Projet ANR- 10-CHEX-014-01

SHARED: Shape Analysis and Registration of People Using Dynamic Data

Programme Chaire d’Excellence 2010

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Ce document est à remplir par le coordinateur en collaboration avec les partenaires du projet. Il doit être transmis par le coordinateur aux échéances prévues dans les actes attributifs :

1. à l’ANR
2. aux pôles de compétitivité ayant accordé leur label au projet.

L’ensemble des partenaires doit avoir une copie de la version transmise à l’ANR.

Il doit être accompagné d’un résumé public du projet mis à jour, conformément au modèle associé à ce document.

Ce modèle doit être utilisé uniquement pour le(s) compte(s)-rendu(s) intermédiaire(s) défini(s) dans les actes attributifs de financement, hors rapport T0+6 pour lequel il existe un modèle spécifique. Il existe également un modèle spécifique au compte-rendu final.

# Identification (H)

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| --- | --- |
| Acronyme du projet | SHARED |
| Titre du projet | Shape Analysis and Registration of People Using Dynamic Data |
| Coordinateur du projet (société/organisme) | Hyewon SEO  (UMR 7005 LSIIT/Université de Strasbourg) |
| Date de début du projet  Date de fin du projet | 15.12.2010  14.12.2014 |
| Labels et correspondants des pôles de compétitivité  (pôle, nom et courriel du corresp.) | - |
| Site web du projet, le cas échéant | - |

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| Rédacteur de ce rapport | |
| Civilité, prénom, nom | Mme. Hyewon SEO,  Mr. Frederic CORDIER,  Mr. Vasyl MYKHALCHUK,  Mr. Guoliang LUO,  Mr. Frederic LARUE,  Mr. Olivier GENEVAUX. |
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| Courriel | [seo@unistra.fr](mailto:seo@unistra.fr) |
| Date de rédaction | 15.06.2013 |
| Période faisant l’objet du rapport d’activité | 15.09.2012  ~ 15.06.2013 |

# Livrables et jalons (H,V)

Quand le projet en comporte, reproduire ici le tableau des jalons et livrables fourni au début du projet. Mentionner l’ensemble des livrables, y compris les éventuels livrables abandonnés, et ceux non prévus dans la liste initiale.

| **N°** | **Intitulé** | **Nature\*** | **Date de fourniture** | | | **Partenaires** (souligner le responsable) |
| --- | --- | --- | --- | --- | --- | --- |
| Prévue initialement | Replanifiée | Livrée |
| 1 | D2.1 Registration prototype and test results | Logiciel | Dec 2012  (M24) | Sep 2013 | - | Unistra |
| 2 | D2.2 Research results and publications | Document+ données | Juin 2013  (M30) | - | Juin 2013  (M30) | Unistra |
| 3 | D2.3 Multiple dataset registered | Données | Juin 2013  (M30) | - | Juin 2013  (M30) | Unistra |
| 4 | M2: A population of dynamic data successfully processed by the registration | Jalon | Juin 2013  (M30) | Nov 2013  (M34) | - | Unistra |
| 5 | D2.4 Compression solution of 3D animation sequences | Logiciel+ document | - | Mai 2013  (M29) | Mai 2013  (M29) | Unistra |

\* jalon, rapport, logiciel, prototype, données, …

# Rapport d’avancement

## Objectifs initiaux du projet (H)

Maximum 10 à 20 lignes.

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| As clearly stated in our project proposal, the overall objective of SHARED is to develop **a shape analysis and novel registration technique that makes use of dynamic properties of deforming entities**. In particular, the specific objectives that had been planned during the period of T19—T30 have been the following:  1. Development of new **surface registration techniques** that makes use of the time-varying features encoding the deformation behavior of the graphical entities. With the formulation of an optimization problem, we aim at finding spatio-temporal correspondence that minimizes the dissimilarity (error) in surface distance, deformation gradient tensor, etc.  2. Development of **tempo-spatial segmentation** of deforming mesh sequence that automatically computes the temporal and spatial segmentation of the given mesh sequence, so as to maximize the within- segment affinities. We aim at further extending the work towards similarity measure on movement data, (dynamic) shape query, and compression of mesh sequence.  3. Statistical model construction: We mention this objective here just to remind ourselves with the very initial plan of the project, as it has been slightly modified last year when we have decided to reduce the priority on it (Please refer to our previous intermediate report (T18)). We compensate this by putting more priority on the objective 2, which has been newly set last year. |

