

VISVESVARAYA INDUSTRIAL & TECHNOLOGICAL MUSEUM

(National Council of Science Museums)

Ministry of Culture, Govt. of India,

Kasturba Road, Bangalore - 560 001

Ph: 080-22864009, 22864114

Email: vitmuseum@qmail.com, Website: www.vismuseum.gov.in

E-TENDER DOCUMENT

FOR SUPPLY OF IMMERSIVE 3D/4D MOVIE FOR 3D THEATRE AT VISVESVARAYA
INDUSTRIAL & TECHNOLOGICAL MUSEUM, BANGALORE & REGIONAL SCIENCE
CENTRE & PLANETARIUM, CALICUT / 2022-23

VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM KASTURBA ROD, BANGALORE – 560 001

TENDER NO. VITM/51/2(4)P/3D/4D MOVIE/VITM/RSC(C)/2022-23

Instructions for Online Bid Submission

- 1. The bidders are required to submit softcopies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.
- 2. More information useful for submitting online bids on the CPP Portal may be obtained at:

https://eprocure.gov.in/eprocure/app

REGISTRATION:

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: https://eprocure.gov.in/eprocure/app) by clicking on the link "Online bidder Enrollment" on the CPP Portal which is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique user name and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.
- 5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- 6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS:

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc., There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc., to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want

to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS:

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.,) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS:

- 1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter detail of the instrument.
- 4) Bidder should the EMD as per the instructions specified in the tender document. The original should be posted / couriered / given in person to be Tender Processing Section, latest by the last date of bid submission. The detail of the DD / any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- 5) A standard Price Schedule format (BOQ) has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the white colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.
- 6) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 7) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption

- using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 8) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 9) Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 10) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

Assistance to bidders:

- 1. Any enquiries relating to the tender document and the terms and conditions contained therein should be addressed on the tender inviting authority for a tender or the relevant contact person indicated in the tender.
- 2. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24 x 7 CPP Portal helpdesk. The contact number for the helpdesk is 18002337315

VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM KASTURBA ROD, BANGALORE – 560 001

NOTICE INVITING E-TENDER

TENDER NO. VITM/51/2(4)P/3D/4D MOVIE/VITM/RSC(C)/2022-23

On-line Digitally signed e-tenders are invited in two Bids System from the manufacturers or their authorized registered Indian agents for supply of 3D/4D movie for 3D theatre at Visvesvaraya industrial and technological museum at Bangalore & Regional Science Centre & Planetarium, Calicut. Only reputed and established firms/ authorized registered Indian agents having proven experience and capability to supply the movie in India at site smoothly may download the tender documents from the Central Public Procurement Portal (CPPP): http://eprocure.gov.in/eprocure/app or from the Museum's website www.vismuseum.gov.in as per the following schedule:-

Published Date	17.02.2023
Bid Document Download Start Date	17.02.2023
Bid Document Download End Date	09.03.2023
Bid Submission Start Date	17.02.2023
Bid Submission End Date	09.03.2023
Technical (Techno-Commercial) Bid Opening Date	10.03.2023
Estimated cost of the work	Rs. 24,00,000.00
Earnest Money	Rs. 60,000.00
	(Rupees Sixty Thousand Only)

The online bid along with the Earnest Money Deposit in the form of scanned copy of the Demand Draft should be uploaded by the due date and time as per the above schedule. No tender will be accepted without requisite EMD. The original EMD in the form of Demand Draft / Pay Order shall be submitted by the bidder to this office either before or at the time of tender opening. The online bids will be opened on the scheduled date and time prescribed above. Bidders may be present during opening of tenders, if so desire. Off-line tenders shall not be accepted and no request in this regard will be entertained whatsoever.

VITM reserves the right to accept or reject any or all tenders in full or part without assigning any reason whatsoever. VITM shall also not be bound to accept merely the lowest tender but the technical suitability, capability and superiority as well as after sales service including infrastructure to render such service etc., shall be of prime consideration for selection of the material.

