ALICE-RAP Network Evaluation

Third Wave Survey

(Area 7: Work Package 20)

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Adrià Albareda & Tamyko Ysa

ESADE Business School

Institute for Public Governance and Management

INTRODUCTION

This document presents the results of the third wave ALICE-RAP Network Evaluation Survey, one of the tasks of WP20. The 1st wave survey was conducted between November and December 2011, the 2nd one between June and August 2014, and this 3rd and last wave survey was conducted on November 2015. The survey takes into consideration four dimensions of the complex governance of networks: (1) Network Management; (2) Participation in the network (3) Goals and results; (4) Key future factors.

WP20 aims to keep track of the ALICE-RAP network, assess the work and analyze the synergies and potentialities of the network, through three waves of surveys. More specifically, the objective is to acquire an overview of the factors that influence collaborative work in the project from a management point of view, and their relative impact on outputs and outcomes. In this respect, the four aims of the survey are: (1) To analyze the structure of the network and how it is managed; (2) To map the evolution of the connections among ALICE-RAP participants during the project; (3) To extract the maximum possible number of latent synergies; (4) To find new channels and spaces for cooperation and joint project development.

After providing some general information on the ALICE-RAP participants, the first part of the document presents the survey's quantitative results and the second part is devoted to the Social Network Analysis of ALICE-RAP. Both sections compare the results of this third survey with the first and second wave surveys conducted in 2011 and 2014 respectively. Finally, the document closes with a discussion and draws some general conclusions.

GENERAL INFORMATION

Sample

- Defined universe: 177 participants in the Alice Rap project
- Online survey conducted from November 2 to December 1, 2015
- Responses: 89
- Response rate: 50.28%

Countries represented among respondents

- Australia: 2
- Austria: 1
- Bulgaria: 1
- Canada: 1
- Denmark: 3
- Finland: 5
- France: 1
- Germany: 3
- Hungary: 1
- Ireland: 1
- Israel: 1
- Italy: 8
- Latvia: 1
- Netherlands: 9
- Norway: 3
- Poland: 6
- Portugal: 1
- Romania: 1
- Slovenia: 1
- South Africa: 1
- Spain: 11
- Sweden: 2
- Switzerland: 2
- UK: 17
- USA: 2

Age of respondents

- Minimum: 27
- Maximum: 87
- Average: 51.54

Gender of respondents	Absolute number	Percentage (%)
Female	39	43.8
Male	48	53.9

Education level	Absolute number	Percentage (%)
Undergraduate degree	3	3.37
Master degree	28	31.46
PhD	56	62.92

Type of organization	Absolute number	Percentage (%)
Not-for-profit organizations	16	18
Private organizations	6	6.7
Public organizations	66	74.3

Size of respondent's organizations	Absolute number	Percentage (%)
>1,000	41	46.1
501-1,000	8	9
101-500	16	18
51-100	4	4.5
21-50	9	10.1
6-20	5	5.6
1-5	6	6.7

Brief abstract of responses

Work in ALICE-RAP project	Absolute number	Percentage (%)
Research in WPs	56	63
Research & coordinate areas or WPs	15	16.8
Global Science Group	9	10.1
Manage and coordinate	8	9

Areas Represented	Absolute number	Percentage (%)
Area 1	17	19.1
Area 2	18	20.2
Area 3	7	7.9
Area 4	9	10.1
Area 5	9	10.1
Area 6	8	9
Area 7	10	11.2
Global Science group	9	10.1

Self-definition of Alice-Rap	Absolute number	Percentage (%)
Strategy formulating project	49	55.1
Information project	17	19.1
Action project	12	13.5
Skills development project	8	9

# of partners involved in your Area	Absolute number	Percentage (%)
4 or fewer	26	29.2
From 5 to 9	37	41.6
From 10 to 14	12	13.5
From 15 to 19	1	1.1
20 or more	10	11.2

SURVEY RESULTS

LEADERSHIP

Report who you consider the leaders of ALICE-RAP	Absolute number	Percentage (%)
Peter Anderson	74	83.2
Antoni Gual	5	5.6
Others	10	11.2

Figure 1. Leader's most outstanding skills

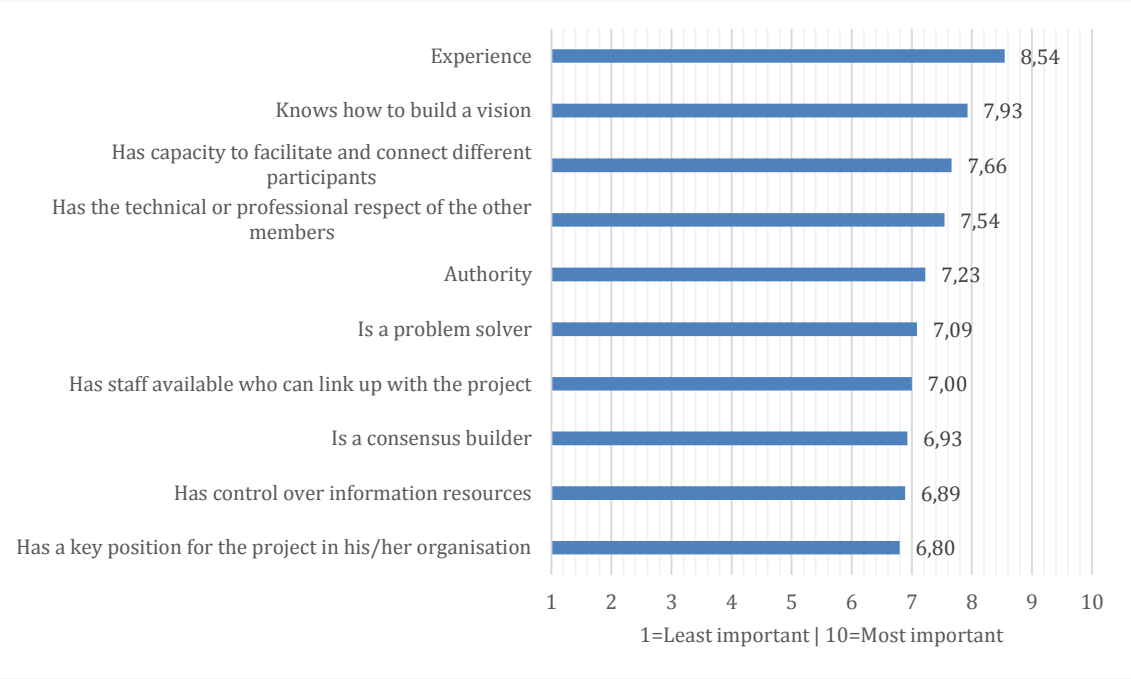
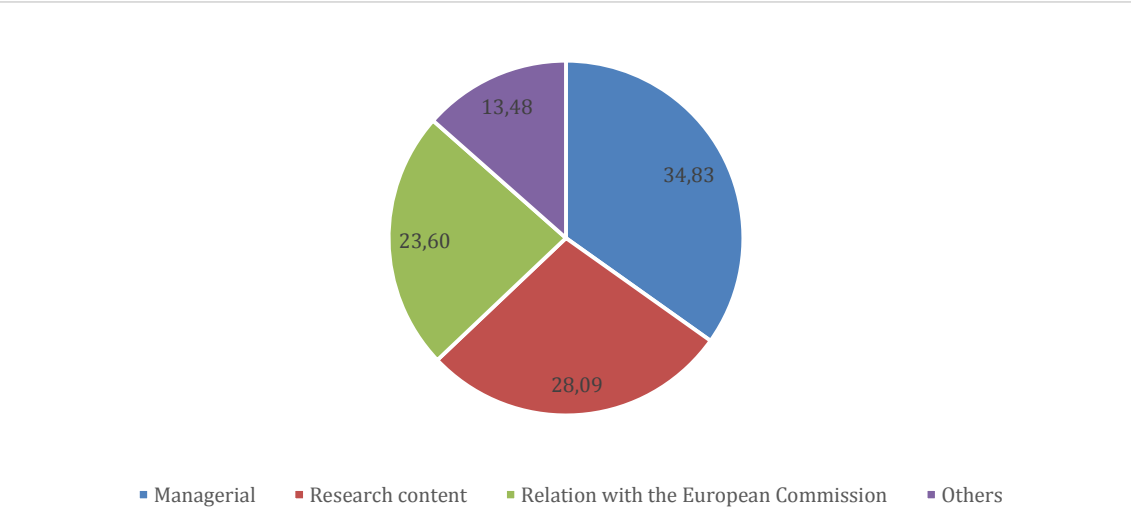
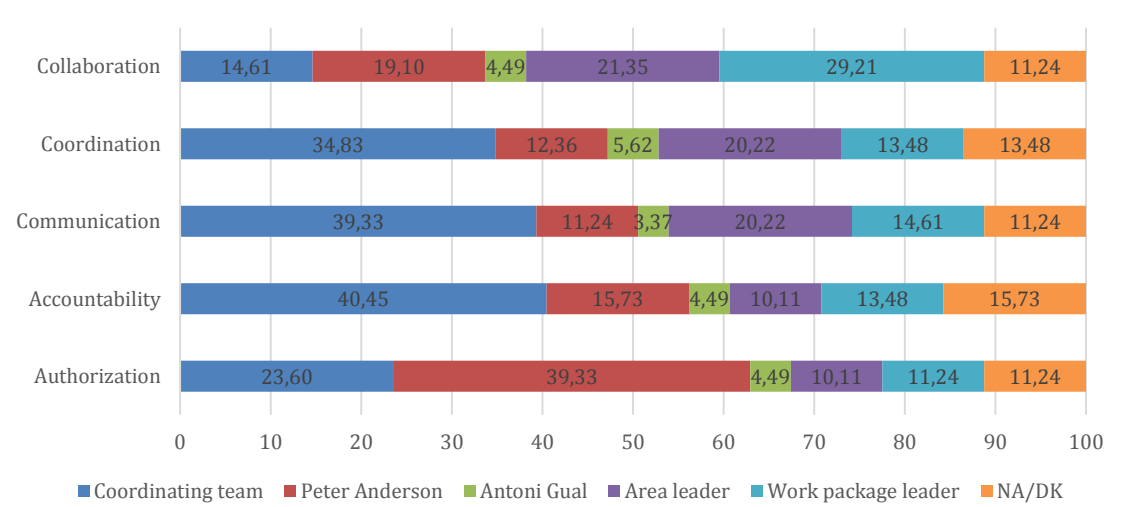