## Travaux effectués et résultats atteints sur la période concernée (V,G)

Maximum 1 page. Travaux et résultats obtenus pendant la période concernée, conformité de l’avancement des travaux avec le plan initialement prévu. Prévision de travaux pour la (les) prochaine(s) période(s).

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| **Registration of surface data - Static case.** We have modified our landmark transfer algorithm and applied it to a dense correspondence problem. The core idea of the sparse correspondence computation, which we developed last year, has been extended to a more general problem of the dense correspondence. We consider every vertex on a source mesh as a landmark position and compute its matching counterpart on a target mesh by reusing a minimal graph, which consists of a whole set of geometric features. We validated the results of the method by the comparison to the state-of-the-art shape matching methods Mobius Voting and Blended Intrinsic Maps (BIM). Comparison data benchmark included full Tosca set of more than 80 models ([Tosca shape repository](http://tosca.cs.technion.ac.il/book/resources_data.html)). We have measured geodesic errors with respect to ground-truth for each of the methods, and we can report that our method is completely superior to Mobius Voting, comparable to BIM (average error values), and superior to BIM (maximum error values). This work has been accepted for publication in Computers & Graphics journal [1].  **Registration of surface data - Dynamic case.** A new method for a pair-wise registration of deforming mesh sequences is currently in progress. We approach the problem from two sides: as a “spatial” registration (alignment in space embedding only), and as a “spatio-temporal” registration (alignment in space-time embedding). Unlike state-of-the-art works in shape matching, which rely only on geometric features, we can make use of the rich amount of motion information exhibited on the surface, so as to robustly find the correspondence. We have performed experiments using triangle strain (as a characteristic of surface motion) for extraction of dynamic i.e. not geometric feature points. The features were extracted as extreme points of the average/maximum strains in local surface neighbourhoods. However, the result of this feature extraction technique has not shown sufficient inter-subject consistency. Therefore we aim to improve the consistency of extracted features by more advanced approach using time-varying strain vector and tensor fields.  **Temporal segmentation of deforming mesh [2].** We have devised a new method for analyzing a deforming mesh by using the deformation behaviour (stretch and bending) of each mesh triangle. After measuring the distances of triangle deformation between each frame pair, temporal segmentation is performed by finding frame boundaries that minimize within-segment distances. Our experimentation on numerous examples has shown that we can obtain consistent temporal segmentation on different deforming meshes exhibiting identical or similar motions, despite their shape differences.  **Compression of deforming mesh [3].** We have developed a compression method for 3D mesh sequences. We first aggregate similar frames into frame clusters, then apply principal component analysis for each cluster, and finally perform intra-cluster compression based on linear coding. Because the frame poses within a cluster are similar, the number of principal coefficients required for each cluster is reduced, leading to a better compression ratio for a given reconstruction error than other comparable methods.  **Similarities between two deforming meshes.** We have investigated a new method for measuring motion similarity between two deforming meshes, independently from their shape similarities at static frames. Our method proceeds as follows: (1) Compute an initial spatio-temporal segmentation by clustering the triangles that undergo similar deformation and are either temporally or spatially connected. (2) Compute an initial spatial segmentation by cutting the mesh along the boundaries of each spatio-temporal segment. (3) We introduce a spatio-temporal cluster graph that efficiently represents the segmentation results. For each graph, a node denotes a spatial segment and an edge denotes the neighborhood between two spatial segments. In addition, each node also accompanies a vector of attributes, i.e. ‘deformed’ or ‘rigid’ in each frame, so as to encode the deformation of the corresponding spatial segment. (4) Compute the similarity between the two spatio-temporal cluster graphs, by taking into account of the similarities of both graph topology and node attributes. We have computed similarities among deforming meshes that we have for the moment. From the results, we can distinguish different motions, independently from shape differences. In the next stage of our work, we plan to populate our dataset, and ask volunteers to manually rate the similarities among the dataset as ground truth, so as to further validate our motion similarity metric.  [1] Vasyl Mykhalchuk, Frederic Cordier, Hyewon Seo: Landmark Transfer with Minimal Graph, Computers & Graphics (Elsevier), Vol. 37, Issue 5, August 2013, Pages 539–552.  [2] Luo G., Seo H., Cordier F.. Temporal segmentation of deforming mesh. Pacific Graphics Short Papers. The Eurographics Association, 2013. (under review).  [3] Luo, G., Cordier, F. and Seo, H. (2013), Compression of 3D mesh sequences by temporal segmentation. Comp. Anim. Virtual Worlds, 24: 365–375. doi: 10.1002/cav.1522. |