General Information and Instructions

- 1. The instruction given herein will be strictly binding on the tenderers and deviation, if any will make the tender or tenders liable to be considered invalid. <u>Tenders incorporating additional conditions by the tenderer are liable for rejection</u>.
- 2. Bids shall be submitted online only at CPPP website: https://eprocure.gov.in/eprocure/app Manual bids shall not be accepted.
- 3. The instruction given in "Annexure-A" for "Instruction for Online Bid Submission" should be strictly followed during submission of the Bid.
- 4. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 5. Bid should be submitted along with the Earnest Money of Rs. 60,000.00 (Rupees Sixty Thousand Only) by way of crossed Demand Draft on any Nationalized bank of India payable in favour of "The Director, Visvesvaraya Industrial & Technological Museum" payable at Bangalore only. Earnest Money deposits in respect of such offers which are not accepted will be returned to the Bidders within 30 working days from the date on which the final decision is taken about the source from which the items under tender are to be procured or within 2 (two) months from the date of the opening of tenders, whichever is earlier. Earnest Money deposit in respect of the successful bidders will be retained with the Museum until entire execution of the order as per terms of the tender. If the successful bidder fails to execute the order strictly as per the Museum's specifications in full or part within the stipulated delivery period of the purchase order, the Earnest Money deposit retained with the Museum shall be forfeited forthwith after cancellation of the concerned order. No interest will be paid on the Earnest Money deposited with the Museum.
- 6. **Validity of Bids**: The Bids should remain valid for 180 days from the date of Financial bid opening.
- 7. **Rejection of Bids:** Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection. Conditional tenders will be rejected. Non-compliance of applicable General Information and Instruction will disqualify the Bid.

- 8. The tenderers should have Digital Signature Certificate (DSC) for filling up the Bids. The person signing the tender documents should be authorized for submitting the on line e-tender.
- 9. The Financial Bid shall be filled in and signed by the authorized signatory online as per Pro-forma available at Central Public Procurement Portal e-tender system website http://eprocure.gov.in/eprocure/app. Off line Financial Bid shall not be accepted.
- 10. Tender must be uploaded in two separates covers marked Cover-1 (Technical Bid) and Cover 2 (Financial Bid/BOQ). The contents of Cover-1 and Cover-2 shall be as follows:-

Cover -1:

The scanned copy of the following documents should be uploaded.

- i) General terms and conditions (as detailed in Annexure-C format) shall be duly signed & stamped as a token of acceptance and uploaded online by the bidder.
- ii) Copy of the current and Valid GST Certificate, Copy of PAN card, copy of Annual accounts for the last 3 years
- iii) The scanned copy of the Demand Draft for Rs. 60,000.00 as EMD.
- iv) Scanned copy of duly filled, signed and sealed copy of Annexure-B as per tender document.
- v) Copy of OEM/MAF Certification.
- vi) No Relation Certificate & Declaration (as detailed in Annexure D & E respectively).
- vii) Scanned copy of duly signed and sealed 'Technical Specification' as detailed in Annexure F (as a token of acceptance as per specification and quantity).

Cover – 2:

The Financial Bid i.e. Schedule of Price Bid in the form of attached BOQ Pro-forma shall be duly filled in and uploaded online by the bidder.

11. The authorities of Visvesvaraya Industrial & Technological Museum, Kasturba Road, Bangalore – 560 001 who does not bind themselves to accept mere lowest tender and reserves the right to reject or accept any or all tenders wholly or partially without assigning any reason whatsoever.

VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM KASTURBA ROD, BANGALORE – 560 001

TENDER NO. VITM/51/2(4)P/3D/4D MOVIE/VITM/RSC(C)/2022-23 TECHNICAL (Techno - Commercial) BID

Notes: ALL PARTICULARS / INFORMATION SHOULD BE GIVEN IN THE FOLLOWING FORMAT WITH COMPLETE DETAILS.