Figure 2. Main tasks of the leader



The person most often cited as leader of ALICE-RAP is Peter Anderson. Nonetheless, 16.8% of the respondents consider other people (either Antoni Gual or Area and Work Package leaders) as the leaders of the project. Regarding the skills of the leader, as in the first and second wave surveys, respondents specially value the experience and the capacity to build a vision.

Figure 3. Distribution of tasks across teams and leaders (%)



As shown in Figure 3, participants of ALICE-RAP normally relate with Peter Anderson so as to obtain authorizations (39.33%). However, respondents refer to the coordinating team when it comes to accountability and communication matters.

ALICE-RAP PROCESS

Figure 4. Regarding the involvement

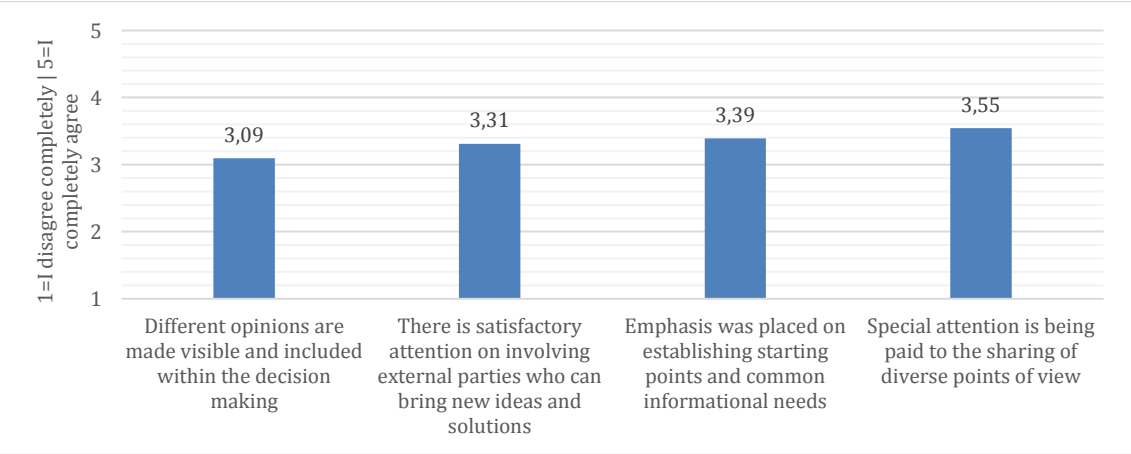


Figure 5. Regarding the management

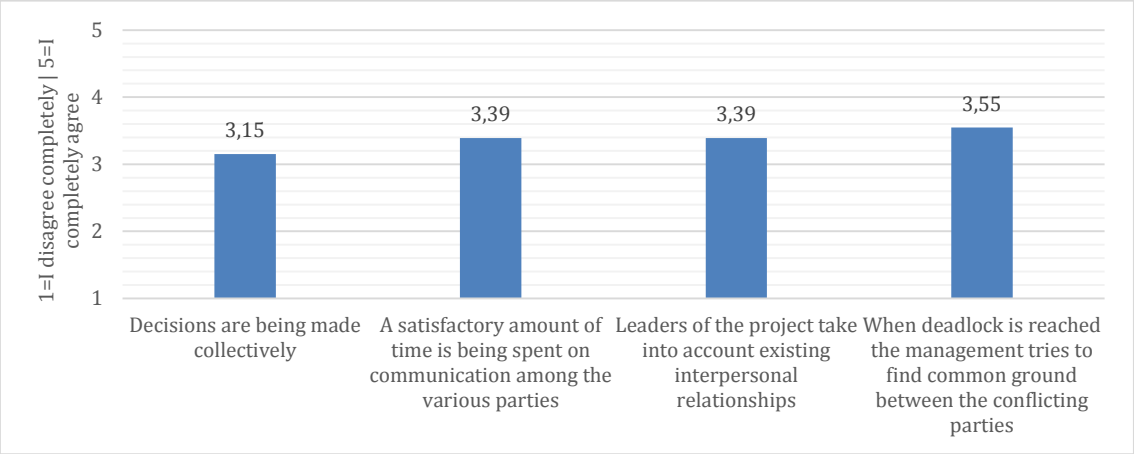
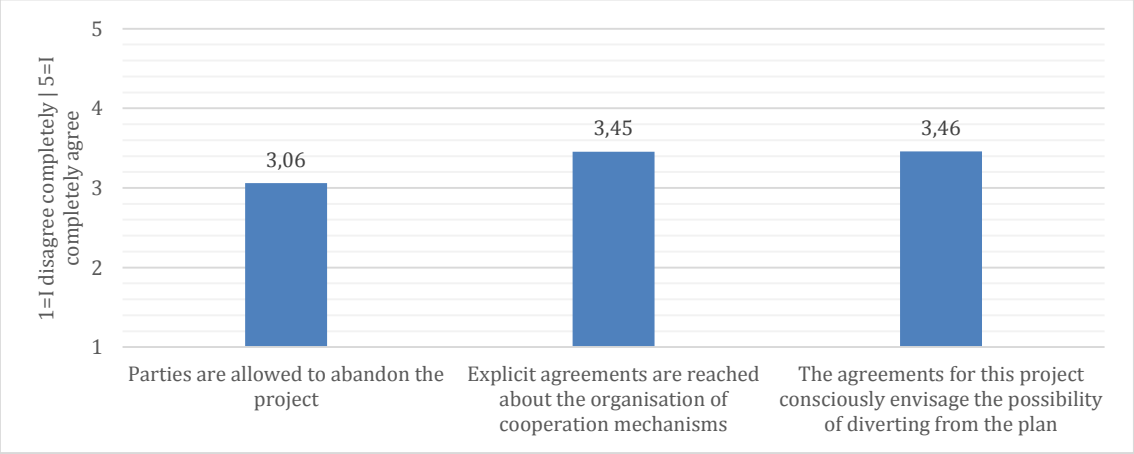


