How TANGO was created

Maria Heckl

1. Key features of an ITN
2. How the idea of TANGO was born
3. How I found the partners
4. Identification of the individual PhD projects
5. Associated partners
6. Application process
7. Tips for proposal preparation
8. Benefits
1. Key features of an ITN

excellent science
coherent large project, linking several PhD tasks
research that is important for Europe (green technologies, skills shortage, ...)

partners from several European countries
academic and industrial partners
full partners and associated partners

research training through hands-on research, specialist workshops, ... complementary training (entrepreneurship, outreach, ...)

gender issues
outreach activities
innovative (Horizon 2020)
2. How the idea of TANGO was born

2008 - 2012 involved in ITN LIMOUSINE
very male dominated:
14 partners - 1 female
20 fellows - 1 female

2010 attended acoustics conference with many sessions
most of them were chaired by men
exception: Gunilla's session
had different atmosphere (friendly, family-like)

idea: build a female-dominated ITN

my expertise: thermo-acoustics
Gunilla's expertise: aero-acoustics
marry the two subjects
3. How I found the partners

head-hunted for women in thermo-acoustics and aero-acoustics
   Susann
   Ines
   Paula

searched for industrial problems
   Jakob
   Wolfgang - Ansaldo
   Joan

brainstorming with Mico
   research topics in thermo-acoustics and aero-acoustics
   partners

Did a lot of "cold-calling" to find industrial partners - unsuccessful
4. Identification of the individual PhD projects

Potential topics: perforated plates with bias and grazing flow
micro-perforated plates
instability warning system
combustion chamber with heat exchanger tubes
modelling industrial gas turbines
flame-vortex interaction (from unsuccessful grant application)

brainstorming sessions with Sujith (November 2011)
several sessions in one week

task 2.1 Experimental study of laminar dump combustor
task 2.2 Analytical study of laminar dump combustor
task 2.3 Experimental study of turbulent swirl combustor
task 2.4 Numerical study of turbulent swirl combustor
task 2.5 Consolidation of experimental, analytical and numerical results for laminar and turbulent combustor (for post-doc)

**brainstorming sessions with Gunilla, Susann, Hans, Ines** (Dec. 2011)
several sessions in one week

task 1.1 Experimental and analytical study of a cold-flow combustor with virtual flame

task 1.2 Numerical study of laminar dump combustor and its cold-flow equivalent

task 3.2 Study of passive control by micro-perforated plates

thermo-acoustics and aero-acoustics got married

**brainstorming sessions with Jakob and Wolfgang** (Sept. and Dec. 2011)

task 3.1 Development of instability warning system

task 3.3 Analytical study of idealised combustion system with heat exchanger

task 3.4 Study of a thermo-acoustic system with heat exchanger in cross-flow
brainstorming session at Ansaldo (Dec. 2011)
task 3.6 Measurement of FTF in industrial gas turbine
task 3.7 Numerical and analytical study of industrial gas turbine

email/telephone discussions with Paula and Joan (Dec. 2011)
task 1.3 Numerical study of perforated plates with grazing and bias flow
task 3.5 Numerical and experimental study of domestic burner with heat exchanger

tasks fall into 3 groups: 3 work packages
5. Associated partners

<table>
<thead>
<tr>
<th>Institution</th>
<th>Country</th>
<th>Role</th>
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<tbody>
<tr>
<td>Catholic University of Leuven</td>
<td>B</td>
<td>Academic supervisor for LMS fellow</td>
</tr>
<tr>
<td>University of Genova</td>
<td>I</td>
<td>Academic supervisor of AE fellow</td>
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<tr>
<td>Sontech AB Microperforate manufacture</td>
<td>S</td>
<td>Host of secondments</td>
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<tr>
<td>Eberspächer Exhaust System Acoustics</td>
<td>D</td>
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<td>Sorama Acoustic Holography</td>
<td>NL</td>
<td>Host of secondments Entrepreneur advisor</td>
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<tr>
<td>Liebherr-Aerospace Toulouse Airconditioning systems</td>
<td>F</td>
<td>Industrial advisor</td>
</tr>
<tr>
<td>Deutsches Museum large science museum in Munich</td>
<td>D</td>
<td>Outreach advisor</td>
</tr>
<tr>
<td>Instituto Superior Técnico Lisbon</td>
<td>P</td>
<td>Collaborator on workshops</td>
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also: 2 senior visiting researchers (Mico, Alan)
6. Application process

30 page application form

4 sections:
1. Research
2. Training
3. Implementation
4. Impact

timeline:
submission: Jan. 2012
notification: May 2012
contract negotiations: May 2012 - July 2012
start date: 1 November 2012
7. Tips for the proposal preparation
Face-to-face discussions and brainstorming sessions are vital.
Visiting potential partners requires time, mobility and funds.
Copy/paste from earlier proposals does not work.
Industrial partners are not easy to find – invite them early.
Be prepared to deal with uncertainties and unexpected events.
Misunderstandings can occur because different disciplines and different countries have different “cultures”.
Academics close to retirement are a good source of information.

8. Benefits
ITNs are a good opportunity to set up and run exciting research projects.
The funding is attractive (~ £60 000 over 3 years to cover training expenses of a PhD student).
ITNs are multidisciplinary and give insights into other areas.
The international aspect is very stimulating.