## Difficultés rencontrées et solutions (V,G)

Maximum 10 à 20 lignes. Difficultés éventuelles rencontrées et solutions de remplacement envisagées ex : impasse technique, abandon d’un prestataire, maîtrise des délais, maîtrise des budgets. Faut-il revoir le contenu du projet ? Faut-il revoir le calendrier du projet ?

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| **The lack of dynamic data.** We have found that we are in great need of dynamic, -time-varying geometry data-sets which exhibit semantically same movements. It is an essential ingredient for our on-going development of spatio-temporal registration, spatio-temporal segmentation algorithms, and motion similarity measurement. For the moment we are limited to work with deforming meshes from [Sumner et al.](http://people.csail.mit.edu/sumner/research/deftransfer/data.html), set of synthetic face animations originated from [KAIST](http://www.kaist.edu/edu.html), a few skeleton-based deforming meshes we created by skinning and animation of anthropoid models from [Tosca shape repository](http://tosca.cs.technion.ac.il/book/resources_data.html). However, the quantity and quality of those data-sets are not completely satisfactory for the needs of our project. To overcome this, firstly, we try to engage a 3d modeller to assist in the creation of our custom animated meshes, such as different animal models with the same motion. Secondly, we already have a number of animated face meshes, which we obtained during mocap sessions last year. The only problem is that this data is rather low-resolution and therefore is not quite practical to use. Therefore, we plan to obtain face surface scans of multiple individuals and induce animation of those dense scans from sparse mocap marker trajectories. **Acquisition of ground truth data**. It is of high importance to produce ground truth animations to validate our methods. However,... Hence, we will find examples where static registration methods fail, and will show that our registration is able to find correspondence well by using the motion information. For the validation of our spatio-temporal segmentation work, we will ask volunteers to manually rate the similarity among dataset.  **Dimensionality and exhaustive search**. Registration as any other optimization problem is prone to the curse of dimensionality. The number of degrees of freedom is especially high in the spatio-temporal case, besides which the objective function is highly non-convex and the computational time of the minimization problem explodes. There is no simple solution available, however, we investigate a per segment optimization solution (i.e. constraints on the search space). Each spatio-temporal segment (obtained via our spatio-temporal segmentation algorithm) has relatively small number of DoFs and is aligned independently. Indirectly related step is to drive analytical derivatives of the objective function and therefore get huge improvement in computational time. |

## Faits et résultats marquants (V,G)

En quelques lignes pour chaque fait ou résultat marquant. Cet élément pourrait donner lieu à communication, après accord du coordinateur du projet.