1.	Name of the Tend	lerer	
2.	address of the Registered Office including		
	given)	he Police station should be	
3.	Name of the Proprietor / Partners/Directors		
4.	Telephone No.	a) Office :	
		b) Workshop/Factory :	
		c) Mobile Phone :	
		d)e-mail Address :	
5.	Name of the Bank	ter and their address:	
6.	GST No. :		
7.	PAN No.		
8.	Payment terms (all payments shall be made only		
	through e-transfer within 15 days from the date		
0	of completion)		
9.	Details of supply done previously.		
10.	1 \		
	days from the due date of opening of e-tender		
4.4	may be offered for acceptance		
11.	Audited Annual A	Accounts for the last 3 years	

We hereby declare that the above statements are true. I/We also declare that the decision of Visvesvaraya Industrial & Technological Museum regarding selection of eligible firm for supply of $3\,D/4\,D$ movie for $3\,D$ theatre for opening of Financial Bid shall be final and binding on me/us.

Dated Official Seal Signature of the Tenderer/
Constituted Attorney

VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM

KASTURBA ROD, BANGALORE - 560 001

TENDER NO. VITM/51/2(4)P/3D/4D MOVIE/VITM/RSC(C)/2022-23

GENERAL TERMS AND CONDITIONS FOR TENDER FOR SUPPLY OF 3D/4D MOVIE FOR 3D THEATRE AT VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM AT BANGALORE & REGIONAL SCIENCE CENTRE & PLANETARIUM, CALICUT.

1. Bidders should have necessary infrastructure and facilities so as to take up the job of supply of the tendered items strictly as per enclosed specifications and drawings with required financial capability.

2. Price:

The prices and rates indicated / quoted shall be inclusive of cost of materials, supply and all incidental charges to deliver the 3D/4D Movies for 3D theatre at VITM & RSC&P, Calicut. The rate of GST and any other taxes / levies to be imposed on the rate shall be clearly mentioned. Prices and rate quoted shall be firm and fixed for the entire period of execution of the order and no escalation of rate on any ground whatsoever shall be applicable.

- 3. The successful bidders shall submit the following documents within 03(Three) days from the date of placement of the order.
 - 1. Duplicate copy of the order duly signed and stamped as a token of acceptance of the order.
- 4. Time is the essence of this contract/work. The job of Supply Of 3D/4D Movie For 3D Theatre At Visvesvaraya Industrial And Technological Museum At Bangalore & Regional Science Centre & Planetarium, Calicut as per specification should be completed within 30 days from the date of placement of the order. For non-compliance of any of the above terms and non-delivery of the tendered items, complete in all respects within the above stipulated delivery period, the Museum shall have the right either to cancel the order or impose penalty as detailed in Clause No. 5. Decision in this regard taken by the Museum shall be final and binding on the successful bidder.

5. Penalty Clause:-

The time allowed for executing the supply as detailed in Clause No. 04 shall be strictly observed by the successful bidder. The supply shall throughout the stipulated period of the order, be proceeded with all the diligence (time being deemed to be the essence of the contract/work) and the successful bidder shall pay to the Museum, an amount equal to 1% of the amount of the contract value for every week that the supply may remain incomplete as per delivery schedule as Clause No. 04 subject to a maximum compensation of 10% of the contract value after which period, action will be taken by the Museum as will deem it.

The Museum may extend the time of delivery of the ordered items at their discretion on the application of the successful bidder for such purpose provided that the Museum considers the reasons for such extension as good, sufficient and acceptable.

6. Every effort should be made to complete the supply by the successful bidder within the specified time schedule. In case the firm fails to comply with Clause No. 04 within the specified time schedule as per the finalized and accepted terms and conditions, the Museum shall have the right to either impose penalty clause

or cancel the order forthwith and the earnest money deposit retained with the Museum shall be automatically forfeited. The decision of the Museum in this regard shall be final and binding on the successful bidder. The successful tenderer cannot claim any compensation for such cancellation or termination of contract.

