

Décision prise dans le cadre de la délégation du conseil d'administration,

LE PRESIDENT,

- Vu** le code de l'Education, notamment ses articles L.712-2, L.712-3, D 719-48 et suivants ;
- Vu** le décret 2011-1169 du 22 septembre 2011 portant création de l'Université de Lorraine ;
- Vu** le procès-verbal de proclamation des résultats de l'élection du président de l'Université de Lorraine en date du 25 mai 2012 ;
- Vu** la délibération du conseil d'administration de l'Université de Lorraine en date du 29 juin 2012 portant délégation au Président,

DECIDE

Article 1

Les tarifs pour les prestations :

1. Bibliographie sur les observateurs adaptatifs en temps discret
2. Validation de l'observateur non linéaire de courant sur des mesures de banc
3. Conception et implémentation d'un observateur adaptatif en temps discret pour l'observation conjointe des paramètres et du courant d'une vanne papillon
4. Rapport technique détaillé sur la conception et l'implémentation d'un observateur adaptatif en temps discret

réalisées par le CRAN au profit de BOSCH Stuttgart sont fixés conformément aux devis en annexes.

Article 2

La présente décision entrera en vigueur à compter de sa publication et de sa transmission au Recteur.

Article 3

Le directeur général des services ainsi que l'Agent comptable de l'Université de Lorraine sont chargés, chacun pour ce qui le concerne, de l'exécution de la présente décision qui sera affichée à la Présidence, dans les locaux du CRAN et publiée sur le site intranet de l'Université.

Fait à Nancy, le 16 juin 2015


Pierre MUTZENHARDT


Price quotation for the service offer

“Literature overview on discrete-time adaptive observers”

Further to our recent discussion and according to the technical description of your request, please, find below our best price quotation.

Project summary: When systems to be observed also vary with its operating conditions, an observer with constant parameters has to achieve a trade off between all the possible states so that it provides a good estimation in every case. A good trade off cannot be anymore attained when the tolerances are too large. An overview on the methods to design adaptive observers including a joint estimation of the parameters and the unknown states is required. As real-time implementation is expected, the literature overview will focus on approaches specifically dedicated to discrete-time models.

Specification of services

1.1. Achievement period

15.04.2015 until 31.05.2015

1.2. Specification and Milestones

- Literature overview about discrete-time adaptive observers for non-linear time varying systems
- Evaluate the advantages and drawbacks of several adaptive observer algorithms and choose an appropriate algorithm for the considered plant structure. Criteria for evaluation: real-time capabilities (needed resources in terms of memory and computing time), precision of the parameter identification and state observer, robustness against parameter uncertainties, sensibility to measurement noise.

Deliverables: Powerpoint Presentation, Report v1

2. Responsibilities, Persons in charge

2.1. Project responsible persons at BOSCH

CR/AEH3 - Wagner, Fleck

2.2. Project responsible persons at the CRAN

Prof. Millérioux, Bloch

Total amount: 6000 Euros (VAT not included)

Nancy, April 2^d 2015

Price quotation for the service offer

“Validation of a current nonlinear observer on test bench measurements ”

Further to our recent discussion and according to the technical description of your request, please, find below our best price quotation.

Project summary: The project concerns the validation of a nonlinear observer in Simulation under realistic conditions (noise, parameter uncertainties, using only available measurements, using a fixed-step solver for the observer, ...).

Specification of services

1.1. Achievement period

16.07.2015 until 31.08.2015

1.2. Specification and Milestones

- Validation in Simulation under realistic conditions (noise, parameter uncertainties, using only available measurements, using a fixed-step solver for the observer, ...).
- Validate the implemented observer with real measurement from the test bench as input. If necessary, fine-tune the observer in order to obtain the best possible results.
- Write step by step calibration instructions for the observer tuning parameters

Deliverables: Powerpoint Presentation, Simulink Model with short documentation

2. Responsibilities, Persons in charge

2.1. Project responsible persons at BOSCH

CR/AEH3 - Wagner, Fleck


2.2. Project responsible persons at the CRAN

Prof. Millérioux, Bloch

Total amount: 6000 Euros (VAT not included)

Nancy, April 2^d 2015

Le Directeur du CRAN



Didier WOLF

Price quotation for the service offer

“Design and implementation of a discrete-time adaptive observer for the joint observation of the plant parameters and the motor current of a throttle valve”

Further to our recent discussion and according to the technical description of your request, please, find below our best price quotation.

Project summary: The project concerns the design of an adaptive observer for the current of a throttle valve. Manufacturing tolerances and environmental and aging influences make the parameters of a throttle valve vary. Consequently, the system to be observed also varies with its operating conditions. An observer with constant parameters has to achieve a trade off between all the possible states of the throttle valve so that it provides a good estimation of the current in every case. A good trade off cannot be anymore attained when the tolerances and influences on the throttle valve are too large. The project is therefore dealing with the design of an adaptive observer including a joined estimation of the parameters and the unknown states of the throttle valve to give an optimal accuracy within the whole life of the throttle valve. Another benefit of this approach is that the parameters of the observer do not need to be calibrated which permits to save time and money. As the physical modelling of a throttle valve involves frictions effects, and spring nonlinearities, it makes the design of such an observer quite challenging.

Specification of services

1.1. Achievement period

01.06.2015 until 15.07.2015

1.2. Specification and Milestones

- Design a discrete-time adaptive observer for the specific problem of the joint observation of the plant parameters and the motor current of a throttle valve.
- Implement the observer with respect to the Bosch specifications in Matlab Simulink.

Deliverables: Powerpoint Presentation, Simulink Model with short documentation

2. Responsibilities, Persons in charge

2.1. Project responsible persons at BOSCH

CR/AEH3 - Wagner, Fleck


2.2. Project responsible persons at the CRAN

Prof. Millérioux, Bloch

Total amount: 6000 Euros (VAT not included)

Nancy, April 2^d 2015

Le Directeur du CRAN


Didier WOLF

Price quotation for the service offer

“Detailed technical report on the design and implementation of a discrete-time adaptive observer”

Further to our recent discussion and according to the technical description of your request, please, find below our best price quotation.

Project summary: The project consists of a detailed report on the design and implementation of a discrete-time adaptive observers for non-linear time varying systems and its application to the current observer of a throttle valve.

Specification of services

1.1. Achievement period

01.09.2015 until 15.10.2015

1.2. Specification and Milestones

Full technical report concerning the work on the design and implementation of a discrete-time adaptive observers for non-linear time varying systems and its application to the current observer of a throttle valve.

Deliverables: Full report

2. Responsibilities, Persons in charge

2.1. Project responsible persons at BOSCH

CR/AEH3 - Wagner, Fleck

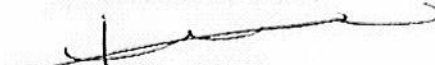
2.2. Project responsible persons at the CRAN

Prof. Millérioux, Bloch

Total amount: 2000 Euros (VAT not included)

Nancy, April 2^d 2015

Le Directeur du CRAN


Didier WOLF