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| As an outcome of our work we already shipped several algorithms and papers.  **Sparse and dense registration of static shapes**. We have developed an efficient and robust algorithm for the landmark transfer on 3D meshes that are approximately isometric. The main advantage of our method over existing approaches is its low computation time. Differently from existing non-rigid registration techniques, our method detects and uses a minimum number of geometric features that are necessary to accurately locate the user-defined landmarks and avoids performing unnecessary full registration. In addition, we adopt histograms of geodesic distance and inverse distance weighting to interpolate the intrinsic distances on the source and the target. This allows us to handle the deviation of isometric deformation. Although we have developed the method for the sparse correspondence problem it is applicable to the dense cases as well. Accepted for publishing in Computers & Graphics journal, with the source code and executable available at [Collage Authoring Environment](https://collage.elsevier.com/collage/multimaster?doi=10.1016/j.cag.2013.04.005&timestamp=20130613054637&digest=0d64dfacba54865446894e2a90442bae).  **Temporal segmentation of deforming mesh.** We have investigated a new method for temporal segmentation of deforming mesh. To the best of our knowledge, our work is the first that proposes temporal segmentation algorithm for deforming meshes. Our experimentation on numerical examples confirms the effectiveness of the presented approach. It further shows that we can obtain consistent temporal segmentation on different deforming meshes exhibiting identical or similar motions, despite their shape differences.  **Compression of 3D mesh sequences by temporal segmentation.** We have developed a compression method for three-dimensional animation sequences that has notable advantages over existing techniques. The key to efficient compression is the aggregation of similar poses into frame clusters, which allows us to reduce the number of principal coefficients required for each frame. Results show that our method can obtain a higher compression ratio for a given reconstruction error than other comparable methods. |

## Travaux spécifiques aux entreprises (le cas échéant)

Entreprise xxx

Maximum 10 à 20 lignes par entreprise. Pour chaque entreprise du consortium, décrire les activités dans le projet, en se concentrant sur les apports, collaborations et perspectives liés au projet. Préciser notamment les perspectives d’application industrielle ou technologique, de potentiel économique et commercial, d’intégration dans l’activité industrielle, etc.

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| Entreprise | Xxx |
| Rédacteur (nom + adresse mél) |  |
| … | |

## Réunions du consortium (projets collaboratifs)

| **Date** | **Lieu** | **Partenaires présents** | **Thème de la réunion** |
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## Commentaires libres (H)

Commentaires du coordinateur (H)

Commentaire général à l’appréciation du coordinateur, sur l’état d’avancement du projet, les interactions entre les différents partenaires…

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| \* General remarks: During the period of 2012-2013, we have published 3 international journal articles (Computer Aided Design, Computers & Graphics, Computer Animation and Virtual Worlds) and have submitted 1 international conference paper (Pacific Graphics). In 2013, we plan to submit at least 1 more article to an international conference (with journal publication). Overall, we believe that we are in good shape and have made progress according to the plan that we set last year, although we are approximately 6 months behind the schedule that have been initially set. In the coming year, we plan to complete objective1 and objective2, with rigorous validation and quality publications.  \* Detail remarks:  The newly added task, tempo-spatial segmentation on mesh sequence, has been a challenging one for us for two reasons: (1) We are the first people working on this subject although there exist a large body of comparable/profitable works in video processing, and (2) the subject is relatively new to the team. Thanks to our immense efforts, however, we start to have some promising results. We plan to further develop our current method and make rigorous experiments in the coming year. In particular, we will focus on the graph-based encoding, and similarity measure of, mesh sequences, which we will demonstrate by measuring motion-similarities on a large number of dynamic dataset. However, such dataset does not exist today, and acquiring it seems a big challenge. The data we are currently using come from various sources (some publically available dataset from previous works on deformation transfer [Sumner et al 2004] and facial expression cloning, some are made by our own, and others we acquired from the motion capture), but are very limited in quantity. Also, the data from motion capture is not fully satisfactory as its spatial sampling is rather sparse. To take up this challenge, we (with stagier students) started to develop methods that combine motion-capture data and mesh data from scan imaging, allowing densely sampled data both temporally and spatially.  The development of new surface registration techniques on dynamic datahas been through several pause-and-resume phases due to the revision of a journal article. The reviewers of Computers & Graphics have requested us to rigorously validate our landmark transfer work on large benchmark data, comparing it with several state-of-the-art works. This required us to process a large dataset, communicate with authors of other papers, and sometimes implement existing methods. In the end, these turned out to be very useful for the completeness of our work, but we somehow spent some considerable amount of time, which was not part of the initial/recent plan. We plan to fully concentrate on this task in the coming year.  We have opened a project website (<http://shared.u-strasbg.fr>), where we make our motion captured data available. We plan to enrich this website with mesh sequences we have generated/tested in our experiments. Thanks to our collaboration with others inside and outside our research team, we are very likely to realize this plan.  Lastly but not least, the principal members of the project team (Hyewon SEO, project responsible, Vasyl MYKHALCHUK, PhD candidate and Guoliang LUO, PhD candidate) plan to commit a 1-month mission at the MIRALab, University of Geneva (invited by Prof. Nadia Magnenat-Thalmann). It is our wish to make this mission fruitful for everyone involved. In particular, it will open a unique opportunity to extend/disseminate our work to medical data, as we will collaborate with MIRALab members who work on a medical project (MultiscaleHuman, EU FP7-PEOPLE). We also expect to establish a long-term scientific collaboration, reinforce our research network, and to nourish the careers of PhD candidates.  [Sumner et al 2004] Robert W. Sumner, Jovan Popovic, Deformation Transfer for Triangle Meshes, ACM Transactions on Graphics, 23(3), August 2004.  [Noh et al 2001] Jun-Yong Noh , Ulrich Neumann, Facial Expression Cloning, 2001. ACM SIGGRAPH 2001: 277-288, 2001. |

