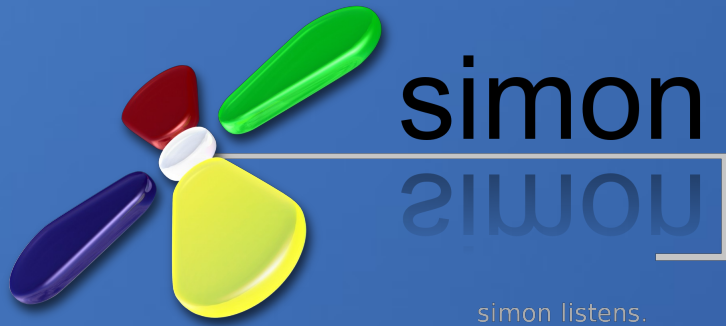




Speech recognition

1. Recording utterance

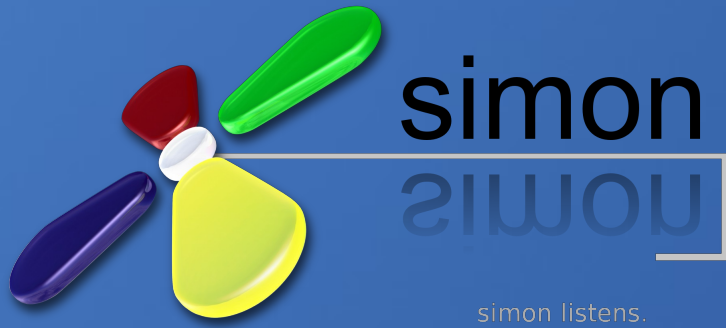




Speech recognition

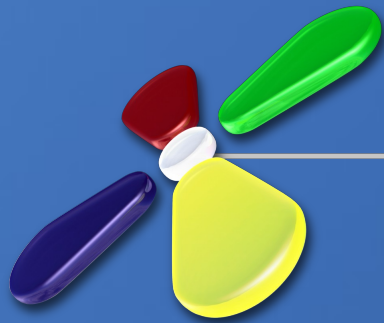
1. Recording utterance
2. Parameterization

```
0.000000e+00 1.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
0.000000e+00 8.128913e-01 1.871087e-01 0.000000e+00 0.000000e+00
0.000000e+00 0.000000e+00 8.558952e-01 1.441049e-01 0.000000e+00
0.000000e+00 0.000000e+00 0.000000e+00 9.268293e-01 7.317071e-02
0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
```



Speech recognition

1. Recording utterance
2. Parameterization
3. Statistic comparison with acoustic model
4. Comparison with vocabulary and grammar
5. Output most probable solution