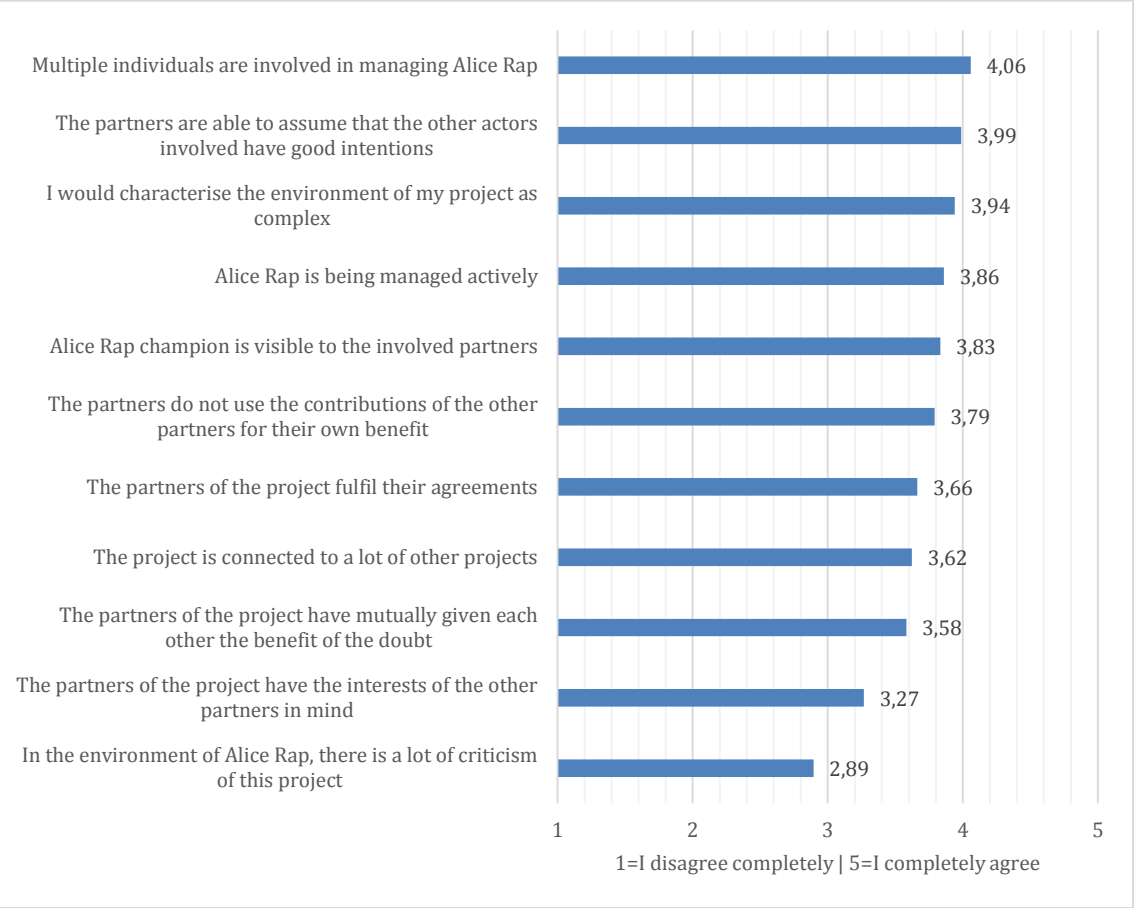
Figure 6. Regarding the ground rules



As presented in figures 4, 5 and 6, the management of the project is taking into account the different dimension of network management. Respondents consider that they are sufficiently involved in the network management and that their opinions and points of view are taken into account. Results in these three dimensions of the management of the project are very similar to the previous surveys, that is, there has been no significant change in the last year of the project.

As in the first and second wave surveys, respondents consider that multiple individuals are involved in managing ALICE-RAP (see Figure 7 below). Moreover, they believe that partners assume that other participants have good intention and that the project is being managed actively.

Figure 7. Interaction between the partners in ALICE-RAP



ALICE-RAP TRUST

Regarding trust, as presented in Figure 8, the levels of trust in general among the parties in ALICE-RAP, and with the parties in each particular area of work have been positive and steady throughout the project. In this last survey, the degree of trust between the various parties involved in ALICE-RAP is 3.6/5, an average only 0.1 points below the 2014 survey. Furthermore, the degree of trust between the various parties involved in the particular area(s) of engagement of the respondent is exactly the same as in the 2014 survey (i.e. 3.9/5). This also confirms the trend by which respondents have higher levels of trust with those people with whom they normally work, in their area of engagement.

Figure 8. Levels of trust in the three wave surveys

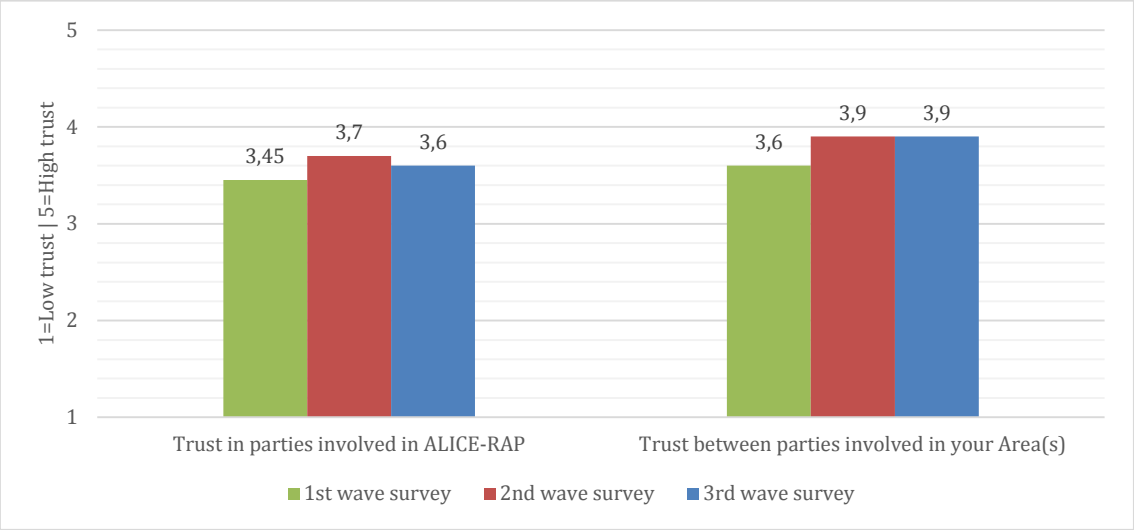


Figure 9. Evolution of the degree of trust in ALICE-RAP (%)

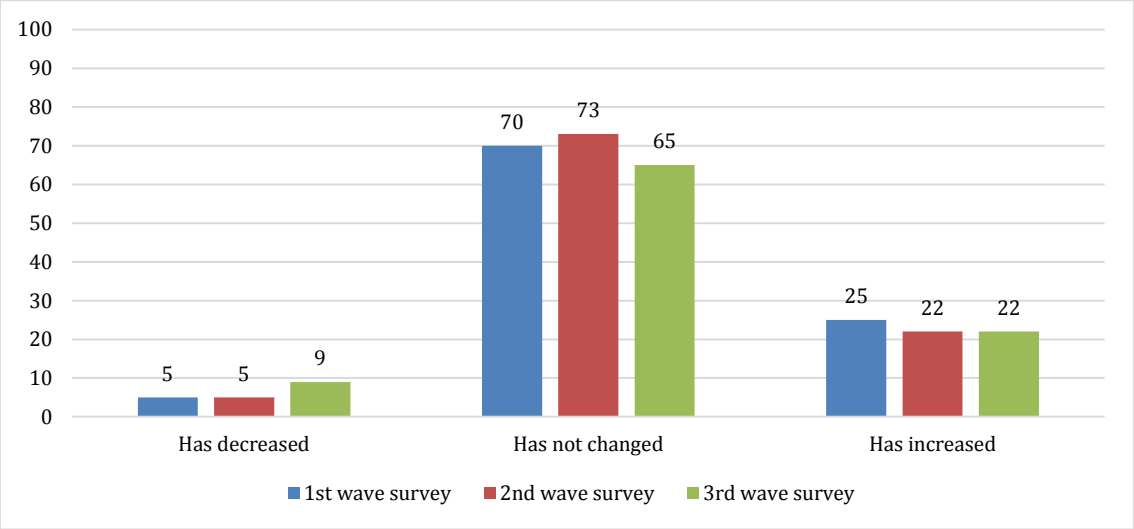
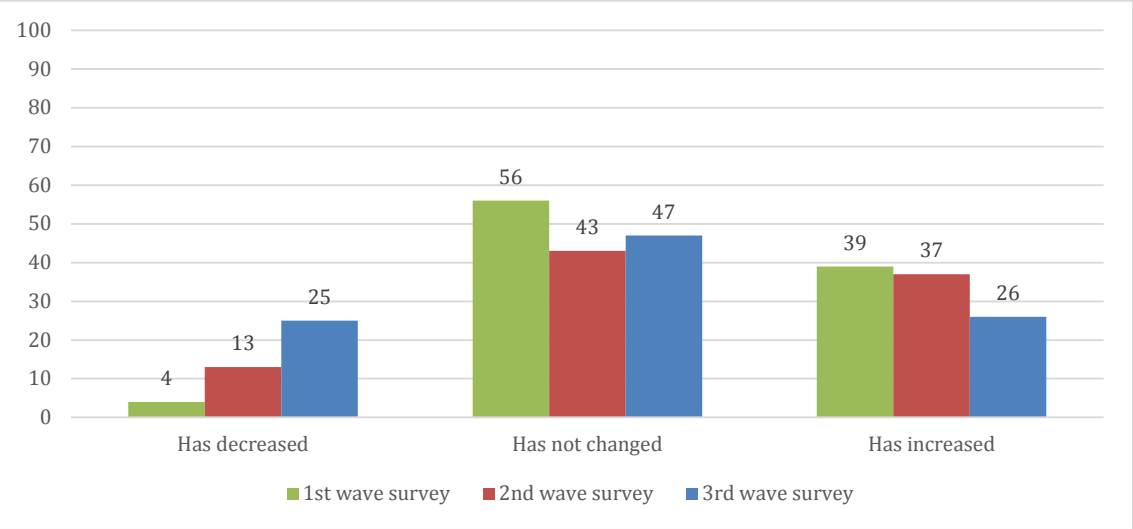