Commentaires des autres partenaires

Éventuellement, commentaires libres des autres partenaires

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| … |

Question(s) posée(s) à l’ANR (H)

Éventuellement, question(s) posée(s) à l’ANR…

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| As we had difficulties recruiting PhD candidates with the commence of the project, the overall schedule had been delayed around 6 months. Despite all our efforts to catch up with the initial schedule, we are afraid that the delay of the project is unavoidable. Thus, we would like to ask the authorization of ANR on the prolongation of the project duration till June 2015. |

# Valorisation et impact du projet depuis le début

Cette partie rassemble des éléments cumulés depuis le début du projet qui seront suivis tout au long de son avancée, et repris dans son bilan final.

## Publications et communications (V,G)

Citer les publications résultant du projet en utilisant les normes habituelles du domaine. Si la publication est accessible en ligne, préciser l’adresse. L’ANR encourage, dans le respect des droits des co-auteurs et des éditeurs, à publier les articles résultant des projets qu’elle finance dans l’archive ouverte pluridisciplinaire HAL : <http://hal.archives-ouvertes.fr/>

**Attention** : éviter une inflation artificielle des publications, mentionner uniquement celles qui résultent directement du projet (postérieures à son démarrage, et qui citent le soutien de l’ANR et la référence du projet).

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| **Liste des publications multipartenaires (résultant d’un travail mené en commun)** | | |
| **International** | **Revues à comité de lecture** |  |
| **Ouvrages ou chapitres d’ouvrage** |  |
| **Communications (conférence)** |  |
| **France** | **Revues à comité de lecture** |  |
| **Ouvrages ou chapitres d’ouvrage** |  |
| **Communications (conférence)** |  |
| **Actions de diffusion** | **Articles de vulgarisation** |  |
| **Conférences de vulgarisation** |  |
| **Autres** |  |