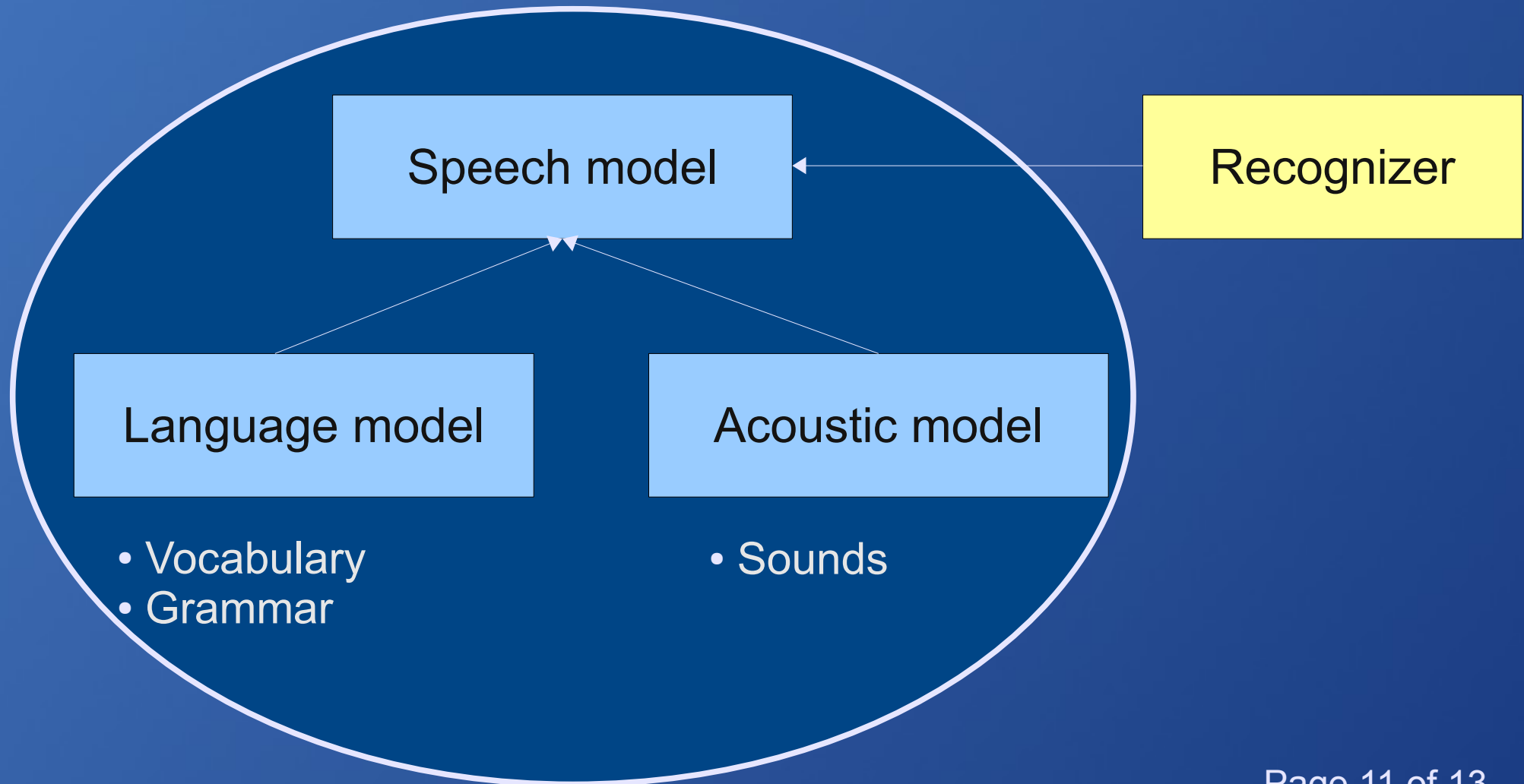


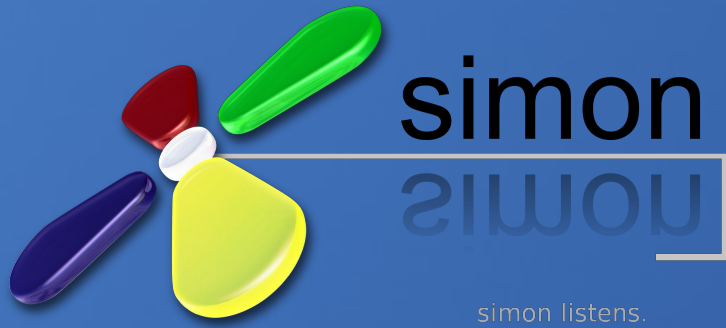
simon

simon

simon listens.

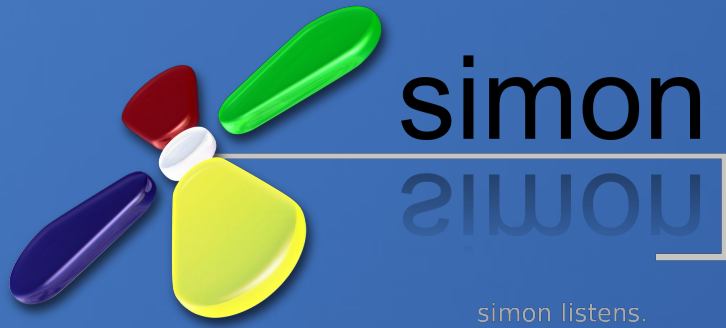
simon: Flexibility





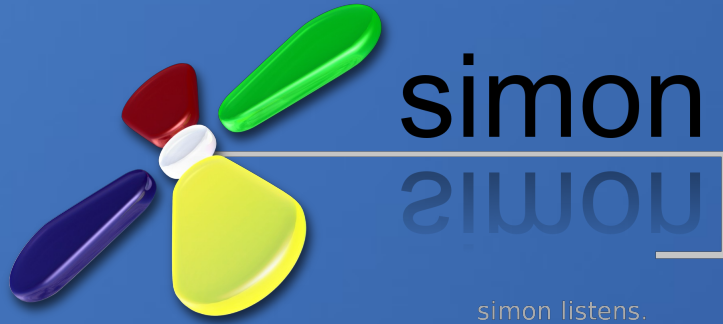
simon: Flexibility

- Language model: Scenarios
 - „Use-case-packages“
 - Vocabulary
 - Grammar
 - Commands
 - Trainings texts
- Acoustic model: Base models
 - Static
 - Adapted



simon 0.3 alpha 3

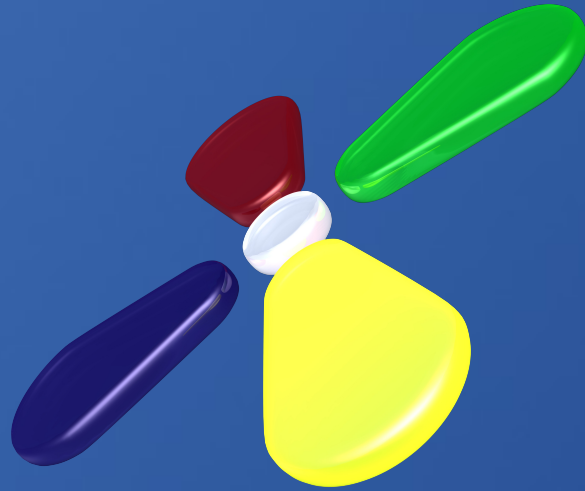
- Demonstration of simon 0.3:
 - Firefox
 - Amarok
 - XBMC



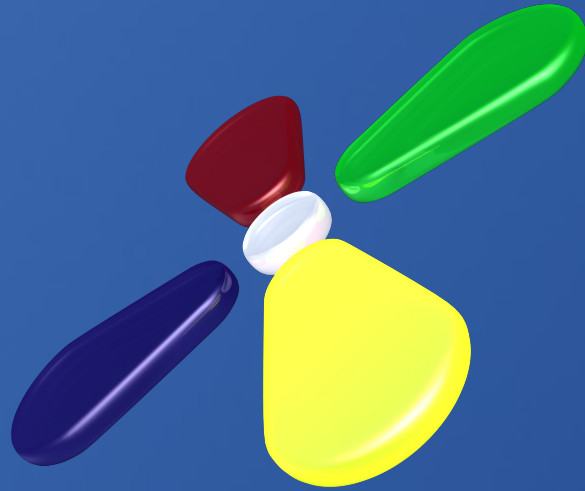
Get involved

- Donate speech: <http://www.voxforge.org>
- Create and share scenarios
- Software development
- Translation and documentation

- Contact: **support@simon-listens.org**
- Me personally: **grasch@simon-listens.org**



Questions?



Thanks!