7. The earnest money deposit of the successful bidder for Rs. 60,000/- (Rupees Sixty Thousand Only) shall be retained with the Museum as Security Deposit until satisfactory execution of the Purchase Order. In case of failure to execute the order in full or part within the stipulated delivery period of the order or failure to adhere any of the terms & conditions of the Purchase Order, the Earnest Money Deposit/Security Deposit retained with the Museum shall be forfeited forthwith after cancellation of the concerned Purchase Order.

8. Payment:

No advance payment shall be made by the Museum on any circumstances. Payment shall be released within 30 (Thirty) working days from the date of receipt of Invoice/Bill duly supported by receipted challan subject to satisfactory inspection report of the ordered materials issued by the competent authority of the Museum.

The agencies should have a valid GST Registration.

9. Warranty:

Manufacturer's standard warranty should be offered by the bidder. The product shall be under minimum warranty of three years. The bidder shall be responsible for all defects of materials including defective workmanship, use of defective materials etc., for the entire warranty period of the manufacture effective from the date of final acceptance of the ordered materials.

- 10. The materials to be supplied by the bidder shall conform to the specifications given by the Museum. Substandard quality of materials & workmanship will not be accepted.
- 11. The Museum shall not be liable for injury of any employee who is deployed by the bidder within/outside the Museum premises at the time of execution of the order.
- 12. Bad workmanship will not be accepted and if carried out is liable to be rejected and should be rectified by the supplier at his own cost & risk as per specifications and directions given by the authorized representative of the Museum.

13. Inspection:

Any defects pointed out by the competent authorities of the Museum during the course of the work have to be promptly rectified by the tenderer at its own cost, including material cost, to ensure desired quality of work, failing which action shall be taken as deemed fit by the Museum and the additional cost incurred in rectifying the defects by engaging other agency shall be recovered from the tenderer. The decision of the Museum in this regard shall be final and binding on the successful tenderer(s).

- 14. Specifications of the items under tender are enclosed for guidance. However, ambiguity in the specifications, if any, shall be promptly brought to the notice of the authorities of the Museum for clarifications during the mobilization period. The successful tenderer shall make no deviation from the approved specifications without the prior written approval of the competent authorities of the Museum.
- 15. If it is noticed that the goods supplied do not conform to the specification of the order, the Museum shall have the right to reject the materials in part or full. The supplier shall be liable to replace the rejected materials within the stipulated time. Till the replacement is done, the rejected materials shall be lying at the risk, cost and responsibility of the supplier. If the supplier do not arrange to replace the rejected materials within the stipulated time, the same may be disposed off at the risk of the supplier and in the manner which the Museum will deem fit. The Museum shall be entitled to retain the proceeds of the disposal either in part

- or in full towards expenses incurred on storage, handling and disposal of the materials. The Museum shall also be entitled to recover the expenses made by them on account of storage and handling of such rejected goods till the goods are removed from the premises of the Museum.
- 16. The successful tenderer shall be liable to pay compensation as per Workmen's Compensation Act for any kind of injury resulting in temporary or permanent disability or loss of life of any employees who are deployed by the successful tenderer at the worksite during the time of execution of the said work. The successful tenderer shall indemnify Visvesvaraya Industrial & Technological Museum against any such liability
- 17. In case the bidder refuses to accept the offer after finalization or does not comply with the Clause No. 03 within 03 (Three) days from the date of placement of the order as per the finalized and accepted terms & conditions, earnest money deposit would be automatically forfeited and the order shall be cancelled forthwith.
- 18. The authorities of the Visvesvaraya Industrial and Technological Museum reserves the right to amend, alter or modify the terms & conditions mentioned above if necessary from time to time.
- 19. The authorities of Visvesvaraya Industrial & Technological Museum, who does not bind themselves to accept the lowest tender, reserves the right to reject or accept any or all tenders wholly or partially without assigning any reason whatsoever.
- 20. Access: The authorities of the Museum shall have free access to the worksite and the successful tenderer shall cooperate with them for inspection and/or examination and testing of the materials and workmanship.
- 21. The successful tenderer shall obtain necessary trade and other licenses as may be required to carry on the tendered job and shall also be responsible for compliance of all rules and regulations which may be in force from time to time by the appropriate authority at his/their own cost.
- 22. The successful tenderer(s) shall not under any circumstances whatsoever transfer wholly or partially this contract/agreement to any other person(s)/firm/company or assign the contract/agreement or benefits of this contract/agreement to any other party for any reason whatsoever in which case this contract/agreement will automatically stand cancelled.
- 23. The quantities specified in the tender may be decreased or increased at the sole discretion of VITM authorities.
- 24. All disputes and differences between the Successful bidder and the Museum of any kind except quality of workmanship and materials whatever arising out of or in connection with the order on the carrying out the supply (whether during the progress of the work or after their completion and whether before or after the determination, abandonment or breach of the terms and conditions of the order) shall be referred to the sole arbitration of a person nominated by the Director General, National Council of Science Museums, Kolkata whose decision in this regard will be final and binding on both the Successful bidder the Museum.