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| **Liste des publications monopartenaires (impliquant un seul partenaire)** | | |
| **International** | **Revues à comité de lecture** | 1. Mykhalchuk V., Cordier F., Seo H., Landmark Transfer with Minimal Graph, Computers & Graphics (Elsevier), Vol. 37, issue 5, August 2013, pp. 539-552. 2. Seo H., Kim S., Cordier F., Choi J. and Hong K., Estimating Dynamic Skin Tension Lines in Vivo using 3D Scans, Computer-Aided Design, (Proc. ACM Symposium on Solid and Physical Modeling 2012, October 29-31, Dijon, France), Elsevier. 3. Luo, G., Cordier, F. and Seo, H. (2013), Compression of 3D mesh sequences by temporal segmentation. Comp. Anim. Virtual Worlds, 24: 365–375. doi: 10.1002/cav.1522. |
| **Ouvrages ou chapitres d’ouvrage** |  |
| **Communications (conférence)** | 1. Seo H., Kim S., Cordier F., Choi J. and Hong K., Estimating Dynamic Skin Tension Lines in Vivo using 3D Scans, Computer-Aided Design, (Proc. ACM Symposium on Solid and Physical Modeling 2012, October 29-31, Dijon, France), Elsevier. 2. Luo G., Seo H., Cordier F.. Temporal segmentation of deforming mesh. Pacific Graphics Short Papers. The Eurographics Association, 2013. (under review). |
| **France** | **Revues à comité de lecture** |  |
| **Ouvrages ou chapitres d’ouvrage** |  |
| **Communications (conférence)** |  |
| **Actions de diffusion** | **Articles de vulgarisation** |  |
| **Conférences de vulgarisation** |  |
| **Autres** |  |

## Autres éléments de valorisation (H,V,G)

Les éléments de valorisation sont les retombées autres que les publications. On détaillera notamment :

* brevets nationaux et internationaux, licences, et autres éléments de propriété intellectuelle consécutifs au projet.
* logiciels et tout autre prototype
* actions de normalisation
* lancement de produit ou service, nouveau projet, contrat,…
* le développement d’un nouveau partenariat,
* la création d’une plate-forme à la disposition d’une communauté
* création d’entreprise, essaimage, levées de fonds
* autres (ouverture internationale,..).

Ce tableau détaille les brevets nationaux et internationaux, licences, et autres éléments de valorisation consécutifs au projet, du savoir-faire, des retombées diverses en précisant les partenariats éventuels. Voir en particulier celles annoncées dans l’annexe technique.

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| **Liste des éléments. Préciser les titres, années et commentaires** | |
| **Brevets internationaux obtenus** |  |
| **Brevet internationaux en cours d’obtention** |  |
| **Brevets nationaux obtenus** |  |
| **Brevet nationaux en cours d’obtention** |  |
| **Licences d’exploitation (obtention / cession)** |  |
| **Créations d’entreprises ou essaimage** |  |
| **Nouveaux projets collaboratifs** |  |
| **Colloques scientifiques** | 1. Frederic Cordier, “Compression of 3D mesh sequences by temporal segmentation”, presentation at CASA’13, Istanbul, Turkey, May 2013. 2. Hyewon SEO, "Shape analysis and registration of people using dynamic data", visiting lab seminar, MIRALab, Université de Genève, Suisse, janvier 2013. 3. Hyewon SEO, " Shape analysis and registration of people using dynamic data", presentation at team meeting, IGG, ICube, june 2013. 4. Guoliang LUO, " Tempo-spatial segmentation of mesh sequence", presentation at internal seminar, IGG, ICube, December 2012. 5. Vasyl Mykhalchuk, “Landmark transfer with minimal graph”, presentation at internal seminar, IGG, ICube, November 2012. |
| **Autres (préciser)** |  |

## Pôles de compétitivité (projet labellisés)

Pour les projets labellisés par un ou plusieurs pôles de compétitivité,

Collaboration du projet avec le(s) pôle(s) ayant labellisé

Quelles collaborations y a-t-il eu entre votre projet et le(s) pôle(s) de compétitivité l’ayant labellisé ?

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| … |

Activités financées par le complément de pôle (laboratoires publics uniquement)

Détailler les activités réalisées par les laboratoires publics avec le complément de financement accordé au titre de la labellisation. Préciser notamment les partenaires impliqués et la collaboration menée avec le ou les pôles.