Figure 9 shows the evolution of the degree of trust in ALICE-RAP in general. As seen, the percentage of respondents who declare that their trust in the project has decreased in the last year is 4 percentage points above the second wave survey. Nonetheless, the vast majority of the respondents declare that their trust in the project has increased or not changed in the last year.

Figure 10 presents the level of contribution of the respondents throughout the years. If we compare the three surveys, it is clear that the degree of contribution decreases as the project advances. Thus, the first three columns have an increasing trend, while the last three have a decreasing trend. This trend is logical since, as more and more ALICE-RAP work

is completed, people no longer have formal tasks to carry out and devote less time to the project.

Figure 10. Your contribution to ALICE-RAP (%)



ALICE-RAP PROGRESS OVER TIME AND RESULTS

As presented in Figure 11, the level of satisfaction with ALICE-RAP outputs and outcomes has increased throughout the project. In this vein, the degree of satisfaction with ALICE-RAP outputs has increased from an average of 2.45 out of 5 in 2011 to an average of 3.9 out of 5 in 2015. Similarly, the level of satisfaction with ALICE-RAP outcomes (in terms of social impact) has increased from an average of 2.1 out of 5 in 2011 to an average of 3.5 out of 5 in 2015.

Figure 11. Levels of satisfaction with ALICE-RAP outputs and outcomes

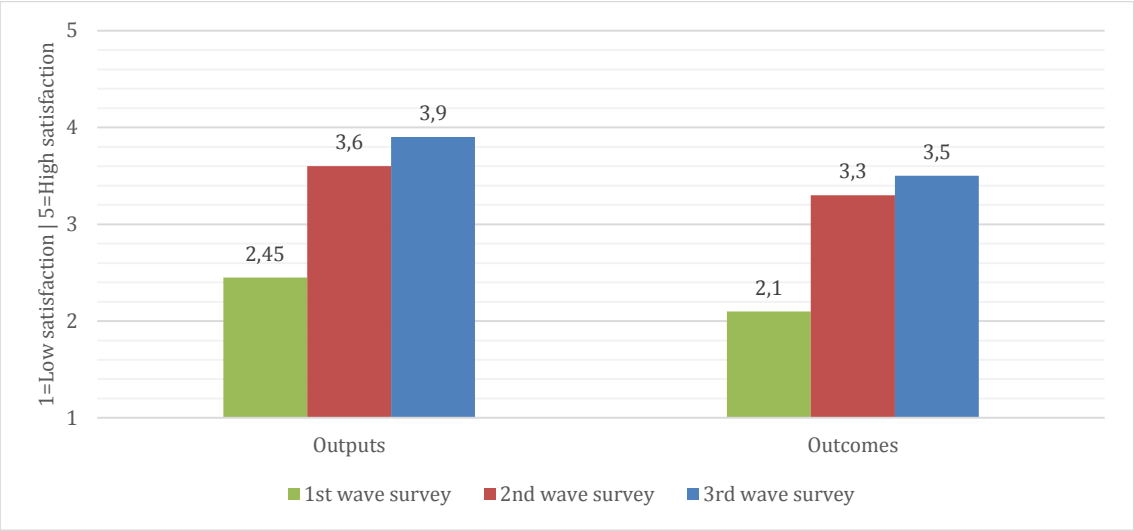
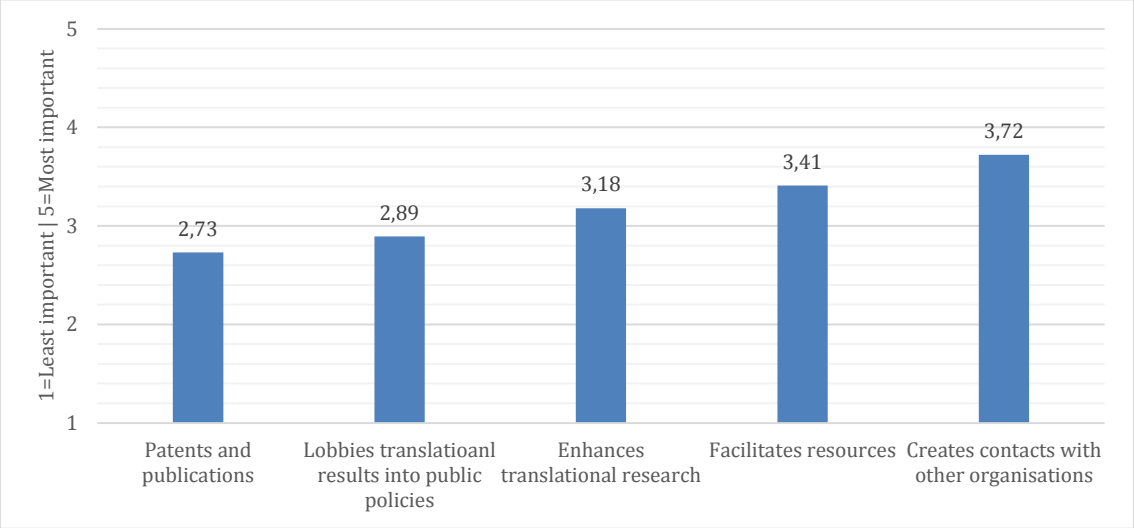


Figure 12. Factors that have had the most influence to participate in ALICE-RAP (organization's perspective)

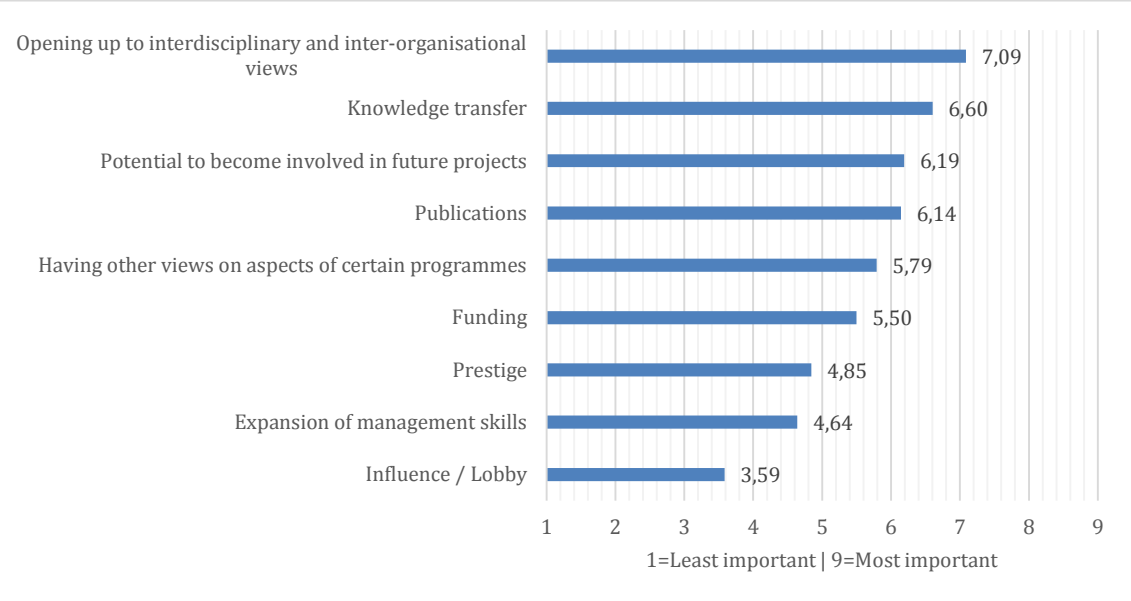


As shown in Figure 12 and in the table below, the factor that has had most influence on each participant organization to participate in ALICE-RAP is the idea that it creates contacts with other organizations. This has been the most important factor to participate in ALICE-RAP according to the three surveys conducted. On a second level, the facilitation of resources and the enhancement of translational research are also regarded as important factors in the last two wave surveys.