The provisions of the Arbitration and Conciliation Act 1996 or any statutory modification or re-enactment thereof and of the rules made there under for the time being in force shall apply to arbitration's proceedings under this Clause.

ANNEXURE - D

NO RELATION CERTIFICATE

THIS IS TO CERTIFY that I/We have no close relative as an Employee of this National Council of Science Museums or any of its constituents units (close relative means Father, Mother, Brother, sister, Son, Daughter and spouse) nor any such close relatives associated with us as Proprietor/Partner/Shareholder/Director and like.

Signature of the Tenderer,

Address with Office Seal and Date.

VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM (National Council of Science Museums)

Kasturba Road, Bangalore - 560 001.

TENDER FOR SUPPLY OF 3D/4D MOVIE FOR 3D THEATRE AT VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM AT BANGALORE & REGIONAL SCIENCE CENTRE & PLANETARIUM, CALICUT.

Declaration

We do hereby accept the general terms and conditions as provided by the Visvesvaraya Industrial & Technological Museum, Bangalore for Tender for supply of 3D/4D movie for 3D theatre at Visvesvaraya Industrial and Technological Museum at Bangalore & Regional Science Centre & Planetarium, Calicut and also undertake to execute the work strictly as per the specifications of VITM, Bangalore as provided along with the tender document in the event of placement of any order on us. The Museum shall be at liberty to cancel the order in full or in part and also forfeit the Earnest money deposit or Security deposit in the event of failure of any of the above declaration made by us.

Signature of the Tenderer / Authorized Attorney

14

TECHNICAL SPECIFICATION OF SUPPLY OF 3D/4D MOVIE FOR 3D THEATRE AT VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM AT BANGALORE & REGIONAL SCIENCE CENTRE & PLANETARIUM, CALICUT.

mmersive 3D/4D movie for 3D Theatre at Visvesvaraya Industrial & Technological Museum, Kasturba Road, Bangalore - 560001	01 No.
Ouration: Approximate 15-20 minutes Movie Name: Galapagos, Nature's wonderland by NWave Communications - 20 minutes.	
mmersive 3D/4D movie for 3D Theatre at Regional Science Centre & Planetarium, Calicut - 573006	01 No.
Duration: Approximate 15-20 minutes Movie Name: Sea Lions : Life by a whisker by K2 Communications – 20 minutes.	
	isvesvaraya Industrial & Technological Museum, fasturba Road, Bangalore - 560001 furation: Approximate 15-20 minutes Iovie Name: Galapagos, Nature's wonderland by Wave Communications - 20 minutes. mmersive 3D/4D movie for 3D Theatre at regional Science Centre & Planetarium, Calicut - 73006 furation: Approximate 15-20 minutes Iovie Name: Sea Lions: Life by a whisker by K2