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| **Montant du complément accordé par l’ANR (pour chaque labo public)** | * Partenaire XXX : xxx € * Partenaire YYY : yyy € |

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| **Type d’action menée** | **Détails**  (exemples non limitatifs) | **Dépenses complément de pôle\*** |
| **Actions contribuant à la réflexion stratégique et à la programmation scientifique du pôle** | Ex : Participation aux journées thématiques organisées par le pôle | Xxx : xxy €  Yyy : yyy € |
| **Actions de communication scientifique et publique bénéficiant à la notoriété du pôle** | Ex : colloque de projets | Xxx : xxy €  Yyy : yyy € |
| **Développement de la recherche partenariale (recherche de partenaires, frais de gestion du partenariat, ingénierie de projets,...)** | Ex : accord de consortium, frais de formation à la propriété intellectuelle, à la gestion de projets, dépenses relatives au montage du projet | Xxx : xxy €  Yyy : yyy € |
| **Valorisation de la recherche et transfert vers le monde industriel** | Ex : étude de brevetabilité | Xxx : xxy €  Yyy : yyy € |

\* Estimation des dépenses imputées sur le complément de financement accordé au titre de la labellisation par un pôle de compétitivité, partenaires publics seulement.

## Personnels recrutés en CDD (hors stagiaires)

Ce tableau dresse le bilan du projet en termes de recrutement de personnels non permanents sur CDD ou assimilé. Renseigner une ligne par personne embauchée sur le projet quand l’embauche a été financée partiellement ou en totalité par l’aide de l’ANR et quand la contribution au projet a été d’une durée au moins égale à 3 mois, tous contrats confondus, l’aide de l’ANR pouvant ne représenter qu’une partie de la rémunération de la personne sur la durée de sa participation au projet.

Les stagiaires bénéficiant d’une convention de stage avec un établissement d’enseignement ne doivent pas être mentionnés.

Des données complémentaires sur le devenir professionnel des personnes concernées seront demandées à la fin du projet. Elles pourront faire l’objet d’un suivi jusqu’à 5 ans après la fin du projet.

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| **Identification** | | | | **Avant le recrutement sur le projet** | | | **Recrutement sur le projet** | | | |
| Nom et prénom | Sexe  H/F | Adresse email (1) | Date des dernières nouvelles | Dernier diplôme obtenu au moment du recrutement | Lieu d'études (France, UE, hors UE) | Expérience prof. antérieure (ans) | Partenaire ayant embauché la personne | Poste dans le projet (2) | Date de recrutement | Durée missions (mois) (3) |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

Aide pour le remplissage

**(1) Adresse email**: indiquer une adresse email la plus pérenne possible

**(2) Poste dans le projet** : post-doc, doctorant, ingénieur ou niveau ingénieur, technicien, vacataire, autre (préciser)

**(3) Durée missions** : indiquer en mois la durée totale des missions (y compris celles non financées par l’ANR) effectuées ou prévues sur le projet

Les informations personnelles recueillies feront l’objet d’un traitement de données informatisées pour les seuls besoins de l’étude anonymisée sur le devenir professionnel des personnes recrutées sur les projets ANR. Elles ne feront l’objet d’aucune cession et seront conservées par l'ANR pendant une durée maximale de 5 ans après la fin du projet concerné. Conformément à la loi n° 78-17 du 6 janvier 1978 modifiée, relative à l'Informatique, aux Fichiers et aux Libertés, les personnes concernées disposent d'un droit d'accès, de rectification et de suppression des données personnelles les concernant. Les personnes concernées seront informées directement de ce droit lorsque leurs coordonnées sont renseignées. Elles peuvent exercer ce droit en s'adressant l'ANR (http://www.agence-nationale-recherche.fr/Contact).

## État financier (V)

Donner un état indicatif de la consommation des crédits par les partenaires. Indiquer la conformité par rapport aux prévisions et expliquer les écarts significatifs éventuels.

|  |  |  |
| --- | --- | --- |
| **Nom du partenaire** | **Crédits**  **consommés**  **(en %)** | **Commentaire éventuel** |
| Université de Strasbourg | **44.29 % (97,451.72 €/ 220 000 €)** | Status on 20/03/2013 |
| Université de Strasbourg | **48.99 % (107,784.4 € / 220 000 €)** | Current estimation (to be discussed) |
|  |  |  |

# Annexes (V,G)