Factors that have had the most influence to participate in ALICE-RAP (organization's perspective)	1st wave survey	2nd wave survey	3rd wave survey
Creates contacts with other organizations	1	1	1 =
Facilitates resources	4	2	2 =
Enhances translational research	5	3	3 =
Lobbies translational results into public policies	3	5	4 ↑
Patents and publications	2	4	5 ↓

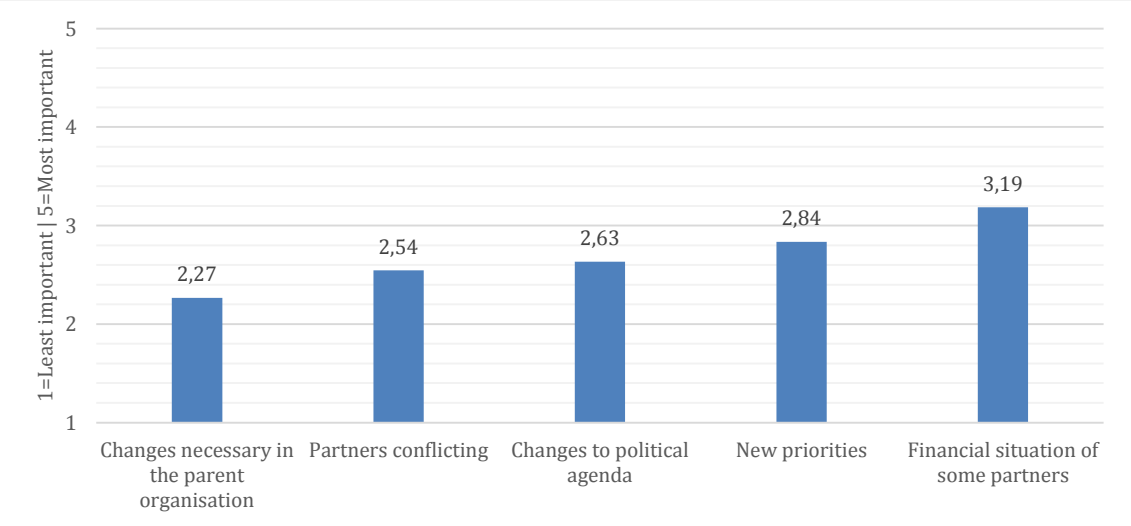
The factors that have had most influence to participate in ALICE-RAP from an individual point of view are also very similar to the previous surveys. In this vein, the most important factor is that ALICE-RAP opens up interdisciplinary and inter-organizational views. On a second level, knowledge transfer and potential to become involved in future projects are regarded as important objectives that influence the participation of individuals in ALICE-RAP.

Figure 13. Factors that have had the most influence to participate in ALICE-RAP (individual perspective)



Factors that have had the most influence to participate in ALICE-RAP (individual perspective)	1st wave survey	3rd wave survey	3rd wave survey
Opening up to interdisciplinary and inter-organizational views	1	1	1 =
Knowledge transfer	3	2	2 =
Potential to become involved in future projects	2	3	3 =
Publications	4	4	4 =
Having other views on aspects of certain program	5	6	5 ↑
Funding	6	5	6 ↓
Prestige	8	7	7 =
Expansion of management skills	7	8	8 =
Influence / Lobby	9	9	9 =

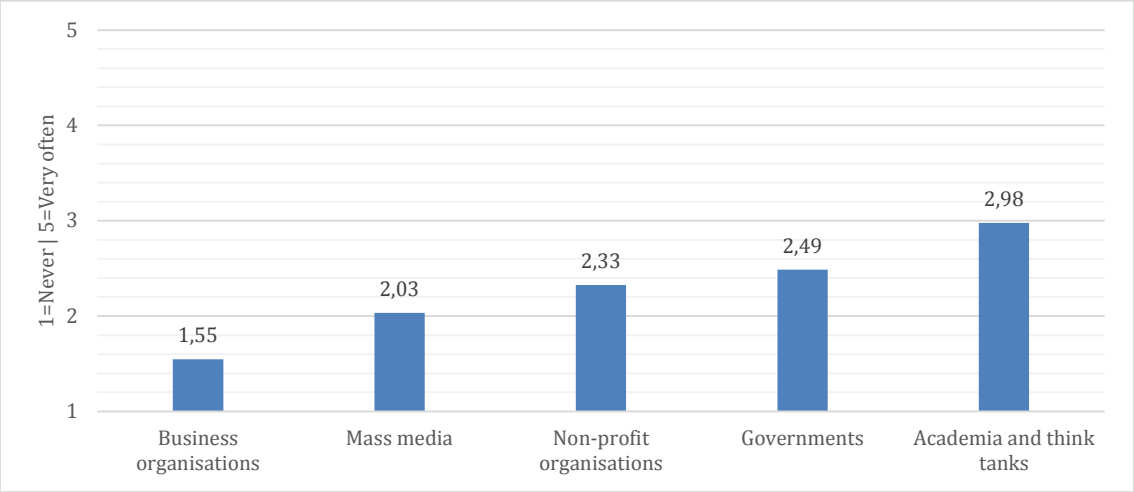
Figure 14. Main obstacles to successfully complete tasks of the project



Main obstacles to successfully complete tasks of the project	1st wave survey	2nd wave survey	3rd wave survey
Financial situation of some partners	1	2	1 ↑
New priorities	2	1	2 ↓
Changes to political agenda	4	4	3 ↑
Partners conflicting	3	3	4 ↓
Changes necessary in the parent organization	5	5	5 =

As in the previous surveys, respondents perceive that the main obstacles to success are: financial situation of some partners and new priorities. Importantly, financial situation of some partners has returned to the first position in this ranking replacing new priorities.

Figure 15. Interaction with the outsider organizations to address ALICE-RAP related issues



Interaction with the outsider organizations to address ALICE-RAP related issues	**2nd wave survey**	**3rd wave survey**
Academia and think tanks	1	1 =
Governments	2	2 =
Non-profit organizations	3	3 =
Mass media	4	4 =
Business organizations	5	5 =

The organizations with whom partners most often interact to address ALICE-RAP issues are academic institutions and think tanks. The order of outsider organizations with whom partners interact has not changed in the last year. In this vein, in the second position we find governments, followed by non-profit organization, mass media and, finally, business organizations, which are the least contacted organizations by ALICE-RAP partners.

SOCIAL NETWORK ANALYSIS

The figure presented in the next page represents ALICE-RAP network. Although 89 people responded to the survey, the number of participants represented in this network (i.e. nodes) is 122. This mismatch is due to the fact that each respondent could refer to 10 individuals. Some of the individuals that have been cited in the network analysis have not responded to the survey.

As can be seen in the graph, ALICE-RAP network is composed of seven Areas which are well connected among them. Whereas the nodes with triangle shape are the leaders of the different work packages, the square nodes are regular participants. Moreover, the black nodes surrounding the central network are members of the Global Science Group (GSG). The white nodes are not formal members of ALICE-RAP.

The size of the nodes represents the number of participants that relates with the individual. The bigger the node, the more central is the participant. As can be seen, at the center of the graph, the leader of the project is the most cited one, and also the one with the highest level of betweenness (for further information on SNA concepts, please see the footnote[1]).

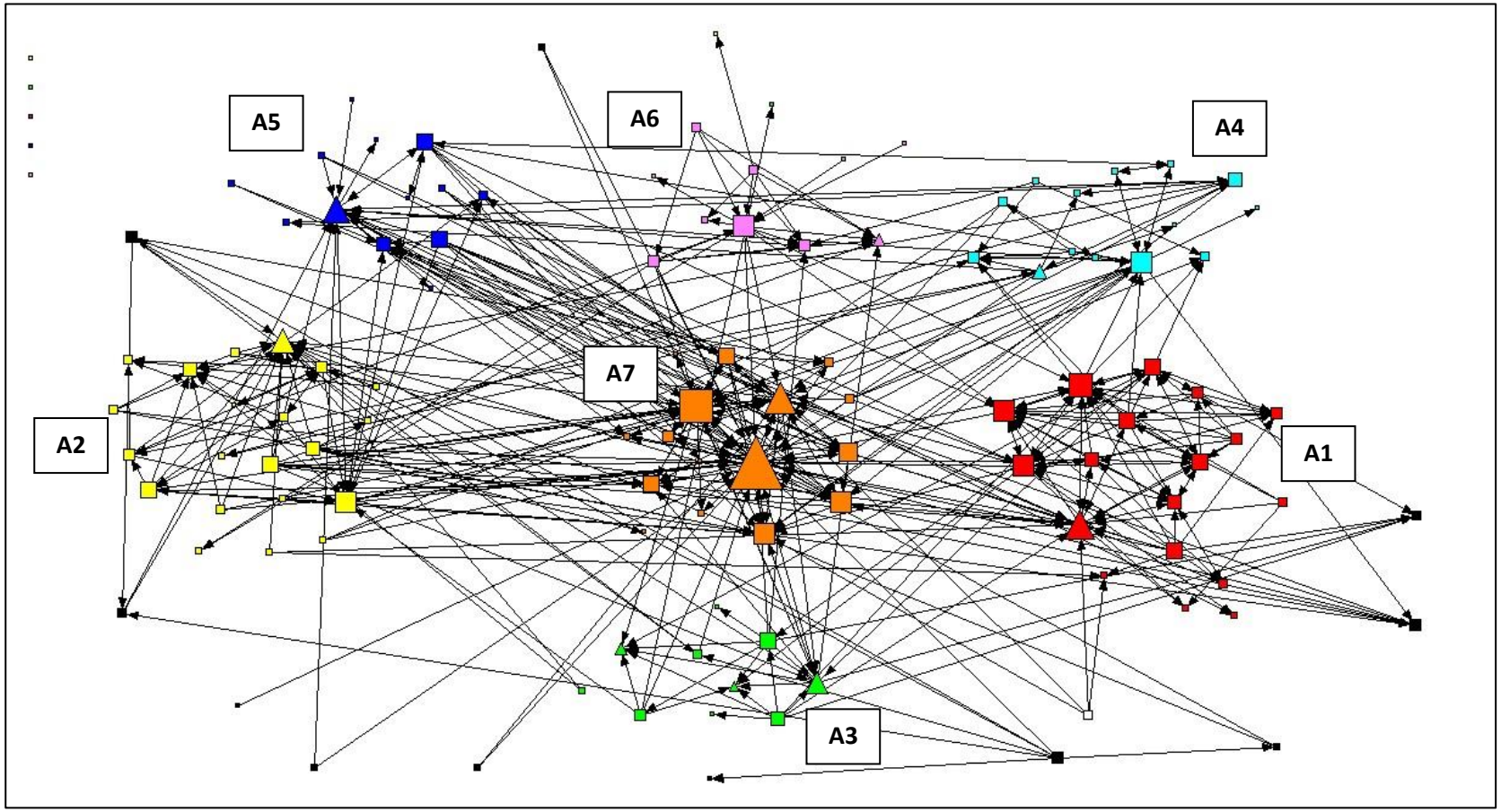
The table below the graph allows us to compare ALICE-RAP network in 2011, 2014 and 2015. First of all, we see how the density of the complete network in this last survey has decreased when comparing it with the 2014 network. However, the network density[2] is higher than in the first wave survey. The decrease from 2.7% to 2.3% might be a consequence of the number of participants who have already finished their tasks and their involvement in the project has decreased. Nonetheless, it is important to highlight that 2.3% of network density is a very high percentage. When distinguishing by the type of

[1] **Centrality degree**: Centrality is a measure of how many connections one node has to other nodes. Degree centrality refers to the number of ties a node has to other nodes. Actors who have more ties may have multiple alternative ways and resources to reach goals—and thus be relatively advantaged.
Closeness is a measure of the degree to which an individual is near all other individuals in a network. It is the inverse of the sum of the shortest distances between each node and every other node in the network. Nearness can also be standardized by norming it against the minimum possible nearness for a graph of the same size and connection.
Betweenness is a measure of the extent to which a node is connected to other nodes that are not connected to each other. It's a measure of the degree to which a node serves as a bridge. This measure can be calculated in absolute value, as well as in terms of a normed percentage of the maximum possible betweenness that an actor or node could have had.

[2] **Network density** describes the portion of maximum possible connections in a network that are actual connections. That is, if all the partners in ALICE-RAP network interact among themselves, then the network density would have been 100%. In a large and international project that works in different areas and work packages, such as ALICE-RAP, the network density of around 2% can be considered as high. Importantly, the survey limited number of nominations to 10, which also impedes having a high network density. Furthermore, in this calculation all the nodes, even those that have not responded to the survey or that are unconnected, have been taken into account. All in all, we can state that the density of ALICE-RAP network is appropriate.

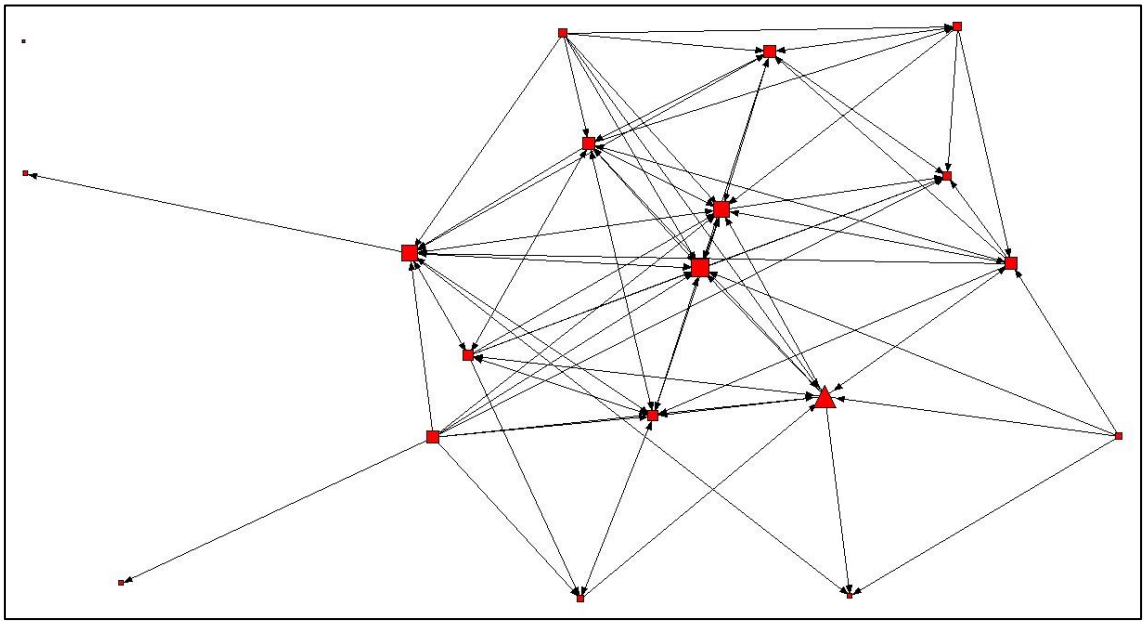
interactions we see that the collaborative network remains the network with higher levels of density. More importantly, the density of this network has increased significantly if we compare it with the previous surveys. This result indicates that participants in ALICE-RAP tend to collaborate with each other rather than communicate or coordinate.

ALICE-RAP NETWORK ANALYSIS



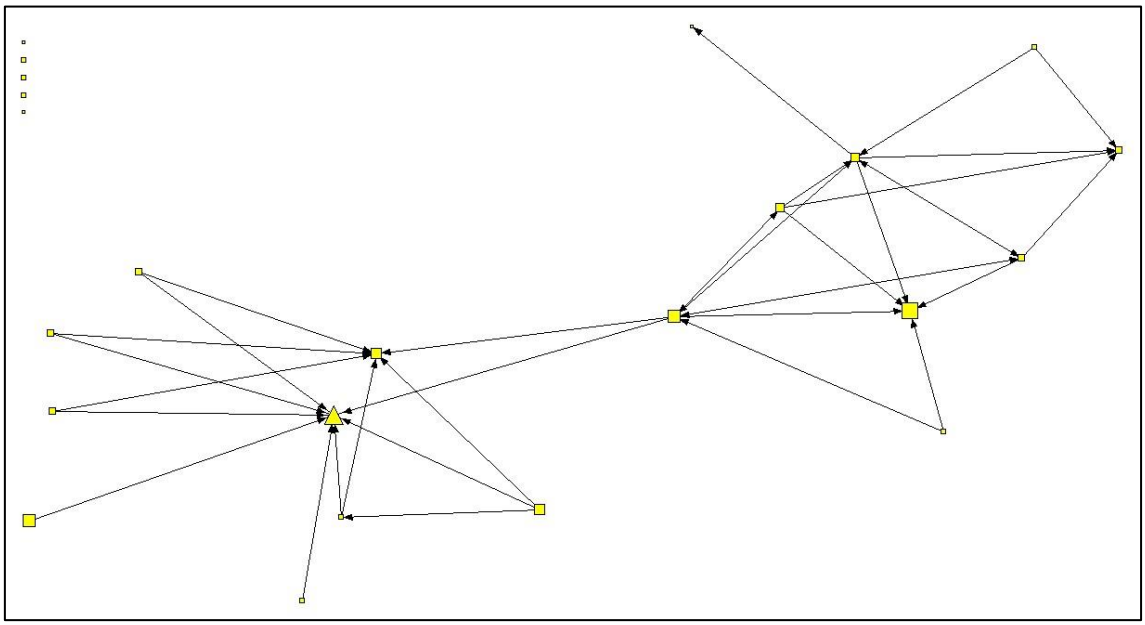
1st wave survey	2nd wave survey	3rd wave survey	3rd wave survey
Density: 2.1%	Density: 2.7%	Density: 2.3%	Nodes: 122
Density – Communication: 0.6%	Density – Communication: 0.6%	Density – Communication: 0.8%	△ Area leader
Density – Coordination: 0.6%	Density – Coordination: 0.6%	Density – Coordination: 0.8%	▢ Participant
Density – Collaboration: 0.9%	Density – Collaboration: 1.4%	Density – Collaboration: 1.9%	
Isolated Participants: 4.2%	Isolated Participants: 2.6%	Isolated Participants: 4.1%	

AREA 1



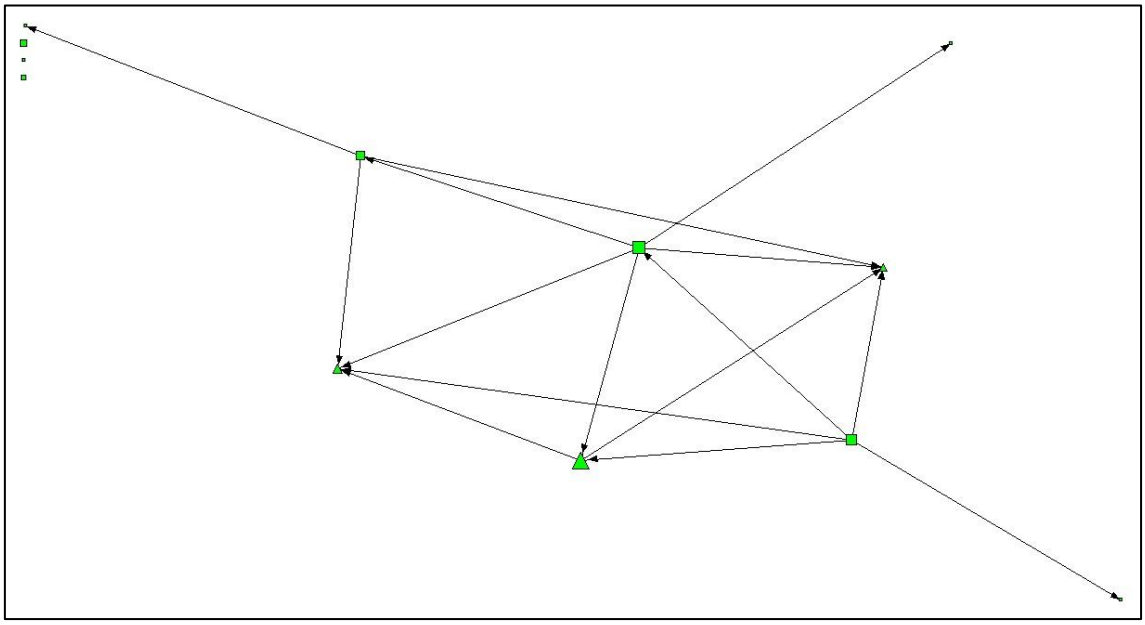
Area 1 is one of the best connected areas of ALICE-RAP. Only one participant is not connected with anybody. As in the second wave survey, the leader of the area (triangle) still has the highest level of centrality degree and betweenness. This means that this person has really worked as a bridge to connect different participants.

AREA 2



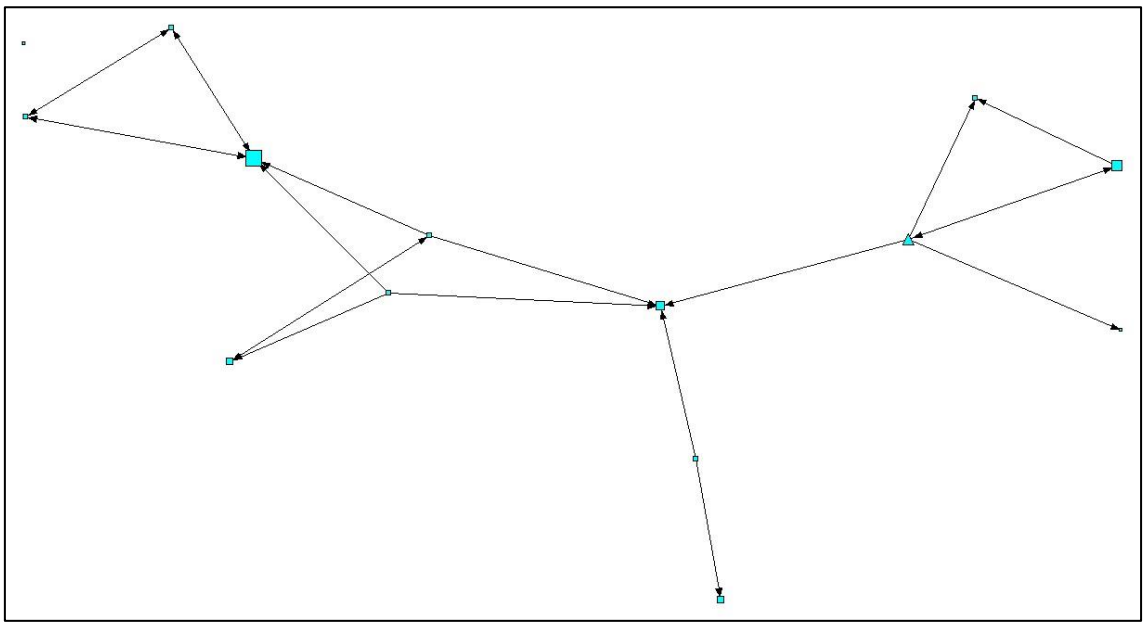
As in the previous survey, the leader of Area 2 is the one with highest levels of centrality degree and betweenness. Importantly, five participants of this area are isolated. Furthermore, this area seems to be split into two different networks, which are only connected by one participant, which means that the area is highly dependent on that participant to keep connected.

AREA 3



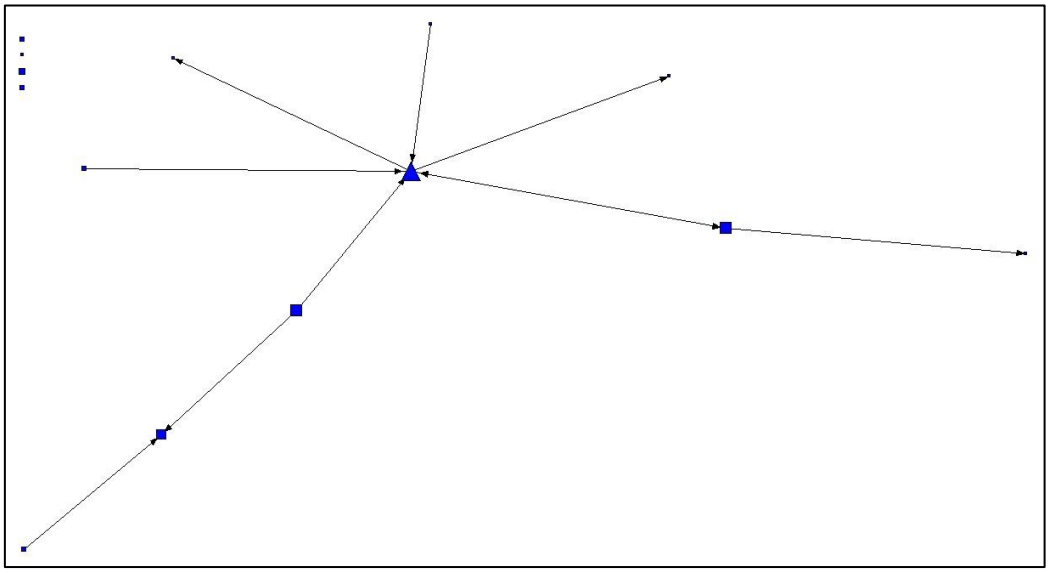
The formal leader of Area 3 has the highest level of centrality degree and betweenness. In addition, there are two more "de facto" leaders who also score high in network centrality measures. It is worth mentioning that only three participants are disconnected from the main network.

AREA 4



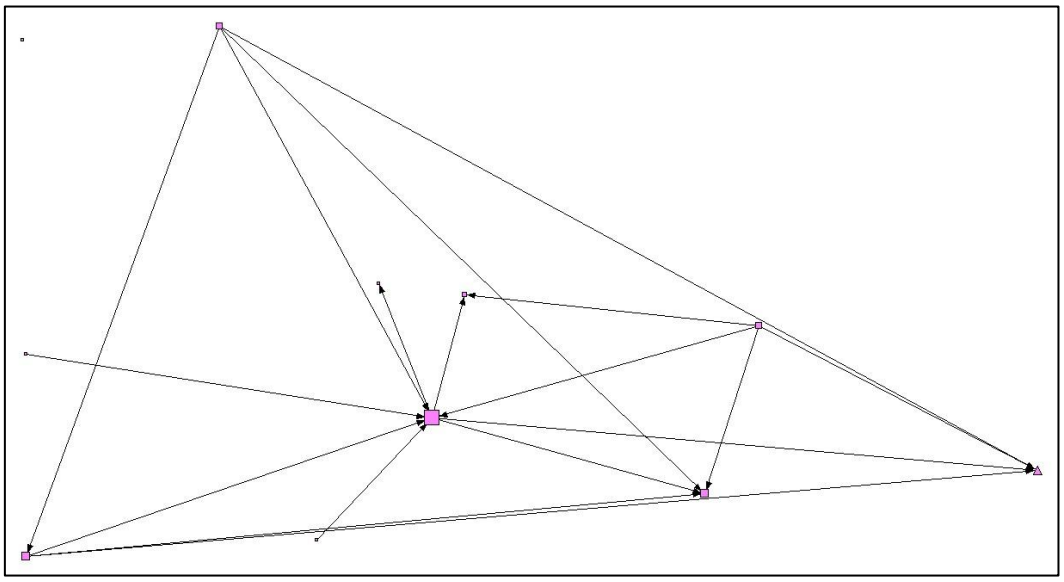
As in the previous survey, Area 4 stands out for being split into two different networks. There is one participant who has higher centrality levels than the leader of the area, which is found in one of the sub-networks within the area. Only one participant of this area is isolated.

AREA 5



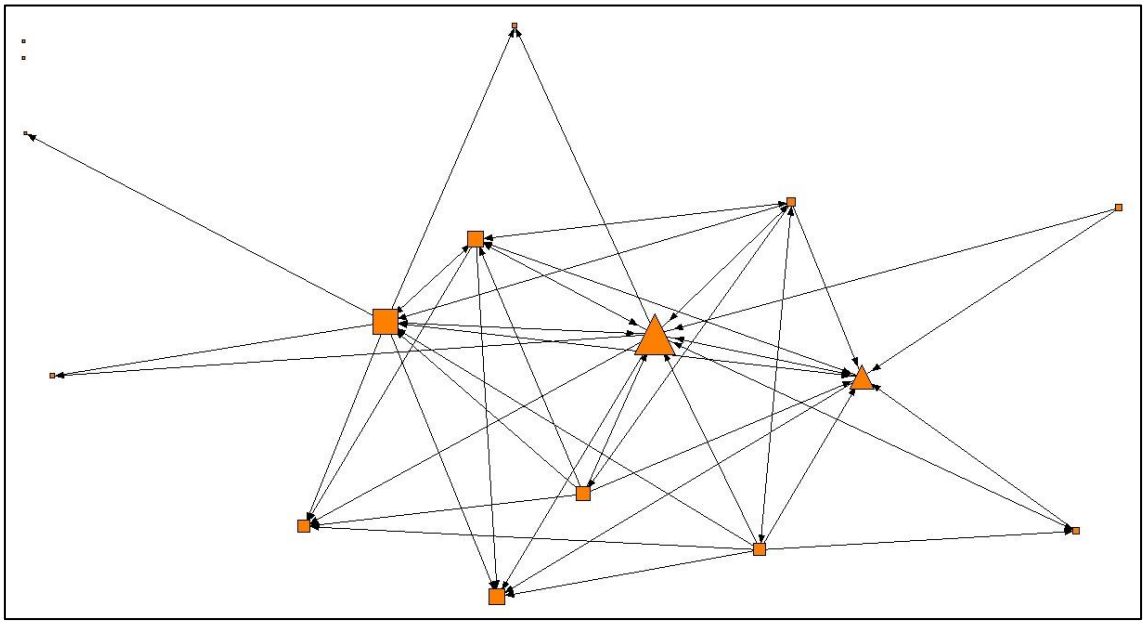
Contrary to previous surveys, Area 5 presents a very weak network with four participants who do not connect with anybody and with low interaction between the members of the area. Moreover, the network relies very much on the leader of the area, without which the network would be completely fragmented. Probably this is so because most of the work that required interaction between WPs within this area has been completed.

AREA 6



Area 6 network has improved significantly if it is compared to the previous surveys. Only one participant is isolated, and there are many interactions between the different participants in the area. However, it is important to highlight that there are four participants with higher centrality and betweenness levels than the leader of the area.

AREA 7



Area 7 presents a high level of density. Most of the ties are reciprocal and, except for two actors, all the participants are well connected. The leadership of the Area is centralized in two different figures being one of them the one with higher levels of centrality and betweenness within Area 7 and within ALICE-RAP network.

Aggregated SNA results by areas

Area	Nodes		Centrality Degree		Betweenness	
	2nd wave	3rd wave	2nd wave	3rd wave	2nd wave	3rd wave
Area 1	24	20	131.374	143.331	25.596	23.648
Area 2	30	23	124.837	100.832	27.186	21.315
Area 3	12	12	50.326	46.667	7.681	11.168
Area 4	21	14	60.786	52.500	19.539	14.830
Area 5	20	14	94.117	51.666	14.537	12.875
Area 6	12	11	49.020	38.333	13.131	16.853
Area 7	18	16	146.405	150.834	54.404	55.758

As presented in the table above, Area 7, as the coordinator of ALICE-RAP project, is the one with higher levels of centrality degree and betweenness. This result, also found in the previous survey, is indispensable in order to coordinate the project and foster collaboration among partners in different areas.

CONCLUSIONS

This technical report presents the main results of the 3rd wave survey conducted in November 2015.[3] The fact that ALICE-RAP is in its last stage and that many participants have already finished their tasks have hindered the response rate if we compare it with the previous surveys. However, 50.28% of the contacted participants have responded to the survey, having sufficient responses to extract valid conclusions for this report.

The most important improvements to be highlighted when comparing with the two previous waves (2011 and 2014) are steady levels of trust and the positive assessment of the results produced by ALICE-RAP thus far. In this vein, after five years of collaboration, the levels of trust in the project and among participants remain high. This paves the way for a fruitful collaboration and might be a foundation stone for future collaborations.

Regarding the results, there is an increasing trend in the evaluation of outputs and outcomes produced by ALICE-RAP. Thus, respondents assess more positively than previous wave surveys the outputs and outcomes that have been produced either individually (within ALICE-RAP framework) or by the project in general.

Regarding the Social Network Analysis, we see that the ALICE-RAP network remains very well connected. However, the decreasing trend in the level of contribution in ALICE-RAP (see Figure 10) as well as a lower response rate, have affected the number of participants involved in each area. A clear example is Area 5, which presented very dense and strong networks in the first and second wave survey; however, the completion of tasks in this particular area has affected the density of Area 5 network. This goes in accordance with the life-cycle of the project. This is also seen in the overall network density, which has decreased if compared to the second wave survey. Nonetheless, it is important to highlight that the density of collaboration network has obtained the highest score in this last survey. Thus, participants in ALICE-RAP go beyond mere communication or coordination of tasks and collaborate so as to pursue the goals of the project. Finally, regarding area leaders, they normally score the highest levels of centrality degree and betweenness, however, in some areas they are not the best connected actors and some other participants worked positively as a bridge to link different actors.

[3] The 1st wave survey was conducted between November and December 2011, whereas the 2nd wave survey was conducted between June and August 2014.